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إبداع مستمر

Continued Innovation



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Author

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بسم الله الرحمن الرحيم



CUSTODIAN OF THE TWO HOLY MOSQUES - KING ABDULLAH BIN ABDULAZIZ



HRH Prince Mohammed Bin Nawaf – Saudi Ambassador to the United Kingdom



His Excellency Dr. Khalid Al-Ankary – Minister Of Higher Education Saudi Arabia



Dr Faisal Bin Mohammed Al-Mohanna Abalkhail
Saudi Cultural Attaché in the UK

Preface

In the context of the pursuit of the strategic objectives of the Foreign Scholarship Programme of the Custodian of the Two Holy Mosques, aspiring to develop a distinct society based on the concept of knowledge economy, the Cultural Bureau of the Embassy of Saudi Arabia in London, holds the 7th annual Saudi Students Conference under the kind patronage and direct follow up of the Ambassador of Saudi Arabia in the UK, HRH Prince Mohammed bin Nawaf bin Abdulaziz and His Excellency the Minister of Higher Education Dr Khalid bin Mohammed Al-Ankary.

The 7th Saudi Students Conference in the UK is sponsored and supported by the Saudi Arabian Ministry of Higher Education as well as Imam Muhammad bin Saud Islamic University. Universities Scotland and the University of Edinburgh are hosting the conference. As one of the world's outstanding venues for conferences and conventions, the Edinburgh International Conference Centre (EICC) has been selected to hold our conference.

The conference is a flagship two-day forum, featuring a cluster of disciplines, and establishing, through scientific and research partnerships, the principle of twinning between Saudi universities and research institutions and their British counterparts. Saudi students and students from the countries of the Gulf Cooperation Council (GCC) take part to demonstrate, their diverse scientific interest as well as their pursue of knowledge in various disciplines from within the UK and abroad.

The organisers invite contributions to this major international assembly for the presentation and sharing of research into various aspects of knowledge. Papers and posters have been assessed thoroughly to meet the requirements set by the Cultural Bureau and its scientific committee.

All accepted works will be published in a proceeding with an ISBN code. Works of excellence and distinction will be highlighted, awarded and celebrated.

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Abstract No. 7: High Catalytic Activity of Silicalite in Gas-Phase Ketonisation of Propionic Acid

Hossein Bayahia, Elena Kozhevnikova, Ivan Kozhevnikov
Department of Chemistry, University of Liverpool, Liverpool L69 7ZD, United Kingdom
kozhev@liverpool.ac.uk, hos1397@hotmail.com

Amorphous silica and crystalline silicalite (MFI structure) are demonstrated to be active and environmentally benign catalysts for propionic acid ketonisation at 450-500oC to form 3-pentanone. The silicalite is particularly efficient, and its ketonisation selectivity is increased by a base modification probably through generation of silanol nests. The aim of this work to present that amorphous silica and silicalite are active in the reaction.

Abstract No. 19: Ketonisation of propionic acid over Zn-Cr oxide catalyst

Hossein Bayahia, Elena Kozhevnikova, Ivan Kozhevnikov
Department of Chemistry, University of Liverpool, Liverpool L69 7ZD, United Kingdom
kozhev@liverpool.ac.uk

The aim of this work was to study multifunctional catalysis for the conversion of biomass-derived molecules to value-added chemicals and fuels in heterogeneous systems. As the catalyst, oxides compounds possessing acid-base properties were investigated in deoxygenation of carboxylic acids. ZnII-CrIII mixed oxide was found to be an efficient bifunctional catalyst for ketonisation of propionic acid to form 3-pentanone in the gas phase in continuous flow fixed bed reactor at 350-450oC. Different catalysts with different atomic ratio of zinc and chromium (Zn/Cr = 1:1, 1:6, 10:1, 20:1 and 30:1) as well as ZnO and Cr2O3 were prepared by co-precipitation of ZnII and CrIII hydroxides. Catalysts under study were characterised by a number of physical and chemical techniques such as TGA (water content), BET (surface area and porosity) and XRD (crystallinity). The nature of catalyst acidity was characterised by using FTIR spectroscopy of adsorbed pyridine. The acid strength of catalysts was measured by deferential scanning calorimetry of ammonia adsorption in the gas-solid system. Amongst Zn-Cr oxides studied Zn-Cr (10:1) showed the best results catalyst comparing with others oxides, so we supported this catalyst using alumina, titania and silica by precipitataion method and impregnation as well. 20% Zn:Cr (10:1) / TiO2 impregnation was the best catalysts. It gave 99% conversion of propionic acid with 97% 3-pentanone selectivity at 380oC. This catalyst showed stable performance for 24 h without deactivation.

Abstract No. 36: Tracking Human Actions in Video Stream

Nouf Al Harbi , Yoshihiko Gotoh
Department of Computer Science
University of Sheffield, United Kingdom
nmalharbi1@sheffield.ac.uk, y.gotoh@dcs.shef.ac.uk

The present paper deals with the issue of action recognition in real-life videos. Most of the previous studies in this field were based on space-time interest points, whereas more spatially extended features, such as regions, have received considerably less attention. This is due to the fact that the motion flow information pertaining to a particular region must be subject to temporal collation. This study addresses the matter by applying a sturdy region tracking method. Based on the assumption that a frame consists of an individual as the principal actor and, as such, his/her body regions constitute the regions of interest, a cutting-edge human detection method is applied to generate a model incorporating generic object

foreground segments. These segments are subsequently described using HOG/HOF descriptors in order to delineate their appearance and movement. The LLC coding is employed to optimise the codebook. Experiments on action recognition task using Hollywood2 dataset show that the outcome of this approach is comparable to the state-of-the-art.

Keywords: spatio-temporal segmentation; human volume; object tracking; regions of interest; action recognition.

Abstract No.164: Determination of the Chemical Formula of a New Potential Photocatalyst: N-modified Titanium Dioxide

Khadijah Mohammedsaleh M Katubi, M. Grazia Francesconi
University of Hull
kutbi707@gmail.com

The goal of this project is to develop a low cost, safe and environmentally- friendly nano photocatalyst materials that can use sunlight to catalyse reactions such as splitting of water for the production of hydrogen fuel and breaking up molecules of water pollutants. Novel nanomaterials will be produced by modifying the chemical composition of the most promising materials to favour improvement of the visible-light harvesting properties. The preparation strategy will be based on a combination of the conventional 'cationic' approach with the less conventional 'anionic' approach. Measurements of relevant physical properties such as the band gap of the novel nanomaterials will be constantly related to the synthesis to achieve tailoring of physical properties. A deep understanding of the relationship between band gap, structure, effect of anion substitution and photocatalytic activity will be at the centre of this research.

Abstract No. 177: Dissolved Organic Nitrogen Dynamics in Some Soil Samples from Al Hassa Eastern Oasis, Saudi Arabia

AlMulla A, P. Roberts, D. Jones
Environmental Chemistry Lecturer in University of Dammam, Environmental Health, Department, College of Medical Applied Sciences, Bangor University
Az.almulla@gmail.com

Nitrogen (N) is a primary nutrient regulator of plant productivity in terrestrial desert ecosystem. Furthermore, climate-induced changes in N availability, duration of growing season, and increased temperature and CO2 concentration are thought to be responsible for shifts in vegetation community structure and productivity in some ecosystem. Although N is implicated as a key regulator of ecosystem development, the cycling and competition for N resources in all ecosystems remains poorly understood. Over the past 20 years, there has been a shift in the N paradigm from a focus solely on inorganic N uptake pathways to one which includes dissolved organic N (DON). This aim of this project was to collect different soil types from Hofuf eastern oasis, Saudi Arabia at 2 different depths for determine the concentration of NO3-, NH4+ and amino acids. The concentration of NO3- and NH4+ were relatively higher than the concentration of AA in all soil samples sites. In the present study, the concentration of NO3- in site 1 was 4.60 ± 0.55 mg N / kg, where NH4+ was 1.05 ± 0.13 mg N / kg and AA was 0.19 ± 0.02 mg N / kg at 0-15 cm.

Keywords: Nitrate, ammonium, amino acids, treated wastewater irrigation, groundwater irrigation.

Abstract No.223: Comparison of Multi-objective Hyper-heuristics on tri-objective WFG test problems

Mashael Maashi[1,*], Graham Kendall[1,2], Ender Özcan[1]
ASAP Group, School of Computer Science,
University of Nottingham, Nottingham, United Kingdom
University of Nottingham, Malaysia Campus
*psxmm3@exmail.nottingham.ac.uk

In this study, the performance of three multi-objective selection choice function based hyper-heuristics that are combined with different move acceptance strategies including all-moves (AM), great deluge algorithm (GDA) and late acceptance (LA) are evaluated on the tri-objective the Walking Fish Group (WFG) test problems, which is as a common benchmark for multi-objective optimisation. The performance of our hyper-heuristics are compared to the well established multi-objective evolutionary algorithm; SPEA2. The experimental results demonstrate the effectiveness of the multi-objective choice function great deluge based hyper-heuristic.

Keywords: Hyper-heuristic, evolutionary algorithm, multi-objective test problems, optimisation

Abstract No. 259: Reduction of Imidacloprid, Fenitrothion and Malathion residues from cucumber and tomatoes using washing solutions

Al-Amer S. S. Osama I. A., Abu-Baker Salim, Al-Bahouth F.A.
Food Safety Laboratory, Al-Qassim, KSA,
Central Agricultural Pesticide Laboratory (CAPL) Egypt.
National Research Center (NRC), Egypt.
Almer@yahoo.com

Four aqueous solutions of 5% commercial acetic acid, 5% commercial sodium hypochlorite, 0.01 % potassium permanganate and 1% Huwa-san® in addition to tap water, were evaluated for their removal efficiency of imidacloprid, fenitrothion and malathion residue deposits on cucumber and tomato samples. Cucumber and tomato samples were treated imidacloprid, fenitrothion and malathion at the manufacture recommended rates of application and subjected to the decontamination solutions. The tested washing solutions treatments achieved various reduction rates which were depended on the morphological structure, pesticide types, water solubility of tested pesticides and the octanol-water partition coefficient (Kow). The 0.01 % KMnO4 washing solution was found to be high effective in reducing the pesticide residues due to the high degree of the pesticides degradation in this treatment. However, 1 % Huwa-san® exhibited the high reduction capability ($P< 0.05$) with percent reduction 87.18, 78.95 and 88.50 % in cucumber and 78.36, 74.11 and 85.51 % in tomato for imidacloprid, fenitrothion and malathion, respectively. The present study recommended the use of 1% Huwa-san® as chemical washing solution to reduce the pesticide residues from cucumber and tomato.

Keywords: Imidacloprid, fenitrothion, malathion, cucumber, tomato, Huwa-san, washing, reduction and LC-MS/MS.

Abstract No. 276: A Compression-Based Method for Ranking N-Gram Differences Between Texts

W. J. Teahan , K. M. Alhawiti
Bangor University
wjteahan@gmail.com, alhowity@hotmail.com

This paper presents a new method for ranking n-gram differences between two or more texts. The method uses a relative entropy based approach to rank the n-grams (words, bigrams or trigrams) that appear in the texts, with the most 'unusual' being ranked higher in terms of the difference in entropy as measured by the cost of encoding the n-grams with respect to each individual text. The method can be used as the basis for producing tag clouds and is effective at revealing which topics are different between two or more texts. When a common reference corpus (such as the Brown Corpus of American English) is compared against a set of texts taken from a continuous sequence (such as American Inaugural Addresses), the method has also been found effective at revealing trends and emerging topics.

Abstract No. 300: Chaos and Noise: A New View

Nader Fahd Alharbi
Bournemouth University

Chaos and noise can exist in some situations. It is not easy to distinguish between chaos and noise due to the similarity between them in several properties. Lyapunov exponents are the key to characterize chaotic systems. However, it is not directly clear how it should properly defined. Therefore, the distinction between the chaotic and noise process is one of the most challenging topics. In this paper, we propose a new approach that can help to distinguish between chaotic maps, namely, (Henon, Logistic, Lorentz) and white noise series. The proposed method is based on eigenvalue pattern extracted from singular value decomposition (SVD) and statistical technique.

Keywords: Chaos, Noise, Singular value, Hankel matrix, Random Matrix.

Abstract No. 347: Switching the Direction of Intramolecular Electronic Energy Transfer in Functional Molecular Triads

Effat Bahaidarah and Anthony Harriman
School of Chemistry, Newcastle University, United Kingdom
effat.bahaidarah@ncl.ac.uk, anthony.harriman@ncl.ac.uk

A new molecular triad, constructed from a soluble diketopyrrolopyrrole (DDP) unit linked to two disparate boron dipyrromethene (Bodipy) fluorophores, has been subjected to photophysical examination. The terminal Bodipy dyes differ by virtue of the strength of the donor group situated at the outer periphery of the conjugated pathway, which causes a marked variation in colour, this varying from blue (B) to green (G), with the latter dye being susceptible to protonation. In the symmetrical dyes B(DPP)B and G(DPP)G the photophysical properties remain closely comparable to those of the isolated terminals, confirming that each module remains electronically isolated. However, illumination into the DPP unit results in almost quantitative intramolecular electronic energy transfer (EET) to the terminal Bodipy. Due to more favorable spectral overlap, EET occurs preferentially from DPP to the blue Bodipy dye (kEET = 6 x 1011 s-1), followed by EET from the blue dye to the green subunit (kEET = 0.06 x 1011 s-1) in B (DPP) G traid. Protonation of the green

Bodipy dye increases the spectral overlap term and switches the direction of EET, first to the protonated dye and then to the distal blue terminal.

KeywordS: Energy transfer, Dyes, Molecular Photophysics, Fluorescence, Spectroscopy, Photoacid.

Abstract No. 355: A Video Quality Prediction Model based on a Fuzzy Logic System to Assess the QoS/QoE Correlation

Mohammed Alreshoodi, John Woods
School of Computer Science and Electronic Engineering
University of Essex, Colchester, UK

A model that can predict end user satisfaction or QoE (Quality of Experience) directly from the network QoS (Quality of Service) is still illusive in the field of image processing. This motivates the derivation of a meaningful QoS to QoE mapping function to allow one to be predicted in the absence of the other. This paper presents an affine fuzzy logic based model that can estimate the visual perceptual video quality using a combination of network level and application level QoS parameters. The proposed methodology employs a learning system which optimizes the coded video for best QoE. Four QoS parameters are chosen as the inputs of the designed model, while the output is the Peak Signal-to-Noise Ratio (PSNR). From the results it is clear that the network level parameters have more impact on video quality than the application level parameters. The performance of the model was evaluated using a public dataset.

Keywords: QoE; QoS; video quality; fuzzy logic.

Abstract No. 389: Mechanical and thermal properties of vinyl ester matrix nanocomposites based on layered silicate

A.I. Alateyah, H.N. Dhakal , Z.Y. Zhang
Al Imam Mohammad Ibn Saud Islamic University (IMSIU)
University of Portsmouth,
Abdulrahman.alateyah@port.ac.uk

The Mechanical and thermal properties of vinyl ester matrix nanocomposites based on layered silicate were investigated. To characterise interlaminar structure of the nanocomposites, XRD, SEM, and TEM were performed. The mechanical and thermal properties of neat sample were improved by the incorporation of layered silicate up to 4 wt.% clay loading. Further addition of layered silicate resulted in decreasing the overall properties, which could be traced to the presence of the aggregation layers as proved by the selected characterisations.

Abstract No. 417: Defining the structural parameters of triazole ligands in the template synthesis of silver nanoparticles

Heba Abbas Kashmery
Pure and Applied Chemistry University of Strathclyde

A new methodology for the preparation of triazole sugars has been developed to template the growth of silver nanoparticles (AgNPs) using the Tollen's reagent as a silver source. A series of triazole sugar were prepared containing up to six sugar reducing species. This report presents our latest findings in both the size and shape control of silver nanoparticles and highlights the intramolecular mechanism associated with their formation. Besides kinetic experiments to determine the rate of AgNPs formation, scanning electron microscope (SEM) studies of AgNPs produced are discussed. Furthermore, the stability of these nanoparticles in aqueous solution containing high concentrations of sodium chloride is presented.

Keywords: silver nanoparticles; Tollen's reagent; Uv-vis spectroscopy; chemicals reduction; surface plasmons; click chemistry.

Abstract No. 513: A Hybrid of MOEA/D and Guided Local Search applied on 0/1 Multiobjective Knapsack Problems

Ahmad Alhindi and Qingfu Zhang,
University of Essex
aalhin@essex.ac.uk, qzhang@essex.ac.uk

Multiobjective Evolutionary Algorithm based on Decomposition (MOEA/D) decomposes a multiobjective optimisation into a number of single-objective problem and optimises them in a collaborative manner. This paper investigates how to use the Guided Local Search (GLS), a well-studied single objective heuristic to enhance MOEA/D performance. In our proposed approach, the GLS applies to these subproblems to escape local Pareto optimal solutions. The experimental studies have shown that MOEA/D with GLS outperforms the classical MOEA/D on the multiobjective 0/1 knapsack problem.

Keywords Multiobjective Optimization, Decomposition, Guided Local Search, Evolutionary Algorithms, Pareto Optimality, and Hybridization.

Abstract No. 521: Derived Functors in Abelian Categories

Dalal Rajaalla Almhamdy and Dr. Luigi Previdi
School of Mathematical Sciences, University of Nottingham, UK

In this project we showhow one can lift left or right exact sequences to exact equences. For this purpose the definition of left and right derived functors will be given and some properties of them will be given.

Keywords: Abelian category, "Tor ", "Hom "and "Ext "functors, Homomorphisms, Morphisms, projective and injective modules, Horseshoe Lemma.

Abstract No. 568: Implementation and Preliminary Performance Results for GUMSMP: A Multilevel Parallel Haskell Implementation

Malak Aljabri, Hans-Wolfgang Loidl, and Phil Trinder
Heriot-Watt University/ Glasgow University
{ma767, H.W.Loidl}@hw.ac.uk, Phil.Trinder@glasgow.ac.uk

The most widely available high performance platforms today are hierarchical architectures e.g. clusters of multi-cores that are available even to small companies. Several parallel Haskell implementations are available for the Glasgow Haskell Compiler (GHC). In particular, Symmetric Multi-Processor implementation (GHC-SMP) supports shared memory, and the Graph Reduction for a Unified Machine Model implementation (GUM) supports distributed memory architectures. Both implementations use different but related runtime-environment (RTE) mechanisms. Good performance results can be achieved using shared memory architectures and on networks individually; but a combination of both, optimised for networks of multi-cores, is lacking. This paper presents the implementation and preliminary performance results for GUMSMP: the new multilevel parallel Haskell RTE implementation for exploiting parallelism in hierarchical architectures. Initial performance results show that GUMSMP delivers good speedup with some applications and is more scalable than current alternatives.

Abstract No. 573: Readiness Measurement Application adopting Balanced Scorecard

Sameer Nooh and Helge Janicke
De Montfort University
sa.nooh@yahoo.com, heljanic@dmu.ac.uk

Information Technology is one of the most important things used in our daily lives where most organizations are dependent on the system to facilitate the tasks of work, Balanced Scorecard is one of the most successful means to measure the performance of the organization and achieve the strategic goals, Readiness in IT should be aligned to prevent gaps that are created as a result of ineffective configuration between the IT deployed and the business requirements. To bridge this gap, organizations implement IT as well as business strategies at the same time (top-down planning) ignoring other factors necessary for IT readiness.

Keywords: Readiness Measurement, IT Readiness, Technology Readiness Level, Prioritizing IT readiness.

Abstract No. 615: How Can Adjustable Autonomy mechanisms be Implemented in Adaptive Course Sequencing System?

Abdulkareem ALZAHRANI, Vic CALLAGHAN and Michael GARDNER
Department of Computer Science, University of Essex, UK
aaalza@essex.ac.uk

This paper presents adjustable autonomy and its application in adaptive course sequencing. The research aims to explore an adaptive course sequencing system (ACSS) which adapts the sequence of learning units based on the student's profile and learning behaviour using soft computing techniques. The main contribution of this research is to make ACSS user driven by equipping it with adjustable autonomy mechanisms which allows student, tutor or some automated process to set the desired level of autonomous guidance. In addition, the system enables the teacher to reedit the sequence/guidance rules. This paper gives an overview of the research area and presents an initial conceptual model which describes the proposed components in ACSS, and the relationship between these components.

Keywords: Adaptive course sequencing, intelligent tutoring system, adaptive educational hypermedia system.

Abstract No. 706: More on the Naturalness of the Constrained Exceptional Super Symmetric Standard Model

Maien Y. Binjonaid and Stephen F. King
University of Southampton, King Saud University
Mymb1a09@soton.ac.uk, King@soton.ac.uk

The Electroweak sector in E6 supersymmetric models is subject to some degree of fine tuning in the percent to permil level. This can be attributed to the experimental limits on both the mass of the Z' boson associated with the extra symmetry in the model, as well as the masses of naturalness-related sparticles (which is a general source of tuning in supersymmetric models). However, the degree of tuning is, in general, less severe than in the minimal supersymmetric standard model with universal fundamental parameters. We quantifying the fine tuning in regions of the parameter space of the constrained exceptional supersymmetric standard model corresponding to values of tanb (the ratio between the vacuum expectation values of the up-type and down –type Higgs doublets) below and above 10. It is found that, a Higgs boson, a gluino, and a Z' boson with masses: 125 GeV, 1.4 TeV, and 3.8 TeV, respectively, correspond to fine tuning 0.2% (0.1%) for tanb = 30 (tanb = 5).

Keywords: Gum, parallelism, GHC-SMP, Haskell, multicore, cluster.

Abstract No. 918: Tag Hierarchies Construction Approaches: A Brief Review

Fahad Ibrahim Bin Moqhim
University of Southampton, Southampton, UK
fmoqhim@hotmail.com

As the web content today is huge and constantly growing, building and maintaining taxonomies for such content manually is costly and time-consuming. Folksonomy has emerged to deal with this issue by providing a collective approach based on social classification. Yet, folksonomies are beset by many problems due to the lack of consistent structure. Thus, many researchers have been resolving this problem by proposing approaches for acquiring latent hierarchical structures from folksonomies and building tag hierarchies. The aim of this paper is to give a brief review on these approaches and highlight their limitations to give inspiration for further improvement in the future.

Keywords: Collective Intelligence, Folksonomies, Tag Hierarchies.

Abstract No. 952: Covalent Organic Frameworks for Biological Entrapment

Razan Alshgari
School of Chemistry, the University of Nottingham, Nottingham, Nottinghamshire, NG7 2RD, UK
pcxra2@nottingham.ac.uk

Covalent organic frameworks (COFs) are a new class of porous crystalline materials. COFs possess many unique advantages such as low density, large surface areas and high thermal stability. These advantages have offered the COF materials with superior potentials in advanced applications such as gas storage,1 catalysis,2 and separations.3 A novel boron-COF compound has been synthesized via three different routes. The preparation of this compound requires the synthesis of the precursor 2,3,6,7,10,11- hexahydroxytriphenylene (HHTP).

Keywords: covalent organic framework, boron, HHTP.

Abstract No. 963: Agile Methods and Quality Assurance

Fahad Ibrahim Bin Moqhim
University of Southampton, Southampton, UK
fmoqhim@hotmail.com

Although agile methodologies have become a controversial issue, they have been growing rapidly in the world of software development. They can adapt technology in an environment that is changing continuously. However, some researchers debate about the software quality achieved by these methodologies. The aim of this paper is to discuss and make sense of the software quality assurance of agile development methodologies. The paper gives a brief review of agile methodologies, the advantages of using agile approaches focusing on quality over traditional approaches, and the key factors that have to be involved through the agile development processes.

Keywords: Agile Methodology, Quality Assurance, Software Development.

Abstract No. 972: Evaluating National Address Database as a Record of Vague Places: Ambiguity of Villages and Their Extents

Firdos Almadani, Peter Fisherand Claire Jarvis
Department of Geography, University of Leicester
{Fma7, Pff1,Chj2}@leicester.ac.uk

In this paper we explore the issue of contradiction and ambiguity in relation to place names for local settlements (villages) from Ordnance Survey and Royal Mail postal address records. We identify a number of inconsistencies between spatial footprints of the same apparent villages recorded in multiple datasets, and villages of different names in the same location. This study provides clear evidence on the reasons behind these issues, which could be usefully explored and considered in further research

Keywords: Ambiguity in database, rural villages, addresses point, vague places, spatial extent.

Aviation and Transportation Papers

(Short Abstract only)

Abstract No.658: Analysing the Frequency of Traffic Crashes in Riyadh City Using Statistical Models and Geographical Information Systems (GIS)

Saleh Abdulaziz Altwaijri,
Loughborough University
saltwaijri@yahoo.com, saltwaijri@hotmail.com

Traffic crashes in Riyadh city cause losses in the form of deaths, injuries and property damages, in addition to the pain and social tragedy affecting families of the victims. The primary objective of this paper is therefore to explore factors affecting the frequency of road crashes in Riyadh city using appropriate statistical models and GIS approach to integrate the datasets and to calculate the yearly crashes per spatial unit aiming to establish effective safety policies ready to be implemented to reduce the frequency of road crashes in Riyadh city. Crash data for Riyadh city were collected from the Higher Commission for the Development of Riyadh (HCDR) for a period of five years from 1425H to 1429H (2004-2008). A negative Binomial (NB) model was employed and the units of analysis were 168 HAIs (wards) in Riyadh city. The results from the frequency model suggest that population is positively significant with the frequency of fatal and serious injury crashes (at the 99% confidence level). Percentage of illiterate people and the income per capita found to be positively significant with the frequency of fatal crashes; and the increased residential, transport, and educational areas of land use is associated with the decreased level of fatal and serious crashes occurrences. Based on the findings, a range of countermeasures are proposed to reduce the frequency of traffic crashes in Riyadh city.

Keywords: Traffic safety, Riyadh city, Crash frequency, GIS, Negative Binomial model.

Abstract No. 718: Conceptual Design of Desert SAR Aircraft

Ahmad N.Alsudairi and Prof Howard Smith
Cranfield University, Cranfield, Bedford, MK43 0AL
alsudairi.a@gmail.com

There were number of recorded cases of lost people casualties in the Saudi Arabian deserts recent years. Some of those cases showed a weakness in the airborne SAR missions' methodologies used. In this thesis a conceptual design of Desert SAR aircraft was carried out. It was started by building a mission requirements projected from desert loses cases in Saudi Arabia. Then a compotators database was made. After that aircraft geometry and performance was designed. Then, multi-variable optimization (MVO) tool was used for iterating the design until reaching an optimum design point. Finally, a CAD model was made to represent the design. The design was made to be complied with the specifications of CS-23.

Health & Social Studies Papers

(Short Abstract only)

Abstract No. 237: Safety and Clinical Effectiveness of Chloral Hydrate for Painless Procedural Sedation in Children

Badriyah Shadid Alotaibi*, Imti Choonara, Helen Sammons
Graduate Medical School Child Health, University of Nottingham, United Kingdom
knjo79@hotmail.com

Aims: To analyse all studies discussing effectiveness and safety (adverse events (AEs)) of chloral hydrate as a sedative drug in children undergoing diagnostic and/or treatment painless procedures. Methods: A systematic literature review of MEDLINE (1948–January 2012), EMBASE (1980–January 2012), COCHRANE (from 1974 to January 2012) and CINAHL (from 1974to January 2012). The search terms used included "chloral hydrate" and "children or infant or pe*diatric* or neonate or adolescence or adolescences or adolescent" and "sedation". The search was limited to the studies that assessed chloral hydrate safety and efficacy in children, up to the age of 18 years, undergoing painless procedures. Retrieved articles were reviewed and data were abstracted using standardised data collection. Trial quality was assessed using the Jadad score for RCTs and STROBE scoring checklist for observational studies. Results: Out of the 76 articles identified, 60 met the inclusion criteria for analysis of AEs. Hypoxia is the most commonly reported AE, incidence rate of 5.1 per 100children. Many cases (528) were mild (SpO2 90-95%), 3.5 per 100. Moderate hypoxia (SpO2 <90%) was seen in 247 cases, 1.6 per 100, and was completely reversible after using simple manoeuvres, such as supplemental oxygen therapy. There were no deaths, however eight serious respiratory AEs all required medical interventions and/or hospitalisation. Hypoxia was more common in infants under two years (8.0 per 100children). The second most frequently reported adverse event was vomiting, risk of 2.9 per 100 children. 58 studies met the inclusion criteria for the analysis of clinical effectiveness. The success rate of painless procedural sedations was variable (range 50%-100%). The success rate (up to100%) was higher for shorter imaging procedures such as CT imaging versus (81%) for MRI. Conclusions: The systematic review suggests that chloral hydrate is a safe and effective agent for painless procedural sedation. The moderate incidence of hypoxia emphasizes the importance of monitoring children during sedation, especially in infants.

Keywords: Painless Procedural Sedation, Children, Chloral Hydrate, Systematic Review

Abstract No. 265: A Comparison of Spinal Angles When Performing a Typing Task on a Laptop and Desktop in Healthy Subjects - A Preliminary Study

Hiedar Alyami
Cardiff University, 140 Queen Street, Cardiff, CF10 2GP, United Kingdom
h_qanas@hotmail.com

The purpose was to discover whether there is a difference in four postural angles whilst performing a typing task on a laptop and a desktop computer. Twenty healthy participants were asked to perform a five-minute typing task on each computer. Statistically significant differences for all angles were found when comparing sitting at the desktop computer to sitting at the laptop. Neck angle ($p < 0.0005$); head tilt ($p < 0.0005$), and lumbar lordosis ($p = 0.018$) when using the laptop were significantly higher. The greatest posterior pelvic tilt was associated with the desktop ($p = 0.018$). Therefore, a desktop appears to be more appropriate for the cervical and lumbar regions; on the contrary, using a laptop may be more suitable for pelvic tilt.

Keywords: computer; spine; head, lumbar, pelvic; posture, seating.

Abstract No. 317: The Extent and Nature of Family Violence and Female Offending in Saudi Arabia

Maha Alluhaibi
School of Human and Health Sciences, University of Huddersfield, UK
u0874281@hud.ac.uk, angel22313@hotmail.com

While western literature contains many studies on juvenile delinquency, research on juvenile delinquency in Arab societies, in general, and in Saudi society, in particular, is rare. While a link between family violence and juvenile offending has been supported by several western studies, there is less known about the risk factors associated with family violence, which might produce delinquent outcomes. The research aims to establish: 1. The extent and nature of family violence and delinquency among juvenile females (12 to 18 years old) in Saudi Arabia. 2. Whether there is a link between experiencing or witnessing family violence and later offending. 3. The risk and protective factors that might be associated with the link between family violence and delinquency. The present study uses a survey based approach using a self-completion questionnaire, which is distributed to young female students aged from twelve to eighteen years at intermediate and secondary schools in Makkah city.mThe initial findings from both the pilot study and the main fieldwork suggest that the extent and nature of family violence and female delinquency in Saudi society is grossly underestimated.

Keywords: Saudi Arabia, Female Offender, Family Violence, Risk and Protective Factors

Abstract No. 453: Anger and Depression in Saudi Adults

Khaled Alrwailan
Clinical Psychology Department, School of Humanities and Social Science, The University of Edinburgh
Khaledalrwailan@hotmail.com

Purpose: The aim of this study was to investigate whether anger is related to depression and to investigate whether the New Multi-dimensional Depression Scale (NMD) (version 2) is better than the Beck Depression Inventory (BDI-II).

Method: The study included 242 students aged between 17 and 58, mean age = 29.36, SD = 7.5, consisting of 134 Male and 108 Female. The questionnaires were distributed to the students in the main study in Saudi Arabia and then collected again. Also, an email survey of Saudi students studying in the United Kingdom was conducted and the data from this survey was then put into SPSS Version 19. Results: Internal-Dysfunctional, External-Dysfunctional, Sadness and Disgust come through many analyses that suggest that these variables are the core of depression. The New Multi-dimension Depression (NMD) measures more variables than the Beck Depression Inventory (BDI-II). The result of regression analysis showed that anger is significant predictor of the NMD total. Total R = 0.797, R2= 0.635, adj. R2 = 0.621. Conclusion: Finding of the current study suggest that anger plays an important role on the depression and the New Multi-dimension Depression (NMD) measures more variables than the Beck Depression Inventory (BDI-II) and has a better structure. It pulls in more variable predictors such as anger, probably because the NMD measure has more details and includes an interpersonal subscale, but the BDI-II does not look at interpersonal, so it is maybe inefficient details, because it does not tackle somatic symptoms.

Keywords: Depression, anger, interpersonal.

Abstract No. 532: Intra-Session and Inter-Session Reliability of the Wii-Balance-Board When Assessing Standing Balance in Children

Afrah Almuwais*, Emma Stack, Ann Ashburn
Faculty of Health Sciences, University of Southampton, Southampton, SO17 1BJ
a.almuwais@soton.ac.uk

The Wii-balance-board (WBB) provides valid centre of pressure (COP) path length which assess standing balance. The research testing the reliability of WBB remained limited to adults. This study aimed to test the intra-session and inter-session reliability of COP length measured by WBB with children. Twelve children with the mean age of 8.5 years (± 1.9) attended two sessions during a week. Children were asked to stand on the WBB on both legs with eyes closed and eyes open, and stand on one leg with eyes closed and eyes open. All data recorded was normally distributed and no significant variability was detected. The COP length measured by the WBB is a reliable measure (both intra and inter- session) of standing balance for children during double stance only. Single stance does not provide a reliable measure of COP length and may not be a practical test for children.

Keywords: Wii balance board, Center of pressure (COP), Reliability, Children.

Abstract No. 724: Neck Pain Exercise

Raghda Farhan
Department of Primary Care and Public Health Sciences, School of Medicine, Guy's Campus King's, College London, United Kingdom
Raghda.farhan@kcl.ac.uk

Neck pain is a widespread condition throughout many regions in the world. It has a considerable impact on individuals and their families, health-care systems and businesses. Most people experience neck pain at some point in their lives. Exercise therapy is the corn-stone of musculoskeletal intervention and a cost-effective intervention that provides patients with education, active management skills and home based exercise. This review is aiming to identify the optimal therapeutic exercise component for treating chronic neck pain symptoms, based on the best available evidence. Results have shown the most effective therapeutic exercise on the treatment of neck pain symptoms. Strong evidence supports cervical muscles training to ease neck pain and enhance proprioceptive, neck and upper body progressive strength and endurance exercise to decrease pain, disability and improve function. Poor evidence found on the effect of stretching, eye fixation, range of motion training and behavioural graded activities.

Keywords: neck pain/ exercise/ strengthening/ office workers/ muscles/ home exercise/ training.

Abstract No.726: Assessing Engagement with a Childhood Obesity Family Based Intervention Programme

Shaza M Aboouf Hammed
Human Nutrition ad Child Health Department, Medical School, Glasgow University
Shmaboouf@Hotmil.Com

Rational: The effectiveness of Multidisciplinary Family-based Weight Management Programme (MFWMP) for treating the recently emerging children obesity, remains questionable with 27%-90% attrition rates of the families' dropout from the interventions.
Study aim: To evaluate baseline predictors of dropout of these interventions, children and their parents attended series of MFWMP in Glasgow between 2009 and 2012. Intervention year, location, child demographics, socioeconomic and anthropometric sds z-score, family quality of life, readiness to make change were analysed retrospectively. Analysis and results: Using multivariate logistic regression, only child age, socioeconomic status, programme location and year showed significant unadjusted odds ($p<0.05$) for predicting drop-out. Older children tend to drop out; while children from middle socioeconomic backgrounds are less likely to drop out by 2.08 times from most deprived children. Attrition rate was at least 3 times higher in early years of the programme than later years and it was less likely in some locations than in other Glasgow areas. Conclusion: This study suggests that tailored interventions targeting these characteristics (children age, socioeconomic status, programme location and year), are needed to increase retention in such programmes.

Keywords: Children, Obesity, Overweight, Family Weight Management Programs, Attrition.

Abstract No. 853: Enhancing Service Delivery in Saudi Arabia: The Development of a National Family Safety Program for Child Protection Multidisciplinary Training

Ejalal Jalal
Greenwood Institute of Child Health, School of Psychology, University of Leicester
ej75@le.ac.uk

Aim of the Study: Investigate the perceived impact of multidisciplinary training on the practice of professionals who deal with maltreated children and who attended the National Family Safety Program. Specific Objectives: To establish evidence-based knowledge on child protection training programmes to improve the National Family Safety Training Program (NFSP) for child maltreatment in Saudi Arabia.

1. To evaluate a pilot project by investigating the impact of the training programme on practice and make adjustments to meet needs.
2. The findings will lead to the development of tools in the context of action, an intervention guide for professionals and a training kit for facilitators.

Methodology: Mixed-method research will be used, and the process of data collection

- In the first phase: quantitative component containing pre- and post-training questionnaire survey. The data will be collected for each item, before starting the training and immediately after training for the short-term outcome evaluation.
- In the second phase, qualitative research methods will be used by followup interviews after three/six months for the medium-term evaluation outcome. Results: Preliminary findings will be presented when it is collected.

Medical Sciences Papers

(Short Abstract only)

Abstract No. 25: New advances in insulin-like growth factor-Oestradiol crosstalk and breast cancer

Yousef MohammedRabaa Hawsawi
University of Leeds, Faculty of Medicine and Health, UK
hawsa33@hotmail.com

Oestrogen (E)-dependent breast tumours can be resistant to anti-oestrogen therapeutic strategies. This may occur by E-independent activation of oestrogen receptors (ERs) ERα and ERβ by other growth factors. Insulin-like growth factors (IGFs) are potent mitogens for breast epithelial cells, and evidence suggests that IGF-I may activate ERα in an E-independent manner to provide a mitogenic stimulus. Compelling evidence suggests that ERβ may act as a tumour suppressor to regulate the activity of ERα, so it is important to investigate the potential effects of growth factors on the expression and activity of this ER isoform. Moreover, we have previously reported that IGFBP-5 inhibits mammary gland function and cell migration, and stimulates cell adhesion, suggesting that it functions as a tumour suppressor. In the present study, we investigated the expression of IGF axis genes and ERα and β in parental and tamoxifen-resistant (TamR) MCF-7 cells, using RT-PCR. ERα was expressed at a much higher level than ERβ in both cell lines. Furthermore, IGFBP-2, -4 and -5, along with IGF-IR and IGF-2R, were the most abundantly expressed members of the IGF axis. IGFBP-1,-3 and -6 were expressed at very low lev-els. With respect to TamR cells, we found that IGFBP-5 was down-regulated, while IGFBP-2 was up-regulated. We confirmed changes in IGFBP-5 and IGFBP-2 expression by using enzyme-linked immu-nosorbent assay to measure IGFBP-5 and IGFBP-2 secreted in conditioned medium. In conclusion, IGFBP-5 and IGFPB-2 emerged as potentially fruitful novel target proteins with regard to BCa anti-oestrogen therapy.

Keywords: Apoptosis - Breast cancer –GRP30 - IGFs – IGFBPs- Tamoxifen.

Abstract No. 33: Medication Burden and Clinical Outcomes Early after Acute Stroke

Sukainah Al AlShaikh
Dr Jesse Dawson, Prof Matthew Walters
Institute of Cardiovascular and Medical Sciences, University of Glasgow
s.al-alshaikh.1@research.gla.ac.uk

Background - Stroke is a common cause of morbidity and mortality. Rate of recurrence of stroke is high and severity of disability and mortality rate increases after secondary stroke. Guidelines recommend all patients after stroke are prescribed medications that modify risk of recurrence. Adherence to these prescribed medications is not optimal. The aim of this study is to quantify adherence and predict factors of non-adherencea after stroke, such as polypharmacy. Methods - Data were extracted from the Virtual International Stroke Trials Archive (VISTA). Medications were coded according to the WHO ATC index and were classified into either secondary preventative medications or other drugs. Drugs for secondary prevention were categorised as 1) antithrombotics (antiplatelets or anticoagulants), 2) antihypertensives, 3) antidiabetics, or 4) lipid-modifying agents. The frequency of prescribing each and every agent and the rate of adherence were reported. Results - A total of 10304 patients were included in the analysis of this study. The mean age of subjects was 69.4 ± 12.4 and 54.5% were males. Overall, secondary prevention medications after stroke counted for 33879 i.e. 32.8% of the total prescribed medications. Antihypertensives were prescribed 17659 times, antithrombotics 13098 times, antidiabetics 3873 times and lipid-modifying agents 2128 times. Generally, each patient received a mean of 7.1 (SD, 7.005) and a median

of 5 drugs (IQR, 3 to 9), regardless of daily dose frequency. Percentage of adherence to anticoagulants, antidiabetics, antihypertensives, antiplatelets and lipid modifying were 66.4, 51.5, 52.2, 68.1 and 81.4, respectively. Conclusion - Adherence to secondary stroke prevention medications is poor and many factors could play a role in non-adherence. Predictive factors of non-adherence need to be addressed and patients with expected non-adherence need to be given additional care to improve their adherence.

Keywords - Stroke, recurrent, secondary, prevention, adherence, polypharmacy.

Abstract No. 126: The distribution of Anti-Cancer drug in solid tumours studied by MALDI-Mass Spectrometry Imaging

Afnan Batubara[1], Paul M. Loadman [2], Chris W.Sutton [2] , S.D.Shnyder [2] and Malcolm Clench[1]
[1]Biomedical Research Centre (BMRC), Sheffield Hallam University
[2] Institute of Cancer Therapeutics, University of Bradford
Afnan.Batubara@student.shu.ac.uk

Vascular disrupting agents (VDAs) are involved in the treatment of many cancers. DMXAA (5, 6-dimethylxanthenone-4-acetic acid) is a low molecular weight drug which has an anti-vascular effect in experimental tumours. Phospholipids play an important role in the content of cell membranes and are important molecules to be investigated in colon cancer. Here we present a novel method for the study of phospholipids and drug distribution within a LS174T xenograft tumor by MALDI - Mass spectrometry imaging. The image of the 4h treated xenograft tumor has shown the drug distributed mainly in the centre of tumour. While, the image of the 24h treated xenograft tumor has shown drug distributed around the periphery suggesting the drug tends to migrate to the periphery of the tumor after vascular damage. Markers of necrosis were determined by imaging phospholipids in both positive and negative ion mode. These phospholipids were found to be highly expressed in cancerous tissue.

Keyword: Anti-vascular drug, DMXAA, Xenograft tumor, LS1 74T, Colon cancer, Phospholipids, MALDI-MSI.

Abstract No. 182: DNA Binding Studies of Fluorinated Active Compounds

Mariam Mojally
Department of Chemistry, Loughborough University, Loughborough, UK
m.mojally@lboro.ac.uk

Fluorinated heterocyclic compounds have drug like properties and possess valuable biological activity due to their rigid chemical structures and the high solubility profile. Novel fluorinated heterocyclic active compounds have been synthesized by nucleophilic aromatic substitution of perfluorinated compounds such as pentafluoropyridine, hexafluorobenzene and pentafluorotoluene with carbazole or 1-bromo-2-naphthol. Their interaction with DNA was investigated by thermal melting studies via U.V. absorption at 260 nm using Calf thymus DNA double strand during gradual increase in the temperature from 50 ℃ to 100 ℃. 1-bromonaphth-2-yl tetrafluoropyrid-4-yl ether showed very high activity and binds to DNA more than other compounds possibly by intercalation.

Keywords: Heterocyclic fluorinated compounds, DNA binding, DNA thermal denaturation, DNA drug interaction.

Abstract No. 197: N-Cadherin is an Important Mediator of Interactions Between Myeloma Cells and Osteoblasts

Osama Al-Amer[1], Allan Williams1, Colby Eaton[1] and Peter Croucher[1-2]
[1] Bone Biology Group, University of Sheffield
[2] Garvan Institute of Medical Research, Sydney, Australia
osama_alhashmi@hotmail.com

Introduction: Multiple myeloma is a plasma cell malignancy that causes extensive osteolytic bone disease. Present treatments target end stage disease but understanding how bone lesions are initiated may offer new approaches to prevent/suppress colonization. It is clear that myeloma cells form specific interactions with the bone microenvironment, where they can remain dormant and protected from current therapy to eventually proliferate and cause disease progression. N-cadherin is an adhesion molecule that been implicated in the localization of haematopoietic stem cells (HSCs) to 'niches' containing osteoblasts on endosteal bone surfaces. In this study, we have tested the hypothesis that myeloma cells utilize N-cadherin to adhere to osteoblasts in vitro and in vivo during the colonization into the bone. Findings: N-cadherin mRNA and protein were expressed by osteoblasts and myeloma cells. We showed focal expression of N-cadherin in myeloma cells, whereas expression was observed contiguously on the membranes of adjacent osteoblasts. N-cadherin expression significantly increased during osteoblastogenesis. Immunohistochemistry demonstrated staining of N-cadherin when myeloma cells were in contact with osteoblast in vitro and in vivo. Blocking N-cadherin mediated interactions, using specific antibodies against N-cadherin, significantly reduced adherence of myeloma cells to osteoblasts in vitro. Attempts were made to block the adhesion of myeloma cells to bone cells in calvarial bones in vivo. These studies were in conclusion suggested that there may be a role of N-cadherin in these interactions. Conclusion: These studies provide evidence that adherence of myeloma cells to osteoblasts is mediated by N-cadherin in vitro and in vivo, suggesting that myeloma cells may occupy a niche similar to that used by HSCs in bone.

Abstract No. 431: Dietary Patterns and Protein Intake Among Infants and Toddlers in Scotland and Saudi Arabia

Alzaheb R
Almotairi M, Armstrong J, Sherriff A and Wilson M
University of Glasgow
Riyadh.Alzaheb@gcu.ac.uk

Toddlerhood is a vital phase of early life, during which long-term dietary habits are established. Two comparative studies have been carried out in Scotland and in Saudi Arabia to evaluate changes in dietary intake during the transition from baby food to table food. A three-day food diary was used to record food and beverage intake data, which was then analysed using dietary analysis software. The main finding of both the Scottish and Saudi studies was that there was a rapid increase in protein intake during the transition towards a family food diet.

Keywords: Dietary intake and protein.

Abstract No. 650: EGFR Ligand Release is Mediated by ADAMs and Contributes to Cetuximab Efficacy in Triple Negative Breast Cancer; a Possible Role for ADAMs Inhibition

Ashwag Albukhari, Syed Haider, Francesca Buffa, and Anthony Kong
University of Oxford, Oxford, UK
ashwag.albukhari@oncology.ox.ac.uk

Despite EGFR is frequently overexpressed in the majority of triple negative breast cancer patients (TNBC), inhibition of EGFR using cetuximab have showed a poor response rate in those patients. Therefore, further studies are required to obtain biomarkers that predict sensitivity to cetuximab and enhance the response of TNBC patients to cetuximab-treatment. In this study, we found a significant association between high EGFR expression and worse clinical outcome in a cohort of 2000 breast cancer patients, including TNBCs. Furthermore, we found a positive correlation between EGFR expression and sensitivity to cetuximab in a panel of TNBC cell lines. Our results indicated that cetuximab, as a single agent, failed to completely inhibit EGFR signalling pathway in cetuximab-sensitive cell lines that could be due to ADAM-mediated release of active EGFR ligands. Stimulation of cetuximab-treated cells with exogenous ligands reduced the effect of cetuximab and induces an activation of EGFR pathway. However, co-treatment with ADAM inhibitor significantly inhibited cetuximab-induced ligand release and enhance cetuximab efficacy in inhibiting EGFR pathway. Furthermore, this combination significantly inhibits the cellular proliferation; induce apoptosis and cell cycle arrest of TNBC cells in vitro. Furthermore, Inhibition of ADAMs enhances anti-tumour effect of CTX in TNBC xenograft. Collectively, our data suggest that EGFR expression could predict sensitivity to cetuximab and prevention of EGFR ligand-release by inhibiting ADAMs might enhance the efficacy of cetuximab in TNBC, which could be a novel approach to develop therapies for TNBC patients.

Keywords: Breast cancer, EGFR, cetuximab, ADAM.

Abstract No. 840: Prevalence of Non-Syndromic Orofacial Clefts in the Western Region of Saudi Arabia

Sabbagh HJ1 Alamoudi NM1 Innes NPT2 El Derwi D3 Abdulhameed FD Hanno AG1 Al-Aama J4 Mossey PA6
King Abdulaziz University
University of Dundee University
Cairo University

Objectives: to study the epidemiology of non-syndromic orofacial cleft (NSOFC) in the western region of Saudi Arabia and consanguinity's influence. Materials and Methods: All infants born in the main hospitals in two large cities in Saudi Arabia; Jeddah and Maddina from 1st of January 2010 to 31st of December 2011 were included. Data collection was carried out through clinical examination and parental interview. NSOFC diagnosis was confirmed. Results: Birth prevalence of NSOFC in the western region of Saudi Arabia was 1.2/1000 births with cleft lip (CL) 0.55/1000 births, cleft lip and palate (CLP) 0.46/1000 births and cleft palate (CP) 0.22/1000 births. CP was significantly related to consanguinity ($p = 0.03$). Conclusion: The birth prevalence of NSOFC in the western region of Saudi Arabia was similar to the global prevalence. CL was higher than CLP which was different than the global findings. CP was significantly related to consanguinity.

Keywords: Saudi Arabia, Orofacial cleft, cleft lip, cleft palate, consanguinity.

Education and Linguistics Papers

(Short Abstract only)

Abstract No. 149: Tatweer Schools in the Kingdom of Saudi Arabia: Innovation and Autonomy

Rfah Hadi Alyami
Institute of Education, University of reading,UK
r.h.a.alyami@student.reading.ac.uk

Globalization has a significant influence on the educational system of Saudi Arabia. Therefore, this study is the first to investigate the impact of educational policy development on practice within Tatweer Schools in this country. This study is important in terms of timing, as the Tatweer Programme is a new policy innovation. It is hoped that the research will provide policy-makers with insights into actual practice and the real-life context within such schools. This preliminary study uses qualitative data obtained in semi-structured interviews; focus groups and documentary analysis. The majority of the participants have a positive attitude about the Tatweer Programmes. It is a major shift of Saudi educational policy; moving from centralization to decentralization, from focusing on the individual to team learning; from being isolated school to be open schools and having a partnership with society. Despite these significant developments, however, the level of students' achievement has not been changed.

Keywords: Decentralization. School reform. Autonomy. Self-evaluation school.

Abstract no. 179: Tatweer Schools in the Kingdom of Saudi Arabia: Innovation and Autonomy

Rfah Hadi Alyami, Institute of Education, University of reading, Reading, UK.
r.h.a.alyami@student.reading.ac.uk

Globalization has a significant influence on the educational system of Saudi Arabia. Therefore, this study is the first to investigate the impact of educational policy development on practice within Tatweer Schools in this country. This study is important in terms of timing, as the Tatweer Programme is a new policy innovation. It is hoped that the research will provide policy-makers with insights into actual practice and the real-life context within such schools. This preliminary study uses qualitative data obtained in semi-structured interviews; focus groups and documentary analysis. The majority of the participants have a positive attitude about the Tatweer Programmes. It is a major shift of Saudi educational policy; moving from centralization to decentralization, from focusing on the individual to team learning; from being isolated school to be open schools and having a partnership with society. Despite these significant developments, however, the level of students' achievement has not been changed.

Keywords: Decentralization. School reform. Autonomy. Self-evaluation school.

Abreact No. 233: Parental Perceptions of Quality in Public and Private School in Riyadh City at Saudi Arabia

Faisal ALsiadi
University of Hull, UK.
alsuiadi@gmail.com

This paper seeks to examine the factors which influence parents' preferences for public schools or private schools. To this end, the researcher will identify weak points and strong points in both types of school from the perspective of parents in Riyadh, the capital City of Saudi Arabia. As far as the researcher has been able to establish, there has been no other study of this kind conducted in Saudi Arabia. It is therefore hoped that the finding of the research will provide a useful addition to the literature on private and public education and will also help the Saudi government in its future policy decisions.

Abstract No. 338: Inclusive Education in Saudi Arabia: Cross- Cultural Perspective on the Effect of Cultural and Society Towards Inclusive Education in Schools

Faten Abdulhadi Alzaidi & Mike Neary
University of Lincoln, UK.
mrs.faaten@hotmail.com

The purpose of this exploratory research is to facilitate the development of inclusive education in the context of Saudi Arabia. In addition, the research seeks to identify what factors make inclusive education possible or impossible in this particular context guided by the question, what are the current drivers and what are the barriers? Is it possible to define and practice inclusion in Saudi Arabian society in a way that reflects progressive and radical elements within Saudi Arabian society itself? Moreover, the aspects of Saudi Arabian culture, religion and politics might be used to develop and enhance the notion and practice of inclusion in Saudi Arabia. Also, is inclusion a predominately 'western' liberal-humanist idea? Hence, a qualitative approach will be adopted to gather data. Finally, the study will provide twofold of contributions on theoretical and methodological levels.
Keywords: Inclusive education, Saudi Arabia, Culture, Society, Policies.

Abstract No. 343: Cultural and Language Sensitive Opinion Mining and Sentiment Analysis of Social Media Content

Eshrag Refaee, Verena Rieser & Rob Pooley
Heriot-Watt University, Edinburgh, UK
eshragrefaee@gmail.com

The domain of sentiment analysis (SA) and opinion mining (OM) tries to analyse and understand people's evaluations, opinions, attitudes, and emotions from written text. So far, most research focuses on English texts only. This research is one of the first to explore SA for Arabic Dialects along with English. In particular, we explore the automatic classification of sentiments for micro-blogs wherein expressing subjectivity is an essential element. We employ Machine Learning (ML) techniques and explore the effectiveness of different feature-sets on a novel Arabic twitter corpus, we previously collected. As such, we will not only investigate texts written in Arabic, but also English texts written by Arabic speakers. Our central hypothesis is that cultural aspects might have an impact on how non-native speakers voice their opinion using the English language.

Keywords: Arabic, natural language processing, sentiment analysis, opinion mining, social media.

Abstract No. 461: Are Native Speakers Inherently More Qualified Than Others?

Mr. Oudah Alenazi
Newcastle University, UK.
onazey@yahoo.com

Recently, the employability of Non-Native English Speaker Teachers (NNESTs) and the hiring practices of EFL programme administrators have been gaining attention in applied linguistics. In the UK and the US, the literature showed that Native English Speaker Teachers (NESTs) have a privileged status as they are perceived as the ideal teachers. Also NNESTs are often perceived as having a lower status in the profession and face employability discrimination. The research to date has left behind the context of non-English speaking world. Therefore, this paper endeavours to fill such apparent gap by asking two questions: 1- What are the important hiring criteria used in the recruitment of EFL teachers in the Saudi higher education institutions? 2- Does being a NEST affect the applicant's hiring potential?The results revealed that the academic qualification and teaching experience were perceived to be the most important criteria only when the participants were asked directly.

Keywords: Native speakers, Non-native speakers, employability, hiring practices.

Abstract No. 490: Towards Sustainable Blended Learning Environment Within a Changing Landscape: Design-Based Research Through the Lens of Cultural-Historical Activity Theory (CHAT)

Sahar Alghanmni
University of Manchester, UK
Algurbah@hotmail.com

In the last decades, technology has played an increasingly active role in everyone's lives; as a result, there is increased recognition of the importance of these changes for higher education institutions (HEIs). Historically, blended learning (BL) is a logical result of the revolutionary development of technology and learning theories. Bonk and Graham (2012) states that the most accurate definition of BL that reflects its historical advent which is "the combination of instruction from two historically separate models of teaching and learning: traditional F2F systems and distributed learning systems" (p. 3). BL is viewed as the future of higher education for 21st century learners; the rationalism of blended learning emerges from the integration of best face-to-face practice and the best of online-based learning (Young, 2002). It essentially means a combination of both face-to-face and e-learning components; however, its practical application is more complex than this definition suggests. Importantly, therefore, to realise its advantages, a rethinking of pedagogical strategies, redesigning of courses and creative selection of web-based learning is needed. In the context of Saudi Arabia, the blended learning method is highly recommended. The Ministry of Higher Education encourages the implementation of blended learning in all academic programs (Alebaikan & Troudi, 2010). However, this government-oriented aim is still in its early stages, as only a minority of universities offer e-learning courses that are specially designed for a certain population of students, while the remainder of teaching is traditionally-based (Alebaikan, 2010; Moukali, 2012). Thus, the focus of this study will be oriented to Saudi academic blended practice through the implementation of design-based research and the lens of activity theory.

Keyworlds: blended learning, Saudi higher education, Academic blended practice, design-based research (DBR), Cultural-historical Activity Theory (AT).

Abstract No. 497: Individual Differences among Saudi University Students of English As A Foreign Language

Noaf A. Aljasir, King Abdulaziz University, Jeddah, Saudi Arabia.
noaf@ymail.com

Awareness of individual differences helps create optimumlearning and productivity in language learning settings at different proficiency levels. Language teachers should, therefore, recognise their students' individual differences and apply different teaching techniques according to their needs. The purpose of this research was to identify the students' various learning styles and provide useful insights into the significant affective factors influencing them. The study used a descriptive correlational design to explore whether a relationship existed between learning styles, affective factors, and English language proficiency. Data were collected from foundation year students at a public university in Saudi Arabia. Two data collection methods were used: survey questionnaires and semi-structured interviews of selected participants. Data were then coded and entered into SPSS for analysis. Interesting results were obtained with regards to the student's preferred learning styles and the affective factors which might have an influence on their English learning.
Keywords: Saudi, EFL, Foundation year, Needs Analysis.

Abstract No. 502: An investigation of developing teachers' understanding of using dialogic approach in Saudi primary mathematics classrooms

Mansour Muzil Alanazi
The University of Manchester, Manchester, UK
mansour.alanazi@postgrad.manchester.ac.uk

Classroom talk and dialogue has become fundamental to students' learning mathematics and much research has been focused on the ways teachers interact with their students and the quality of dialogue between them. Drawing on recent developments in dialogic approaches to learning and teaching of mathematics, this study investigates how Saudi mathematics teachers develop their understanding of classroom dialogue through a professional development process in mathematics teaching. The study involves multiple case studies collecting qualitative data on i) teachers' espoused beliefs about their teaching practice and dialogic teaching and ii) teachers' enacted practices using dialogic teaching principles. The participants were three male primary mathematics teachers in third, fifth and six-grade classrooms. The paper shows that early analysis and discussion about Ahmad as one case study.

Keywords: Classroom talk- Dialogic teaching- Professional development- teachers' beliefs.

Abstract No. 552: Shifting from traditional approaches of teaching to a blended learning approach; challenges and possible solutions.

Saeed Alshahrani & Rupert Ward
University of Huddersfield, West Yorkshire
saeed.a.alshahrani@gmail.com

The transfer from traditional methods of education to Blended Learning Approach has been essential and it has been adapted widely in universities around the world. The aim of this paper is to recommend a technique that can help to shift from traditional approaches to learning to the BLA approach. The recommendations are based on the analysis of previous studies that highlighted the challenges of BLA and recommended solutions. The key point in this research is that the recommendations do not require the whole education system to be changed. It focuses on aspects that need to be altered, and how. A documentary method of research was used to analyse data from the results of existing research. The recommendations provided are based on analysing major and common obstacles that face BLA. The studies that were analysed were selected from Saudi Arabia only as an Asian country.

Keywords: Traditional learning, Blended learning (BLA), Technological Pedagogical Content Knowledge model of teaching (TPCK).

Abstract No. 574: The Role of Listening to Textbook Audiotapes in Saudi Female Secondary Students' Language Proficiency and Attitude

Areej Mohammad Alawad,
Al-Imam Muhammed Ibn Saud Islamic University. Riyadh, Saudi Arabia
a_m_alawad@yahoo.com

The study explores the role of listening to textbook audiotapes on Saudi female secondary student' language proficiency and attitude. The study used both quantitative and qualitative techniques in order to 1) identify the role of listening to audiotapes of a school text book on students' comprehension, vocabulary recollection and the formation of properly structured sentences; 2) investigate whether metacognition awareness is risen through this listening exposure; 3) explore learners' attitude shift towards learning the English language through the implementation of this study. A total of 20 female third year secondary Saudi students participated in this study along with their two teachers. Ten quizzes were used to measure their level of a) vocabulary retention and b) sentence structure. Interviews were carried out with the students to investigate comprehension level and student metacognition awareness. Both participants and the two teachers were given questionnaires to identify student attitude shift as well as interviews that were carried out to help explore other areas of attitude change. The findings of the study were as follows: 1) participants showed significant improvement in their level of comprehension, vocabulary retention and sentence structure; 2) they gained metacognition awareness; 3) their attitude towards listening, and in general the English language, was very positive. These results suggest the need for incorporating listening audiotapes into school textbooks and syllabus.
Keywords: listening - textbook audiotapes – language proficiency – language attitude – metacognition – listening schema – language anxiety – motivation

Abstract No. 590: Chaos amid certainty of professionalization: A critical analysis of the professional development of English language practitioners at a university in Saudi Arabia

Hussein Assalahi,
University of Exeter, Exeter, UK,
Hmaa202@exeter.ac.uk

This article reports on partial findings of an on-going research study which aimed to explore English language practitioners' experiences of professional development (PD) activities and the policy discourses within an on-going reform at an English language Institute (ELI) at a university in Saudi Arabia. Professional development has received increasing attention nowadays than ever before. A considerable part of the extant literature has focused on the different models of PD which underpin teachers' initiatives to promote their professional knowledge, skills and attitudes to implement the proposed reforms. However, little is known about the English language practitioners' perceptions, both locally and internationally, of the conditions that enhance or hinder how they professionally develop individually and within their professional communities. The study, therefore, offers new insights into understanding PD as a complex process and situates it within the inherent discourses of professionalism, workplace complexities and conditions that affect teachers' professional development. Data collection utilised two methods; semi-structured interviews with 12 English language practitioners as well as a policy document analysis. Findings showed that, teachers expressed negative experiences about PD as a top-down initiative informed by a managerial view of professionalism which sanctions conformity and performativity against teachers' democratic views of professionalism. Unpacking this negativity reveals a complex dynamic of conflictive discourses. These conditions seem to hinder English language practitioners' ambitions to continuously learn to teach in order to successfully implement the intended reforms. The study contributes significantly to PD research by providing insights into a situational understanding of PD which interrogates the socio-cultural, socio-political contexts in which it occurs and the discourses of professionalism which underpin reform initiatives.
Keywords: English language practitioner; Professional development; Professionalism.

Abstract No. 591: An Imbalanced Form-Meaning Link: The Case of Saudi EFL Learners

Hala Mohammed Alghamdi, School of Education, University of Leeds, Leeds, UK.
hala.m.alghamdi@gmail.com

Developing a link between a word's form and its meaning has been considered the minimum requirement for knowing a word. The two are highly interconnected that rich knowledge of one, for example meaning, may be useless if no equal knowledge of the other, form, is acquired. This study compares the amount of knowledge learners have of form and meaning of 25 English words. Their knowledge of word meanings, depending on their performance in two meaning tests, was found to be almost double their knowledge of word forms, as their combined results of two form tests indicate. The researcher aims to revive the explicit learning of word forms through the teaching of fixed spelling patterns in order to create a balanced form-meaning link.

Keywords: Meaning formation, Saudi, EFL.

Abstract No. 594: An exploration of the relationship between anxiety and risk-taking among Saudi learners of English

Ibrahim Al Fozan, Birkbeck
University of London, London, UK
alfozan82@hotmail.com

This study sought to examine the constructs of anxiety and risk-taking among learners of English as a foreign language (EFL), and to ultimately explore whether a relationship existed between these two important variables. A total of 96 male participants who were English majors at a public college in Saudi Arabia completed three questionnaires, and semi-structured interviews were conducted with five students who either scored too high or too low on one of the questionnaires. The results showed that the students were least anxious when speaking with classmatesو and most anxious when speaking with the professor. In addition, low risk-takers viewed a high grade as the course objective, while those with high risk-taking scores viewed English proficiency as their main objective of learning English. Finally and most importantly, a significant negative correlation was found between anxiety and risk-taking scores. As such, some suggestions for the teaching and learning of EFL are offered along with some recommendations for further research on language anxiety and risk-taking.
Keyword: anxiety, risk-taking, EFL, Saudi Arabia.

Abstract No. 633: Identifying the ICT training Needs of In-Service Female Novice Primary Teachers in Saudi Arabia

Ensaf Al Mulhim
School of Education, University of Plymouth, UK.
e_almulhim@hotmail.com

This paper reflects one part of a bigger PhD thesis that is being written up. The overall focus of this study is ICT in primary schools in Saudi Arabia, in particular the training of novice female primary school teachers to enable them to integrate ICT into their classrooms. A questionnaire and semi-structured interviews were used in this phase to collect data. The findings revealed that the participants do suffer from a great gap in their knowledge and in the technical and pedagogical skills of using technology in teaching including the basics. It was also found that their use of technology currently is very low. The reasons behind that could be lack of access to technology, lack of training, and lack of time. The paper also presents some features of the participants' desired training programme.

Keywords: Teacher training, primary school, ICT, technology, in-service training.

Abstract No. 647: Production and comprehension of the Aspectual/ temporal interpretations in Saudi L2 learners

Ruwayshid Alruwaili, Language and linguistics science, York University, York, UK
rnla500@york.ac.uk

This study examines the acquisition of aspectual and temporal distinctions in English by Saudi-Arabic speakers in different levels of proficiency and types of setting. In particular, the study aims to investigate the role of L1 into the domain of aspectual acquisition. The two languages are assumed to share the same underlying representation but they differ in the morphological paradigms. Two different tasks were administered: an Acceptability Judgment task and a Gap-Filling task. The preliminary findings indicate that the aspectual distinction was acquired from early stages of development whereas the temporal distinction caused a persistent difficulty for Saudi L2 learners.
Keywords: Saudi Arabic; Syntax-semantic Interface; L2 development.

Abstract No. 664: The process of designing ESP business English course for future business students of King Saud University

Manal Alfiz & David Boydon, English Language Learning Department De Montfort University, Leicester
p12110443@myemail.dmu.ac.uk

The aim of this project is to design English for Specific Purposes (ESP) business English course and syllabus task for Preparatory Year students of King Saud University (KSU) who intend to study in the Faculty of Business (FOB). The key stages in designing a ESP course and syllabus task are need analysis, learning theories, teaching methodology, materials choices or adaption, institutional recourse, assessment of student and evaluation of design process. Having determined Saudi learner's needs through survey questionnaires and determined English Language Skills Department (ELSD) and FOB needs through documents analysis. The survey questionnaires conducted by Student Affair Unit within FOB and distributed between students. Documents were taken from ELSD and FOB.

FOB documents revealed that majority of students have lack of business English knowledge and students gain lower mark particular in the first semester in their first academic year. Therefore, it was essential to design business English course for Saudi student as well as develop their English receptive and productive skills in the field of business.

Keywords: ESP, Business English course and syllabus task, Teaching English in KSU.

Abstract No. 679: EL Teacher's Perceptions About their Role As NNESTs in ELT Profession.

Abdullah Matar Alshahrani,
University of Exeter, Exeter, UK
amatar60@yahoo.co.uk

This study explores a group of Saudi English Language teachers' perceptions about their role as non-native English speakers teachers in the ELT profession, and the criteria employers in Saudi Arabia use to consider when recruiting English language teachers. The study is guided by critical research paradigm since its aim to raise awareness about discriminatory practices and policies from a critical standpoint. The sample consisted of 10 male Saudi teachers from two different institution types in Saudi Arabia, who have experience in teaching ranging from 1 to more than 10 years. The data collection method adopted was a

semi-structured interview. The results show that most of the participants had awareness of the role of ideal language model. The interpretation of the data also revealed that they had an attitude of dissatisfaction and concerns of how employers disregard experience in teaching and educational background when recruiting. Moreover, issues of accent and nationality have often been the cause of employment discrimination practices in EFL programmes in Saudi Arabia. The recommendations of the study are to give NNESTs equal opportunities in employment with their NEST colleagues. Collaboration between NESTs and NNESTs should not be considered as a one-way relationship but as a mutual relationship with interchanging harvests.

Keywords: Native and non-native English teachers; employment discrimination.

Abstract No. 743: Investigating the Effect of a Multi method Approach on Students' Perception and performance

Amel Al Nooh,
University of Hull, Hull, UK

large number of research studies(Erazmus (1960),Zamel (1983) and Raimes (1987)) propose that most foreign and second language instructions tend to accentuate on the production of writing that primarily reveals accurate grammar usage and neglected writers' voice, quality of ideas and concentrate on accuracy. In such classes, guided composition is the dominant. Similarly, cognitive and metacognitive writing strategies were abandoned in ESL writing classes. Most researchers (Arndt 1987, Raimes 1985, Hsiao and Oxford (2002)have stressed on evolving writing strategies for its effect on the writer's performance. Thus, this study would attempt to fill this gap area and focus on analyzing whether a multi method approach with the training of metacognitive writing strategies improve ESL writing skills for secondary learners in Saudi Arabia. It also tends to investigate the correlation between students' perception of the writing strategies and their performance. Further, studies have not been embarked to analyze whether combining teaching approaches of writing (multimethod approach) and adopting writing strategies may help in improving the writing skills of the ESL learners. Thus, this study would attempt to fill this gap area and focus on analyzing whether a multi method approach with the training of metacognitive writing strategies improve ESL writing skills for secondary learners in Saudi Arabia. It also tends to investigate the correlation between students' perception of the writing strategies and their performance. Consequently, the teaching approaches of writing will shift the teacher's concerns from accuracy to writer, reader, content and context .The students would be monitored for eight months and evaluated on the basis of various parameters. The results from these groups would be compared to find out whether implementing a multi method approach with the use of metacognitive writing strategies improve the writing skills of ESL learners or not.

Keywords: Multi method approach ,process approach, writing strategies , genre approach, ESL , writing skills, writing performance.

Abstract No. 816: Intercultural Contact and L2 Motivation for Undergraduate Saudi Students in the UK

Ali Falah Alqahtani
University of Leeds, School of Education, Leeds, UK
almadhah@gmail.com

This paper reports a study that used Dörnyei's (2005) L2 Motivational Self System (L2MSS) to investigate possible relationships between prior level of Intercultural contact (ICC) and reported motivation to learn English among newly arrived undergraduate Saudi students in the UK. An online survey was designed and distributed among 257 new Saudi arrivals across the UK. Correlation analysis of the data revealed a significant relationship between the prior experiences of the ICC and the new Saudi arrivals' motivation to learn English. In addition, one construct of the L2MSS in particular (the Ideal L2 Self) played the most significant mediating role between prior ICC experiences and their reported motivation to learn English.

Keywords: Motivation; L2 Motivational Self System; Ideal L2 Self; Ought to L2 Self; L2 Learning Experience; Intercultural Contact.

Abstract No. 917: Authorization as a Discursive Strategy

Hani Eid Alamri, Dr. Dawn Knight
Newcastle University
hea930@hotmail.com

The general public tends to believe mostly everything that media present to them, more specifically their national media. Media nowadays are commonly used as a process of psychological preparation to passes indirect messages to the public. This process is mainly based on the use of Language. This paper is aimed to look at the hidden strategies that media editors usually use to authorize or legitimize their own ideologies. It also investigate the affect of these strategies on the public opinions. Four main newspapers in the US (Washington Post, New York Times) and the Uk (The Guardian, The Daily Telegraph) will be used to collect some editorials. All will be picked in the same period covering the same news. CDA is mainly the method to investigate the strategies of authorization in the text. Public opinions will be reviewed before and after reading the article. The author will conduct interviews and CDA to the readers comments on the articles afterwards.

Abstract No. 917: Evaluation of an English Language Programme with respect to the Academic and Professional Language Needs of Saudi undergraduate students: A Multi-dimensional perspective

AHMED M. AL-GHAMDI
Newcastle University, Newcastle, UK
ahmed.alghamdi@ncl.ac.uk

The focus of this research is on the development and implementation of the Cyclical Evaluation Model which effectively incorporates needs analysis procedures for use in exploring the immediate and future English language needs of business major students at a Saudi Arabian university. The evaluation process examines various aspects of the programme (instructional materials, teaching methods, and the students' assessment procedures) to determine the effectiveness of the current English language programme as perceived by the programme's stakeholders (English language teachers, business lecturers,

students and private sector representatives) with the aim of improving the programme. Approaches to language programme evaluation were adopted to develop the initial theoretical perspectives which include aspects of Formative vs. Summative, Process vs. Product and Qualitative vs. Quantitative evaluation frameworks. A mixed-methods approach was employed. Participants in the research include business students (n = 254) language teachers (n = 20) business lecturers (n = 3) and private sector representatives (n = 5). The data collection instruments used were: questionnaires, semi-structured interviews, and classroom observations. The needs analysis findings revealed that all four of the English language skills are important, in both the academic and future professional workplaces of the students. However, the descriptive analysis of the data revealed that the English language programme is not meeting the stakeholders' language needs. Future development evaluation needs to be part of the language programme process and course design should be based on the needs analysis procedure with various stakeholders participating in the process.

Keywords: Needs analysis, Stakeholders, Job market, Target situation needs, Present situation needs.

Abstract No. 933: Using Arabic as a Strategy to Teach EFL at a University in Saudi Arabia

Shams Mahdi Bukhari, College of Humanities and Social Science, University of Edinburgh, Edinburgh, UK.
anashams@hotmail.com

This paper explores using Arabic in English as foreign language classrooms at King Abdulaziz University in KSA. It focuses on three groups of teachers; Arabic native, English native and non-English/non-Arabic native speaker teachers to examine and compare the extent of Arabic usage by all groups of teachers. This study contributes to existing literature on the subject, as limited research projects have been carried out to investigate the Arabic use in EFL classrooms within the Saudi context. This suggests that there is a space to conduct in-depth research to provide a fuller impression of the issue. Data has been collected by using classroom observations, teacher interviews and student interviews. It is anticipated that results of this study will help to design training programs that will take into account learners' needs. It is also hoped that they will change the method of teaching in the Saudi context from teacher fronted to a learner fronted.

Keywords: L1 (Arabic), first language, L2 (English), level of proficiency, native speaker teacher, English as a foreign language

Engineering & Architecture Papers

(Short Abstract only)

Abstract No. 79: Project Management Sub-contract: Benefits, Risks and Strategies to avoid risks

Abdullah Abdulaziz Alkhoraif
Bournemouth University,
kriyf@hotmail.com

One of the most organised activities incorporated by businesses around the world, regardless of sector, scale of operations, diversity of activities involved and importance associated with delivering the desired results within time is the domain of Project Management. According to the UK Association of Project Management, "project management involves planning, monitoring and controlling of several aspects of a project including the motivation of all entities involved in order to obtain the project objectives to specific quality, cost, performance and on time" (Atkinson, 1999). Since project management directly affects the strategy adopted by a firm and further translates into a firm's mission, it is vital to consider the planning, scheduling, budget and timelines needed to effectively orchestrate the overall contribution of involved entities (Larson, 2008).

Abstract No. 97: Using Delphi Technique to Evaluate a New Model for Sustainable Urban Planning Development for the City of Riyadh

Ali Muflah AlQahtany
PhD Candidate, Cardiff School of Engineering, Cardiff University, Queen's Buildings, the Parade, Cardiff CF24 3AA, Wales UK,
Alqahtany-ali@hotmail.com

Cities in developing countries are experiencing rapid and in many cases unsustainable growth. This paper analyses the importance of sustainable urban planning in the context of the capital city of Riyadh. It provides a comprehensive review of the historical growth of the city and critically discusses its urban planning development phases, informed by strategies and schemes adopted during this development process. This critical review is based on a proposed model of sustainable urban planning development, which focuses on a number of core issues, including environmental, social, economic and urban planning. The proposed model is then evaluated based on the opinion of 35 experts, familiar with the local context of the city, through the use of the Delphi Technique. The resulting new model, developed using a consensus based approach, provides a means to assess and control the planning and growth of cities in a sustainable way.
Keywords: Urban planning; sustainable urban planning development; oil boom phase; post-oil boom phase; Delphi Technique

Abstract No. 107: An Exploratory Study of the Manufacturing Changeover Practice in Saudi Arabian firms

Majed Alnaeem, Dr. Robin Clark
Aston University
majed6@gmail.com, alnaemah@aston.ac.uk, r.p.clark@aston.ac.uk

The importance of the changeover process in the manufacturing industry is becoming widely understood. Changeover is the key consideration for achieving economic and flexible production. The initiative of changeover improvement exists in industry as better changeover practices contribute to improve business performance. A high quality and reliable changeover process can be achieved by continuous or radical improvement activities that significantly influence of changeover practice. This paper presents a literature review that explored the

concept of manufacturing changeover and its relation to the Quality Management literature. The proposed conceptual model has been identified from the literature review and is focused on the quality of changeover during manufacturing setup in a dynamic environment. Moreover, exploratory research conducted in sample Saudi Arabian cable firms to understand the features of the changeover process within the manufacturing industry. Qualitative research was employed in the exploratory study with interviews to facilitate data collection. The results indicate that similar industry has different set-up process of changeover and each firm dealt with changeover based on the competition and their position in the market.
Keywords: Changeover, Set-up period, Set-up process, Saudi Arabia.

Abstract No.120: From Point Cloud to JHBIM: Jeddah Historical Building Information Modelling Old Jeddah - Saudi Arabia

A.Baik, J. boehm, S. Robson,
University College London
ahmad.baik.12@ucl.ac.uk, j.boehm@ucl.ac.uk,
s.robson@ucl.ac.uk

The historic city of Jeddah faces serious issues in the documentation, conservation, and recording of its valuable building stock. Terrestrial Laser Scanning and Architectural Photogrammetry have already been used in many Heritage sites in the world. The integration of heritage recording and Building Information Modelling (BIM) has been introduced as HBIM and is now a method to document and manage these buildings. In the last 10 years ago many traditional engineering methods were used to record the buildings in Old Jeddah. On the other hand, these methods can sometimes offer unreliable information, take a long time, and often lack completeness. This paper will look at another method for heritage recording by using the Jeddah Historical Building Information Modelling (JHBIM).

Keywords: Jeddah, JHBIM, Terrestrial laser Scanning, Heritage Recording.

Abstract No. 137: The influence of organisational culture on disputes in public construction organisations

Khaled Alkhamali, Ibrahim Motawa, Stephen Ogunlana,
Heriot-Watt University
kh_ssf@yahoo.com
ksa13@hw.ac.uk, I.A.Motawa@hw.ac.uk, S.O.Ogunlana@hw.ac.uk

Although culture in construction industry has been widely discussed in literature worldwide, few studies have examined the influence of organisational culture on disputes. Construction organisations are known to be project-based organisations where projects involve multi-parties from different cultures and backgrounds that needed to worg together. Hence, improving effective organisational culture has been considered as a magnificent factor in success of construction organisations. This paper presents a study of the influence of cultural factors on disputes in public construction. An exhaustive review of literature is undertaken to identify the effects of organisational culture in avoiding or minimizing disputes in construction organisations. The aim of the paper is to draw attention towards the impact of organisational culture on disputes through having adequate understanding to the issue and the related aspects.
Keywords: Organisational culture, Disputes, construction organisations.

Abstract No. 138: A Review paper on leadership styles in construction organizations (The influence of leadership style on disputes in public construction)

Khaled Alkhamali, Ibrahim Motawa, Stephen Ogunlana,
School of the Built Environment, Heriot-Watt University
ksa13@hw.ac.uk, i.a.motawa@hw.ac.uk, s.o.ogunlana@hw.ac.uk

With the increasing challenges and complexity facing construction industry, the role of leadership is becoming manifested. Effective leaders can't only meet the goals and objectives of the organisations but also minimize conflicts and disputes. This paper investigated the influence of leadership style (Avolio & Bass, 2004) on disputes between owners and contractors. A survey was distributed among the owner organisations in public construction. Among 25 causes of disputes, delay by contractor, lack of team spirit and poor communication were the most frequent causes of disputes. The results showed significant negative correlation between transformational leadership and causes of disputes namely late payment, lack of team spirit, poor communication, poor management and unrealistic tendering. That means if leaders adopted transformational leadership, disputes may be minimized substantially.

Keywords: construction; leadership; leadership style; disputes.

Abstract No. 144: A Comparative Study of Teaching the Islamic Prayer

Mohammed Farsi, Prof Malcolm Munro
Durham University Durham
moahmmed.farsi1980@gmail.com, malcolm.munro@durham.ac.uk

The development of Virtual Environment (VE) platforms has significantly impacted socio-educational domains. With the advent of new technology such as the Wii and Xbox 360 Kinect, this not only relates to the learning environment, but also to the actual Human-Computer Interaction (HCI), whereby users can now experience full body interaction without the use of external controllers. This study seeks to explore how such technology could be incorporated in primary schools, in order to teach and enhance the learning experience of the Islamic prayer. The interactive Islamic Prayer (iIP) software has been designed for Xbox 360 Kinect with this specific goal in mind, and as an alternative to traditional learning methods such as textual or visual learning approaches. This study therefore seeks to explore whether there is a preference towards an interactive style of learning in comparison to learning from a book or watching a video. This research uses a mixed method approach to determine which style is preferred by learners, as well as ascertaining whether teachers would be willing to incorporate it in their lessons. The participants for this study are Saudi primary school children in Jeddah (n=30) and their teachers (n=3), who currently learn the prayer using a prayer book and video. Therefore, in order to assess preferences, an experiment is devised incorporating a within-group design, whereby each group will experience all methods of learning (the controlled groups: video and book, and also the iIP software) before making an informed decision on which they favour. Tests and questionnaires will be administered before and after each session, which will be then be analyzed for comparison purposes. In addition, observations of each session will be implemented to see how the methods engage the learners.

Keywords: Human-Computer Interaction, Virtual Environments, Islamic prayer, Kinesthetical learning, X-Box 360 Kinect, Learning preferences.

Abstract No. 189: Key Architectural Features of a Typical Modern Saudi Home

Farajallah Alrashed, Muhammad Asif
School of Engineering and Built Environment, Glasgow Caledonian University, Cowcaddens Road, Glasgow, G4 0BA, United Kingdom.
farajallah.alrashed@gcu.ac.uk

The housing sector in Saudi Arabia is growing rapidly and the form of a typical Saudi house has been dramatically changed over the last decades. The number of domestic buildings is growing swiftly as estimates suggest that in order to meet the needs of the rising population the country needs to build 2.32 million new homes by 2020. The architectural features of a home have significant bearing on its broader performance. In the wake of associated energy and environmental challenges, it is therefore important to investigate the key architectural features of typical Saudi homes. This paper aims to investigate the architectural form and functional spaces of a typical modern house in Saudi Arabia based upon a questionnaire survey on the Saudi residents' aspirations. The survey, conducted in five major cities, represents all of the main architectural styles and climatic zones in Saudi Arabia through 453 responses it gathered. The main parameters studied in the paper are dwelling occupancy, typology, size, number of storeys, and functional spaces.

Keywords: Housing, Housing Typology, Functional.

Abstract No. 193: Individual Safety Performance and Incident Rate in the Construction Industry

Youisef al-shehri1, francis edum-fotwe, and andrew price
Loughborough of University
yousef-uk@hotmail.com

Given the large economic and social costs of work-related accidents and injuries it is not surprising that organizations strive to reduce them, which creates the need for improving its safety performance. Health and Safety Executive HSE statistics appear to suggest a levelling in safety performance across the construction industry. The levelling in safety performance implies that improving safety beyond the current attainment calls for a radical look at how safety is addressed by construction. Such a radical look would cover the planning, implementation, and management of safety in construction industry. Some researchers have suggested that 90% of accidents can be attributed to human error. Although it is acknowledged that human factors are involved in work related accident/incidents, in recent years, the focus of research attention has been on organizational and environmental factors, rather than individual-level variables. Occupational personality models suggest that the ability to understand, predict, and control incident events minimizes their impact. Understanding safety behaviour of construction workers should provide opportunities for improvements beyond traditional practices in safety management. The emergence of the Big Five personality model has been widely accepted as a valid and reasonably generalizable taxonomy for personality structure and has been used by numerous researchers as a framework to explore the criterion-related validity of personality in relation to job performance. Re-categorization of the personality traits measured by empirical studies into the Big Five of extraversion, agreeableness, conscientiousness, emotional stability (or low neuroticism), and openness to experience (or intellect/imagination), would allow an overview of the relationship between fundamental dimensions of personality and accident/incident/incident involvement .This paper to study the relationship between the

construction worker personality attribute and safety incident rate, which will form the foundation for identifying the improvement opportunities.

Keywords: Construction industry, safety performance, safety behaviour, incident, accident, Construction worker, Personality traits..

Abstract No. 199: E-Government Strategies: Fill the Gap Between Theory and Implementation

Joman Alzahrani
Glasgow Caledonian University
jalzah201@gcu.ac.uk

In recent decades, E-government term has been known globally. Many researchers and scholars have agreed on the benefits of implementing e-government. As a result, many governments have set goals to improve and develop their services through adoption of e-government projects. Nevertheless, other governments are still in the process of adoption or haven't started yet. In general, governments around the world believe that e-government will make a big difference in term of efficiency and effectiveness by achieving its advantages. The advantages of e-government have encouraged and have motivated countries to set up strategic plans for implementing e-government projects, for example Saudi Arabia. However, the misunderstanding of e-government concept and process has led to failure of adoption. The purpose of this paper is to come up with a common definition and link the e-government concept with implementation through strategies. The study is based on the meta-synthesis approach and discussion of the previous literature. The paper confirmed that strategies have an important role in filling the gap between e-government concept and practice. Strategies can clarify the e-government concept and then put a clear vision and statement for implementation. The paper sections are briefly presented below.

Keywords: E-government, Adoption, Strategies, ICT.

Abstract No. 240: The Potential of Adopting Sustainable Urban Drainage Systems (SUDS) for Urban Areas in Saudi Arabia

Ali Alahmari, Sue Tapsell, Christophe Viavattene, Simon McCarthy
Flood Hazard Research Centre, Middlesex University, UK
ama.1122@hotmail.com

Flood risk management and water management have grown in importance over recent decades, driven by climatic changes coinciding with urbanization. Although Saudi Arabia is located within an environment characterised by dry climatic conditions, some Saudi cities have been exposed to short durations of heavy rainfall resulting in sudden surface water flooding. This has had a significant impact, including the destruction of infrastructure, resulting in human, material and economic losses. Key issues that might be contributing to the emergence of this issue in Saudi could be the rapid development of cities and urbanisation; the lack of a storm-water drainage network system covering urban areas; and certain rules and regulations which exist regarding the mechanism of dealing with rainwater and induction to control the path of the water. It is uncertain if the full range of possible flood management measures is being considered in Saudi and the reasons behind this both at a professional and public level. This research will undertake qualitative and quantitative social research in two Saudi cities affected by continued flood events. In the context of wider flood risk management measures the research will investigate the potential of adopting various

types of Sustainable Urban Drainage Systems (SUDS) for urban areas in Saudi Arabia. Through the views of stakeholders the SUDS techniques will be explored to reveal their physical appropriateness and the governance and social contexts that might enable their consideration in Saudi. Indirectly the study also explores issues surrounding undertaking social research in Saudi Arabia.

Keywords: Sustainable Urban Drainage Systems (SUDS); Urban Drainage; Flood risk management; water management; Sustainable development; surface runoff.

Abstract No. 257: Chloride-Sulphate Ion Exchange Performance in Saline Condition Using Ion Exchange Resin (IXR)

Hasan Al Abdulgaderand Nidal Hilal
College of Engineering, Swansea University, UK
hasan.a@outlook.com

Over the last decades, the tightening of water quality regulations and the increased attention given to more affordable desalination technologies has been favouring the emergence of alternative treatment technologies in order to upgrade or improve conventional water treatment processes. The combined use of ion exchange resins (IXR) and pressure driven membrane processes in water treatment have received great deal of attention from researchers and investors. One of these processes with high potential is the one that utilises IXR and NF for desalination purposes. This paper focuses on the ion exchange part of the hybrid IXR-NF process. It studies, in batch mode, the Cl- removal efficiency of various commercial IXRs. All batch studies were performed using synthesised NaCl solutions of various concentrations. The paper also evaluates the chloride-sulphate exchange equilibrium and determines the effect of resin dosage on the exchange level. The results showed, for all the resins, the chloride-sulphate exchange equilibrium proceeds very fast in a concentrated NaCl solution and less than ten minutes are needed to reach equilibrium. Furthermore, the addition of more resin into the solution corresponds to a decrease in the concentration of chloride ions in NaCl solutions, and this is attributed to the limited capacity of IXRs. Further investigations are needed to include continuous mode IX experiments, treatment of natural saline water, effective regeneration and NF membrane treatment of IXR product.

Keywords: Ion exchange capacity, ion exchange resin, desalination, water treatment, nanofiltration.

Abstract No. 271: The Development of A Probabilistic Safety Assessment for A Novel Generation IV Sodium-Cooled Fast

Ibrahim A. Alrammah
University of Manchester
iarammah@gmail.com

The integration of deterministic and probabilistic safety tools in the early design stage is strongly recommended for Generation IV NPPs. Within this frame, a probabilistic safety assessment (PSA) methodology will be developed to support the design of Generation IV sodium-cooled fast reactor (SFR). As part of this study, the characteristic features of the SFR design will be described and the design requirements will be examined. Initiating events will be determined and then event trees to be developed to quantify the probability of event sequences in the PSA. According to PSA results and sensitivity analysis of several SFR design alternatives, the best design expressed in terms of core damage frequency targets will

be optimised. The important problems which must be solved in a PSA for the designs of new NPPs (nuclear power plants) will be discussed.

Abstract No. 277: Probability of Connection for Various SINR at Downlink, Indoors Femtocell with Interference

Mohammed Alshami, Tughrul Arslan and John Thompson
The University of Edinburgh
m.h.alshami@ed.ac, t.arslan@ed.ac
john.thompson@ed.ac

Femtocell (FMC) is a low power cellular home base station, low in cost and operating in licensed spectrum. Nowadays, because of the requirement for high data rate and large area coverage indoors, FMC provides the solution [1]. It is deployed mainly indoors or even outdoors at the cell edge to increase the area of coverage, capacity and to enhance the received signal in the user's premises. This paper presents the interference and SINR at the downlink of FMCs and UEs based on OFDMA. Moreover, comparisons of probability of connection at various SINR threshold values are presented. The downlink interference occurs from the neighboring FMCs to the target user equipment (UE) when the signal transmits from the serving FMC to the target UE and the signals which are transmitted from the neighboring FMCs would have the same subchannels during the downlink transmission. Therefore, probability of connection in a various SINR threshold values is a good study to find the appropriate number of FMCs that could serve a specific indoor area and the proper number of UEs in the specified area.

Keywords: Index Terms— femtocell, Home Base Station, Interference, user equipment, Indoor, probability of connection, SINR, Downlink.

Abstract No. 304: A Model for Eexploring Reusable Packaging Attributes Throughout Packaging Supply Chain

Ahmed Babader, Dr Jun Ren , Prof. Jin Wang and Dr K Jones
Liverpool John Moores University
a.b.babader@2011.ljmu.ac.uk, J.Ren@Ljmu.ac.uk
J.Wang@ljmu.ac.uk, K.O.Jones@ljmu.ac.uk

Packaging systems are influenced many elements throughout life cycle. Environmental impact of packaging has become issue in many counties. In the past, there were lots of efforts that have been made to reduce number of packaging go into landfills. Refillable packaging was investigated as a possible solution in term of reuse packaging however, reusable packaging for multi-purposes is another reuse technique with primary and secondary packaging which need to be investigated. The paper aims to identify a range of reusable packaging attributes by an integrated approach on primary packaging and visual questionnaire approach on secondary packaging, which can be differentiated in level of logistics packaging, safety of packaging, ergonomic of design packaging, marketing and communication level and packaging sustainability. The empirical study is supported by the data from the most recent national questionnaire performed in Jeddah- Saudi Arabia on reusable packaging for multi-purposes. There are 45 attributes have identified from intensive literature review and case study. The reusable packaging attributes provide a range of economic benefits from better understanding of specific business drivers and barriers related to implement reusable packaging system in supply chain scheme. Finally, the paper suggests

the important of further research on reusable packaging attributes throughout supply chain system as it is critical to achieve an efficient and responsive supply chain system.

Abstract No. 384: Knowledge Taxonomy for Building Maintenance

Abdulkareem Almarshad
Ibrahim Motawa
Heriot-Watt University
aka34@hw.ac.uk

The extensive, complex, and widely spread nature of information and knowledge in the AEC/FM industry makes searching and finding the right information and knowledge time-consuming. Therefore, numerous approaches have been proposed to classify, organise and standardise information and knowledge to facilitate their accessibility. However, such schemes were found to be either general indexing outlines for information to serve the whole industry or precise classifications of knowledge specifically constructed to aid particular studies. This paper proposes a knowledge taxonomy for maintenance of public buildings based on a review of several contracts employed in the public building maintenance sector in Kuwait. Such approach produces a taxonomy that is easy to use and based on what the users are familiar with. This taxonomy is intended to form the basis for knowledge utilisation in a knowledge management system to be used in public building maintenance in Kuwait.

Keywords: Knowledge taxonomy, Building maintenance, Kuwait.

Abstract No. 506: Structural Reinforced Concrete Beams in Shear

Ayed E., Alluqmani; and Mohamed B., SAAFI
Alluqmani-ayed-eid-h@strath.ac.uk, m.bensalem.saafi@strath.ac.uk

The shear failure of reinforced concrete (RC) beams is a distinctive case of failure. Traditionally, it is assumed that the behaviour and failure modes of beams subjected to shear loading are dependent on the method by which shear is transmitted from one plane to another. The majority of the Codes of Practice assume that shear is transferred through a beam by means of shear stress; aggregate interlock; dowel action; arch action, and shear reinforcement (stirrups). The different mechanisms of shear transfer, which have been assumed, are briefly discussed. Many of the factors that influence the determination of the required minimum amount of shear reinforcement are not yet known. This paper outlines a literature review on the shear behaviour of the structural RC beams.

Keywords: RC Beams; Shear; Shear Transfer; Stirrups.

Abstract No. 507: The Effect of Bearing Plate Widths on Wide Concrete Member Capacities

Ayed E., Alluqmani; and Mohamed B., SAAFI
Alluqmani-ayed-eid-h@strath.ac.uk, m.bensalem.saafi@strath.ac.uk

Wide reinforced concrete (RC) beams are commonly used in the Middle East Countries (e.g. Saudi Arabia) as primary structural members. They are loaded and supported by wide and/or narrow columns. The load and support widths have an influence on the flexural and shear strengths of wide RC beams. Many of the factors that influence the flexural and shear behaviours of wide RC beams are not yet known. The current design Codes neglect the load and support widths to design the flexural and shear regions of these wide RC beams. This

paper focuses on the effect of the load and support widths on the behaviour of wide RC beams. Six cases regarding to the influencing of the load and support width conditions on the behaviour of wide RC beams are briefly outlined and summarised. The load and support widths should be taken in the considerations for the design provisions of Codes to design the flexure and shear of wide RC beams.

Keywords: RC Members; Wide RC Beams; Loads & Supports.

Abstract No. 519: Perceptions of climate change and lifestyle implications in a developing economy: The Case of Saudi Arabia

Abdulrahman Abdullah Alsuliman*, Yacine Rezgui, Alan S K Kwan
Cardiff University
alsolieman@gmail.com, alsulimanAA@cardiff.ac.uk

While a number of studies reporting public views on climate change have been conducted in the Western world, public perceptions and responses in developing economies remain unknown. The paper focuses on Saudi Arabia, one of the world largest oil producer and consumer of fossil fuel energy per capita, and reports results from a recent survey (n=1173) undertaken between April and June 2012, exploring Saudis' overall perceptions on climate change. In particular, the survey explores (i) the link between impact of noticed signs of climate change and perceived importance of climate change, (ii) perceived concerns and ways these translate into obligations in collective actions and responsibility, (iv) perceived localized risks, and (v) willingness to change daily lifestyles or negative behavior.

Keywords: public perception climate change, global warming, Saudi Arabia, Climate change responsibility, climate change local risks.

Abstract No. 592: On Enhancing the Nano-Communication Systems Using CPU Harmonization Approach

M Baz and A Baz
Newcastle University, York University
Mdbaz01@hotmail.com, aobaz01@hotmail.com

The field of design Nano-communication is vast and sophisticated due to the interdisciplinary of many engineering fields. Although there is a number of researchers and on-running projects on Nano-communication systems, there is, according to best of our knowledge, a complete and effective Nano-communication system as proposed in this work. This paper proposes a novel and reliable design principle by which a Nano-communication system can enhance its capacity by more than ten folds and reduce its consumed energy by more than five times. The proposed approach is inspired by the theory of CPU harmonization approach which has been introduced to improve the design of digital circuit. Thus the second main contribution of this work is to establish a robust road map between the communication and digital circuit design disciplines. The proposed approach is introduced in a modular manner which facilities its ability to extend to cover other communication networks.

Abstract No. 599: Cognitive Radio Technology Challenges

Nafel N. Alotaibi
Electrical Engineering University of Manchester
nafl88@hotmail.com

Cognitive radio technology promises to be a solution to the shortage and misuse of frequency spectrum. As a result the previous decade has witnessed a significant amount of research and the principle of artificial intelligence has been expanded to cover the whole network and its components rather than the radio devices. Sensing the primary user and distinguishing it from the white noise and other secondary users are the main problems that the research attempts to tackle, in addition to trying to find commercial applications to help cognitive radio technology to flourish. Finally, the expected effects of this technology on the future of telecommunications field are amazing, because the efficiency of the network will be improved dramatically, which means more wireless services with higher speeds and wider storage capacity as well as increasing the reliability and stability of the wide area networks.

Abstract No. 604: Design and feasibility assessment of an integrated Concentrated Solar Power plant into the fossil fuelled Juba Power station at Wadi Al-Dawasir, KSA

Abdulmajeed Dhaher Aldabesh
University of Nottingham
laxaa18@nottingham.ac.uk

This paper presents design and feasibility assessment of an integrated concentrated solar power plant into the fossil fuelled Juba power station at Wadi Aldawasir Region, the Kingdom of Saudi Arabia (KSA). The paper is an attempt to provide an overview of energy production capacity and energy consumption in Wadi Aldawasir. In this regard, feasibility of CSP integration into the mini-grid of Juba has been analysed as a case study with an explanation of the solar energy technology suggested to the case study. The paper concludes with emphasising the software of solar advisor system (SAM) features as well as and summarising the inputs and results of the case study design.

Keywords: Energy, sustainability, solar energy technology, solar power

Abstract No. 622: Design Guidance of The Contemporary Saudi-Arabian House

M. Almehrej[1] B. Giddings[1] M. Cresciani[1] and G. Hudson[2]
[1] Department of Architecture and The Built Environment, Northumbria University, UK
[2] Divisional Directors, Mott MacDonald, Newcastle Upon Tyne, UK, 07946100341,
mehrej@gmail.com

Saudi Arabia is characterised by a diversity of climatic, social, topographical, environmental and cultural traits that are embodied in diverse architectural styles and urban patterns. Each province distinguishes itself through the use of local building materials, which have confirmed over time their effectiveness and efficiency in dealing with the climate, as well as social and Islamic cultural requirements such as maintaining the privacy of residents and neighbours, not to mention their suitability from an economic perspective (Talib, 1984). Turkustani (2008) divided the Kingdom of Saudi Arabia into four principal geographic provinces: the central province, the western province, the southern province, and the eastern province.

Keywords: Saudi Arabia, human needs; place; home; courtyard and villa houses

Abstract No. 677: QoE Based Performance Evaluation for 3D Video Transmission Over Mobile Broadband Networks

Emad Danish, W.A.C. Fernando, and A.M. Kondoz
University of Surrey, UK
w.fernando@surrey.ac.uk, a.kondoz@surrey.ac.uk
e.danish@surrey.ac.uk

In the recent decade, stereoscopic 3D video has attracted a larger portion of the consumer market, due to the added dimension of entertainment. However, since it contains additional information to be transmitted over the network, an extra burden is added to the already congested network's capacity. Moreover, transmitting the 3D signal over error-prone wireless networks extends the complications. In literature, models have been introduced to address resource allocation issues of multimedia content based on Quality of Service (QoS) and network parameters. Since previous work, based on Quality of Experience (QoE), has not comprehensively examined 3D video issues pertaining to network utilization, we take this step and as a main contribution in this paper we suggest that network resource allocation could be more efficient provided it is based on consumer's perception of 3D video. Ultimately, the substantial conclusions drawn from the conducted simulations demonstrate a bandwidth saving of up to 1.51Mbps and up to 6.02 dB conserve in signal power.

Keywords: Quality of Experience, Efficient Resource Allocation, 3D, WiMAX, Quality Perception.

Abstract No. 687: The Design of an E-learning Recommendation System based on Adaptive Educators and Teachers Profiles

Ahmed Alzahrani and Jerome Robinson
University of Essex
araalz@essex.ac.uk

An essential operation in information retrieval is called document ranking where the retrieved documents are ranked based on an approximate level of importance to the query. Therefore, traditional document ranking methods rely on measurements of the similarity between the documents and the query. However, from an e-learning perspective, the importance of the documents to the query depends on the relevance of the documents to the researcher's interest. This paper illustrates a support tool for a search engine that will allow educators to look up material content based on their interests. The tool will also incorporate additional techniques that will aim to classify the materials based on the identified interests. The positive statistical results showed the impact of applying the feature of classifying materials (for teachers) as well as finding your query based on your interest (for students) when the survey was conducted on 11 students, and 4 teachers at the University of Essex. Additionally, the used technique can show the optimisation of the student search engine in terms of precise and recall evaluation.

Keywords: Information retrieval, document ranking, classification, precision and recall, TF-IDF , search engine, students interests.

Abstract No. 692: Mapping Risk Factors into Construction Costs in Public Private Partnership (PPP) Projects

Saleh Alzahrani, Halim Boussabaine
University of Liverpool; School of Engineering
salehzh@liv.ac.uk

The vast majority of Public Private Partnership (PPP) are developed based on the rationale that the public authority commissions the design, construction, operation, maintenance, and financing of a public infrastructure project from a private consortium within a single contractual framework. PPP project risks typically include the development and construction of a new asset as well as its operation for several decades. Probably the most serious consequences of risks during the construction period are cost and time overruns. These events are among the most widely used scenarios in value for money analysis risks. The sources of risk change over the life cycle of a PPP project. Construction and development risks in infrastructure projects are, in some cases, very significant. Projects that are related to IT, rehabilitation/refurbishments and complex agencies' interaction are thought to carry more substantial risks than other assets. Work by Standard & Poor's has classified PPP construction risks according to asset types, which suggests at least that funding bodies recognise the existence of an association between construction risks and PPP asset types. In traditional procurement, the public sector normally has to cover all cost distress from these risks. At least there is ample evidence to suggest that cost distress is a norm in some of the projects that are delivered under the public procurement systems. This paper examines the main reasons behind development and construction period risk manifestation and distress. The paper will demonstrate how to map out risks into PPP projects construction cost units.

Keywords: Mapping Risk, Public Private Partnership (PPP), Risk, Cost Overrun.

Abstract No. 705: Using the Cone Calorimeter for Toxicity Measurements of Materials by Raw Sampling

Alarifi, A. A.1*, Phylaktou, H. N.1, and Andrews, G. E.1, Aljoumaiah, O. A.2
University of Leeds1, King Abdulaziz City for Science and Technology (KACST)2
a.alarifi06@leeds.ac.uk

The cone calorimeter can (and has) been used to evaluate the toxic yields of burning materials. The standard setup for the cone is usually limited to O_2, CO, CO_2, and smoke obscuration measurements. It has been criticised for the high dilution at the point of sampling as concentrations are sometimes diluted to below the detection levels of the analysers. Also, some of the species may be fully or partially oxidised during the early mixing stages with the dilution air. This work introduces a modification to the cone calorimeter by adding a chimney on the top of the heater cone enabling raw sampling of combustion products, just downstream of the flame and prior to secondary air dilution. The technique tested and investigated burning pine wood samples. The chimney-appended cone calorimeter in combination with an online FTIR system using a heated sample-line (essential for preventing water vapour condensation) sampling from the chimney undiluted combustion products, can offer an effective and fast bench scale set-up for the measurement of toxic yields from the burning of a wide range of materials and covering a much wider range of toxic species than are currently being measured and reported.

Keywords: Cone Calorimeter, Toxicity, Bench-scale experiment, Gas Sampling Methods.

Abstract No. 799: Wind and Rotor Speeds Estimation Using Fuzzy Inference System for Wind Generation System

M.A. Alsumiri, W.H. Tang and Q.H. Wu
Yanbu Industrial College, Saudi Arabia
University of Liverpool
m.alsumiri@liverpool.ac.uk, whtang@liverpool.ac.uk

This paper aims to develop estimators for wind speed and mechanical rotor speed for a Wind Generator System (WGS). Knowing the exact wind speed is a key factor in achieving a high performance control system. In order to overcome the problem of having a specific sensor to measure the wind speed, many sensorless techniques have been developed. In this paper an exact and accurate estimation of wind and rotor speeds have been achieved by using a fuzzy inference system technique (FIS). The implemented WGS uses Permanent Magnet Synchronous Generator (PMSG). In this paper, PMSG has been investigated in order to derive a set of indices that depend on the wind speed. Also in this paper, a rotor speed observer has been proposed for the WGS.

Abstract No. 819: Customization of Saudi Environmental Assessment Method (SEAM)

Saleh H. Alyami; Prof. Yacine Rezgui; Dr. Alan Kwan
Cardiff University
dr.saleh.uk@gmail.com

The evolution of building assessment tools created a competition, amongst well-known sustainable assessment tools, toward international use. However, realistic evidences show that regional and socio-cultural variations have been a strong obstacle to the direct use of those sustainable assessment tools. Therefore, this paper proposes to customise building sustainable assessment scheme for Saudi's built environment. Therefore, it has been claim that that building assessment tools involve multi-dimensional criteria; therefore a consensus-based approach is used to conduct this study. Hence, the Delphi technique DT and analytical hierarchy process AHP are a reliable approach to reach consensus amongst panel of experts. Therefore, DT and AHP are conducted; involving world leading experts in the domain of environmental and sustainable assessment schemes, as well as professionals and highly-informed local experts from academia, government and industry. The results reveal that international assessment schemes are not fully applicable to the Saudi built environment, as reflected in the development of a new building environmental and sustainability assessment scheme.

Keywords: Saudi's built environment, Sustainability assessment scheme, Delphi technique, AHP.

Abstract No. 820: The Requirements of BIM Governance Model: Practitioners' Perception

Eissa Alreshidi; Prof. Yacine Rezgui; Dr. Monjur Mourshed
Cardiff University
alreshidi.eissa@gmail.com

The construction industry is highly fragmented and highly regulated, involving intensive activities across supply chain and lifecycle. Construction projects have become very complex, including varying activities and processes, and requiring inputs from a wide range of disciplines. However, massive amounts of data are generated because construction projects involve multi-discipline, multi-actor collaboration during a building project's lifecycle. The generated data are sensitive with high concerns related to access rights, ownership, intellectual propriety and security. Until now, dealing with this information raises several issues such as data inconsistency, different data versions, data loss etc. Even though Building Information Modelling (BIM) offers a means of solving such problems, there is practical evidence to show that a governance model is needed to facilitate BIM management across the construction project supply-chain and lifecycle. A comprehensive survey was conducted with the aims of identifying construction industry practitioners' requirements for developing a non-proprietary BIM governance model. Informed construction practitioners in the UK were the main contributors to this study. The findings of the survey reveal a need to develop a BIM governance model with its underpinning cloud infrastructure storage solution.

Keywords: BIM, BIM Governance, Cloud Computing, ICT, Collaboration, Construction Industry.

Abstract No. 887: Increase the BGP Awareness to Speed up the Convergence Time

E.A. Alabdulkreem, H.S Al-Raweshidy, M. F. Abbod,
School of Engineering & Design, Brunel University, London, UK
Eatedal.Alabdulkreem@brunel.ac.uk, Hamed.Al-Raweshidy@Brunel.ac.uk,
Maysam.abbod@brunel.ac.uk

Border Gateway Protocol (BGP) is the standard routing protocol between various autonomous systems (AS) in the internet. In the event of failure, a considerable delay in the BGP convergence has been shown by empirical measurements. During the convergence time the BGP will repeatedly advertise new routes to some destination and withdraw old ones until it reach a stable state. It has been found that the KEEPALIVE message timer and the HOLD time are tow parameters affecting the convergence speed. This paper aims to find the optimum value for the KEEPALIVE timer and the HOLD time that maximally reduces the convergence time without increasing the traffic. The KEEPALIVE message timer optimal value founded by this paper is 30 second instead of 60 seconds, and the optimal value for the HOLD time is 90 seconds instead of 180 seconds.

Keywords: BGP, Convergence Time, HOLD time, KEEPALIVE.

Abstract No.894: Design and Analysis for a Flexible Wind Tunnel Model Using Rapid Prototyping Technology

Abdullah Alanazi and Dr.Helen Lockett
Cranfield University, UK
alroba44@hotmail.com, h.lockett@cranfield.ac.uk

Wind tunnel models are usually manufactured with a rigid structure so that they do not flex under aerodynamic loads. However, in order to investigate aeroelastic effects it is necessary to produce a flexible wind tunnel model with a bending stiffness that is equivalent to that of the full sized vehicle. This study investigates the use of Rapid Prototyping as a technique to manufacture a flexible wind tunnel wing model. The aim is to produce a wing model that will deform, under aerodynamic loads, hence matching aircraft wing deflection during flights. The model should meet a prescribed displacement during wind tunnel testing. The semi-span wing model was designed to be a rectangular plate spar supporting a number of aerofoil ribs and covered by a thin film to form the required aerodynamic shape. The model was manufactured by Acrylonitrile Butadiene Styrene (ABS Plus) material and was produced using the Fused Deposition Modelling technique by the Dimension Elite printer which has 203 x 203 x 305 mm build envelope. Experimental tests were carried out in order to compare with the finite element analysis. In addition, two experiments were carried out to investigate the deflection, natural frequency and damping testing for the wing structure. The first experiment was for the wing model without skin and the second after covering the wing by a film skin. Due to time limitations to test the model in the wind tunnel, however the experimental tests indicates that the study succeeded in manufacturing a flexible wing for wind tunnel testing.

Keywords: Flexible Wing, Wind tunnel testing, ABS Plus material, FDM technique, Finite element Analysis, Experimental tests.

Abstract No. 940: State Feedback Optimal Flight Control System Design with Tracking Feature

Saif H. Almutairi, Nabil Aouf
Cranfield University
s.almutairi@cranfield.ac.uk, n.aouf@cranfield.ac.uk

This paper is concerned with the design of a state feedback optimal control system for lateral motion of an aircraft. A linear quadratic regulator approach was used, and set of mathematical equations was solved for controller gains. The controller incorporated tracking feature to adjust the dynamic of the aircraft to follow certain command input. Performance of the developed controlled was analysed and cross checked with the nominal feedback controller in terms of rise time, oscillation and settling error. The designed controller was investigated on a DC-8 aircraft lateral motion linearized model.

Abstract No.944: State of the Art Review: Investigation of Fuel Cell Thermal Management and Thermal Storage for Building Application

Sami Alsaleh, Shenyi Wu, and Boukhanouf Rabah,
University of Nottingham
samisalsaleh@gmail.com

Energy demands has increased globally due to population growth and the high energy consumption in industrial field , sustainable energies are attempting to play the senior role for energy supply in the near future , a Solid Oxide Fuel Cell (SOFC) and Proton Exchange Membrane Fuel Cell (PEMFC) receives much more attention especially when integration that devices with auxiliary energy and thermal energy storage, thermal management related to fuel cell technology one of the important problems faced this technology. A significant amount of heat is wasted in fuel cell system recovery and reuse of this thermal energy via storage can be useful in management of energy at the peak demands of power thermal energy storage. The paper provides a state-of-the-art review of low and high temperature fuel cell operating and waste heat recovery using Thermal energy storage and phase change material as media and how to improve the efficiency of fuel cell. As this paper's focus is the domestic built environment.

Keywords: Fuel cell, Thermal Energy Storage, Thermal Management, Phase Change Materials, review.

Abstract No. 964: Physical Layer Security in Wireless Networks

Esa Rfaiay Alotaibi, Dr. Khairi Ashour Hamdi
School of Electrical and Electronic Engineering,
The University of Manchester
esa.alotaibi@postgrad.manchester.ac.uk, k.hamdi@manchester.ac.uk

As wireless networks play a demanding role in modern-day communication, it has become essential to provide secure communication between a sender and a receiver. Wireless networks provide a convenient and easy mode of communication compared to wired communication networks. Unlike traditional security solutions on the application and presentation layers, this paper focuses on physical layer characteristics for achieving security in wireless networks. The main reason for studying security for physical layers is the emergence of ad hoc and decentralized networks, in which encryption techniques are difficult to use and implement. The main aim of this paper is to explore ways of providing keyless security solutions for wireless communication networks based on physical layer properties. This paper provides a literature survey on state-of-the-art physical layer security. At the end of the paper we explain future work in physical layer security in wireless networks.

Keywords: Physical layer security in wireless networks, cooperative networks and secrecy capacity.

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Humanities Papers

(Short Abstract only)

Abstract No. 112: Contribution of Place towards Social Freedom and Alienation in the Saudi City - Literary Point of View.

Abdullah H A Alfauzan
Flat 187 Aspect 14, Elmwood lane, Leeds, LS2 8WG
Mobile: 07950475666, 00966552144000
Aaf741@yahoo.com

This paper aims to indicate the role of the place, towards its inhabitants, in terms of social freedom and alienation. Nowhere has the call of the city been more insistent during recent decades than in countries of the so-called developing world, from Brazil to China. However, the increasing urban populations has come at the expense of traditional lifestyles and family units, has affected communication patterns between men and women, and has tended to break down the collective mind-set of the rural community. In other words, it has led to both greater individual freedom and to feelings of alienation. There is a correlation between freedom and alienation, and this is a phenomenon which has imposed itself on the novel across linguistic borders, Defoe's Robinson Crusoe, Buzzati's The Tartar Steppe, Camus' The Stranger, all being cases in point. The contemporary Arabic novel, for instance Ḥanān Al-Shaikh's Misk Al-Ghazāl, is also concerned with the content of this humanitarian issue affecting all lifestyles, particularly in the cities where all the various manifestations of alienation are to be found. The various Saudi novels selected for this study include real and imagined cities, male and female writers and different cities and times. My paper will explore this paradox through environment of the city in contrast with the village in several Saudi novels, especially in terms of its implications for traditional family life. I will analyse how the novels illustrate how city life often causes family tensions on account of this greater freedom of communication plus disappointing and alienating its new inhabitants, even though they also portray the city as a site of greater freedom and creativity. This paper will discuss these two issues by relying on the thematic approach.

Abstract No. 152: The Truth about the Arabic City (real and fictional) and Islam's Perspective towards the City.

Abdullah H A Alfauzan
Flat 187 Aspect 14, Elmwood lane, Leeds, LS2 8WG
Mobile: 07950475666, 00966552144000
Aaf741@yahoo.com

This paper aims to illustrate whether there is really a real and fictional Arabic city. Some critics such as Al-Mahmūd (2006) argue that the Arab city in its real sense is non-existent in the Arabic novel: that the places depicted in Arab fictional literature can only be related to large villages, and that the nature of the composition of the large village does not correspond with the make-up of a modern city, in terms of its main component parts. The importing of a western city into the Arabic novel (as in the case of Paris in Mohammad al-Muwalihi's works) forms a typical example of this belief. Another set of critics such as (Al-nuṣayyer, 2007),however, argues that the defect seems to be in the authors themselves, because they have not yet discovered the nature of the relations that constitute the fabric of the modern city, its composition and the quality of events. The authors' shortcomings are: firstly, a lack of understanding of the structure and nature of the city middle class; and secondly, the failure of authors to investigate and engage with the formation of the city bourgeoisie, and the work they do in commerce and industry. This paper will discuss the aforementioned two issues, by relying on methodology of the thematic approach. And finally, will illustrate the result, that the ways in which the Arab City does exist in Arabic fiction.

Abstract No. 381: Domestic living space furnishings and resident personality

Raghda Hareri
University of Edinburgh
raghdh.h@gmail.com

The living room is the locus of social activities, cultural values, and personal narrative of the people who live in it. This paper aims to raise awareness of living room furniture as a sign of culture and personality. I argue that residential living space furnishing and decoration prove to be rich sources of information, and become a significant vehicle for presenting th e residents' diverse personality. My research demonstrates to prove that interior design is more complex than simply shaping the use of a space, but also reinforce and shape the resident's personality and culture. Through an analysis of case studies, interviews, photographs, and coding and observation of resident living spaces in Jeddah, Saudi Arabia, this paper aims to articulate how residents leave personality footprints on the space they inhabit.

Keywords: Domestic environment; furnishing and decoration; living space; residents; personality.

Abstract No. 601: Culture Misrepresentation of the Middle East in Western Video Game Contexts.

Majed Slalah Balela
Balalaa50@yahoo.com

The research detailed in this Thesis examines how cultural artefacts are represented within modern video game contexts. It takes as a starting point the perspective that whilst there is evidence of substantial investigative work that takes place in the construction of video game environments, there is still more that can be done to improve instances of miss-representation within such contexts. Recently (growing over the past thirty years), video game playing has become a predominant part of popular culture. Video games are instances of cultural artefacts of our present time, which offer exciting experiences of many different places, and times, in ways that game players of all ages and genders can interact with and be involved in. There are a huge number of video games around the world, some of which have been produced representing cultures in particular locations or representing particular groups of individuals. However, as is detailed from the literature sometimes the culture can be misrepresented through the story, place, or characters. Through the research detailed in this Thesis, the aim is to discover what are the current issues regarding mis-representation, how do these issues occur, and can we construct measures to help today's game designer in the consideration of inclusion of cultural artefacts. As a particular area of interest, the focus of the main body of the research outlined within this Thesis is on the representation of Islamic cultures within modern video games.

Abstract No. 832: The Role of the Researcher in Data Collection: Insider versus Outsider Perspective in Qualitative Research

Fatmah M Almehmadi
Loughborough University, UK
F.M.S.Almehmadi@lboro.ac.uk

A relatively large body of literature discussing the position of researchers as data collection instruments, particularly in the field of ethnography, has been established over years. Little attention, however, has been paid to the role of the researcher in the process of data collection in relation to information behaviour research, an area that examines the different ways in which people interact with information. This paper aims to expand the discussion on the researchers' status while conducting their research but from another perspective, namely, information behaviour. This has been accomplished by illustrating the insider status of this researcher when conducting a PhD project into the information behaviour experiences of female researchers in Saudi Arabia. The strengths and challenges of being an insider are examined. The way in which identified limitations has been addressed is also highlighted. The paper serves as a guide for researchers to consider their status while conducting research.

Keywords: Insider status, outsider status, research methodology, qualitative research, data collection, information behavior.

ICT Papers

(Short Abstract only)

Abstract No. 13: Evaluation of Saudi E-Government Portal (SAUDI)

Turki Albaker
ITC department, Arab Open University, Saudi Arabia
t.baker@arabou.edu.sa

There are many definitions of e-government. Some of the definitions emphasize in the use of Information Technology & Communication (ICT) in government business (Abanumy, A., Al-Badi, A. &Mayhew, P., 2005). From this definition's perspective, the purpose is to enhance the internal process of government agencies which implies that it will be finally reflected on the users of e-government. Alhujran, O. & Chatfield, A. (2009) defined the aim of e-government as a means of government reform and enhancing public services. A broad definition by Sakowicz, M. (2003) defines e-government as using the ICT to provide government services to the public, engage citizens and to support government operations. He identified four dimensions of e-government: e-services, e-management, e-commerce, e-democracy. In fact, there is no one definition that is widely adopted as there are different perspectives on e-government. However, we can say that e-government should not be perceived as just a transformation of paper-based government activity to ICT; it aims towards the use of technology to provide better management of the country reflected in better quality of services provided to the public and better contribution to the economy.

Abstract No. 170: Euler Diagram Clutter

Mohanad Alqadah
The School of Computing, Engineering and Mathematics
University of Brighton, UK
msa12@brighton.ac.uk

Euler diagrams which used to teach set theory in schools and to build other visual languages known to be an effective representation of information when they are well-matched and well-formed. However, previous research used low cultured diagrams to convey simple information, while in real world applications Euler diagrams can become more cluttered. Therefore, we want to know how much information we could put in a single diagram before user understanding is significantly reduced. The preliminary result of this study suggest that the clutter level could have an impact on the comprehension of Euler diagrams, but this clam needs to be supported with deeper statistical analysis on the data produced from this study. This study also suggest that the question placement could impact the comprehension of Euler diagrams. More analysis will allow us to indicate the level of clutter that leads to reduced understandability of Euler diagrams.

Keywords: Euler diagrams, Venn diagrams, Clutter, Complexity, Information Visualization.

Abstract No. 178: Query Optimisation Based on Measures of Regret

Khaled Hamed Alyoubi[1], Sven Helmer[2] and Peter T. Wood[3]
[1, 3] Dept. of Computer Science and Information Systems,
Birkbeck, University of London
London, United Kingdom
[2] Faculty of Computer Science, Free University of Bozen-Bolzano
Bolzano BZ, Italy
[1] khaled@dcs.bbk.ac.uk, [2] sven.helmer@unibz.it, [3] ptw@dcs.bbk.ac.uk

We consider optimising queries with uncertain parameters. In particular, we study the case of a sequence of selection operators where the selectivity of each operator is known only to fall in some interval of values. The approach that we use to deal with the uncertain parameters is that of minmax regret optimisation.

Keywords: Database; Query; Optimisation; Uncertainty; Minmax Regret.

Abstract No. 180: Evaluation of Social Media Frameworks for Small and Large Organisations

Aisha Yaquob Alsobhi, Geetha Abeysinghe
School of Sciences and Technologies,
Middlesex University, UK
aa2756@live.mdx.ac.uk, g.abeysinghe@mdx.ac.uk

The nature of the business today is very competitive for small businesses (SMEs) since they have limited resources comparing to large organisations. ITs have helped businesses to look for new competing ways in persuading their customers. Social media (SM) are considered one of these technologies and there have been successful existing practical examples in the literature about its effectiveness in business. SM have given SMEs an opportunity to create a global customer base in a cost effective manner which was not possible in other business model. The main aim of this research was to investigate how SMEs can benefit from SM. Although there are many IT adoption models but there are very few which focuses on SM alone. According to our knowledge there is none which focuses on SM adoption by SMEs until the Before, Process and After (BPA) framework has been proposed (Abeysinghe & Alsobhi 2013). This research also aimed to critically review of existing frameworks.

Keywords: Social Media adoption, Small Businesses, Social Media framework.

Abstract No. 213: An Investigation of the Effectiveness of Parsing Techniques in Talent Management Systems

Fawaz Alanazi
School of Computer Science, University of Nottingham, UK
Psxfa1@nottingham.ac.uk

Parsing is a technology through which words or phrases can be extracted against a context, from plain text documents and videos with metadata attached. This technology is extremely useful in order to extract contextual information from plain text and video files and use the information as data to be stored in tables of relational databases. Two forms of parsing are very popular natural language parsing, and document object modelling (DOM) parsing. The author studied the application and effectiveness of parsing tool in talent management systems, by interviewing 42 active users from the HR consultancy firms. The

results revealed that the recruiters do not use the natural language parsing feature, of talent management tools, at all. In fact, the recruiters view parsing as a database building tool that takes flat files as inputs, and not an efficiency enhancing tool. It is viewed as a mandatory tool for meeting customers' requirements and meeting talent management objectives of the company. For example, parsing is used to capture resumes in the formats provided by the customers and is indexed them in databases for semantic and ontological searches. However, parsing is not viewed as a time saving tool that can enhance the efficiency of their overall recruitment process.

Keywords: Parsing, Talent Management Systems, Databases.

Abstract No. 318: An Attack Strategy Detection Mechanism Using Accumulative Manipulation of Attackers Learning Curve

Suliman Abdullah Alsuhibany
School of Computing Science / Newcastle University / NE1 7RU
Newcastle / UK
suliman.alsuhibany@ncl.ac.uk

This paper proposes the notion of accumulative manipulation that can be observed through a number of attempts accomplished by the attacker, which forms the basis of the Attacker Learning Curve (ALC). Based on a controlled experiment, we define and evaluate a strategy detection mechanism, which is experimentally shown to be accurate more than 70% of the time.

Keywords: Attacker Learning Curve; Intrusion Detection; Unsupervised Learning; Supervised Learning; Strategy Detection.

Abstract No. 399: SMP-based Dual Propose Matching Scheme for Service Selection

Hosam Al Hakami, Feng Chen
Software Technology Research Laboratory (STRL)
De Montfort University, Leicester, UK
P09050421@dmu.ac.uk, fengchen@dmu.ac.uk

Nowadays there are plenty of Web Services available on the Internet. The continuously increased services lead to the necessity of service oriented workflow management to define, manage, and execute workflows through the service selection and composition. This research focuses on an accurate and effective mechanism for service selection, in which an ideal matching process needs to be performed. A novel matching scheme is proposed to derive a quality satisfaction in service selection. The scheme is based on the well-known Stable Marriage Problem (SMP) algorithm. A competitive matching process (Dual-Propose-SMP) is defined and supported by a new strategy called Choosy Strategy to make it suitable for service selection. Through the proposed approach, optimal candidates can be matched based on the preferences, which is the key step of service oriented workflow management.

Keywords: Stable Marriage Problem, Service Selection, Dual Propose Algorithm.

Abstract No. 410: Cloud Forensics Challenges

Saad ALQAHTANY, Nathan CLARKE & Steven FURNELL
Centre for Security, Communications and Network Research (CSCAN)
School of Computing and Mathematics, Plymouth University, PL48AA, Tel 01752586287
saad.alqahtany@plymouth.ac.uk

Cloud computing is a dramatic paradigm shift in the Information and Communication Technology era and it is transforming how services are being delivered. Cloud services are rapidly growing together with the acceptance rate and adoption of cloud solutions. The features of cloud computing such as resource pooling, rapid elasticity and large storage capacity along with its distributed nature present a range of technical and organisational issues for digital investigators. These issues lead digital investigators to have limited success when applying traditional forensic investigation approaches and tools. To date, there has been a significant lack of research focused upon solving cloud forensics issues. This paper discusses the definition of cloud computing , presents the forensic challenges pertaining to the cloud environment and proposes a framework using cloud features to overcome some technical cloud forensics issues with a view outlining the future prospects.

Keywords: Cloud Computing, Digital Forensics, Cloud Forensics.

Abstract No. 515: The Roles of Artifacts to Facilitate Knowledge Transfer in Information System Development Projects

Wael Bukhari
Business School, University of Nottingham, UK

In response to the recent reported high rate of troubled and failed Information System Development (I.S.D.) projects, which were often due to an inaccurate understanding of customers' requirements, this paper provides a further perspective to study the process of 'Requirements Elicitation', by employing number of knowledge management concepts to explore the role of the knowledge artifacts involved in the practice as boundary objects, and how they influence the knowledge flow from the customer to the developers. By interviewing 30-IS project managers in Saudi Arabia, the analysis identified five relevant artifacts, namely: 'General Request', 'Features', 'Visual Diagrams', 'Prototype', and 'Requirements'. Additionally, it describes in detail and designs a theatrical framework for knowledge transfer in I.S.D. through involvement with three types of knowledge boundaries (explicitly 'Syntactic', 'Semantic' and 'Pragmatic'). Though the existed critique of the effectiveness of such objects at knowledge transferring, number of benefits are declared, which reflects recommended practical experience.

Keywords: Information Systems Development, Requirements Elicitation , Knowledge transfer, Boundary Object, Knowledge Artifact.

Abstract No. 548: The Effect of the Language and Gender on the Quality of Voice over IP

Dhaifallah Alwadani
Department of Computing Science and Mathematics
University of Stirling
dalwadani@gmail.com

This paper investigates the effect of the language and gender of the speaker on the quality of the VoIP call. To achieve that, a test-bed was built to test the performance of some of widely used codecs. This paper considered five different codecs as following: G.711 A-law, G.711 M-law, Speex, GSM and iLBC. Using these codecs, we tested six languages to see how they will perform. The languages were: Arabic, American English, British English, Spanish, French and Chinese. In the test-bed, we analyzed how these codecs performed under different network impairments e.g. packet loss or jitter. The results showed that there was a quality bias toward male English speakers. For them, the quality was higher and the performance was more stable. However, this was more noticeable on some codecs more than others. For example, iLBC showed better and more consistent results than GSM despite the fact that they have the same bandwidth. This paper serves as an examination of the current state of VoIP technology. This project aims to analyze the effects of the choice of codec on the quality of VoIP of different languages and genders under different configurations i.e. packet drops and jitter.

Abstract No. 566: Multimodal E-Commerce Environment: An Initial Study

Majed Aborokbah, Dimitrios Rigas
De Montfort University, UK
University of West London, UK
aborokbah@dmu.ac.uk, dimitrios.rigas@uwl.ac.uk

Multimodal and social interaction in e-commerce environments has drawn substantial attention from business and academia. This study focuses on how social interaction and multimodal metaphors can affect customers in e-commerce applications. Specifically, this research study examines the influence of both social media and multimodal metaphors on the aspect of customers' experiences, purchase intention and shopping enjoyment. This survey study performed with a sample of 50 participants. It shows the importance of social presence and multimodality for participants in e-commerce environments. Together, social presence and multimodality account for a considerable amount of variance in continuous use and purchase intention.

Keywords: Social interaction, multimodality, e-commerce, social media, social interactive e-commerce.

Abstract No. 578: The Effect of Test Location and Environment on Usability Testing

Abeer Alharbi, Pam Mayhew, John Glauert
School of Computing Sciences
University of East Anglia,
Norwich NR4 7T, UK
Abeer.Alharbi@uea.ac.uk, P.Mayhew@uea.ac.uk. J.Glauert@uea.ac.uk

The overall aim of this paper is to review and investigate how test location has been studied and addressed in the literature. Test location means the location on which is the usability testing is applied, is it in the lab where evaluator and participant are in the same place or whether they are in different places? It also aims to investigate the environment effect on usability testing. The environment in this context means all test surroundings, including distraction or interruption may happen during testing. Reviewed literatures showed that there is a considerable lack of researches that study the potentially influence of the test environment on usability testing by considering all possible affecting factors. In addition, few researches investigate the impact of test environment on usability by applying the same test in different places to find out whether the results yielded valid and comparable results.

Keywords: Usability testing, Asynchronous usability testing, Environment, Distraction, Usability Testing Location.

Abstract No. 595: Proximity-Based Representation for Entity Finding Using Adaptive-Windows

Fawaz K Alarfaj
School of Computer Science and Electronic Engineering University of Essex, Wivenhoe Park, Colchester, CO4 3SQ, UK,
falarf@essex.ac.uk

Entity-finding search is concerned with retrieving a ranked list of entities as a response to a specific user query. Some models that proved to be very successful used the idea of association discovery in a window of text rather than in the whole document. These studies considered only fixed window sizes. In this work, we propose an adaptive window size approach for entity-search. Some of the document attributes are used to adjust the window size for the document. These attributes include document length, average sentence length, number of entities in the document and the readability index. The experimental results show a positive effect when taking the document features into consideration when determining the window size.

Keywords: Entity-Finding, Proximity, Expert-Finding, Adaptive-Window, Information Retrieval, Natural Language Processing

Abstract No. 657: QRMOF: A Multi-Perspective Framework for Quality Requirements Modelling

Kawther Saeedi[1], Liping Zhao[1], Sam Supakkul[2], Pedro Sampaio[3]
[1] School of Computer Science, University of Manchester, Manchester, UK
Saeedik@cs.man.ac.uk, liping.zhao@cs.man.ac.uk
[2]Department of Computer Science, University of Texas at Dallas, Texas, USA
ssupakkul@ieee.org
[3]Manchester Business School, University of Manchester, Manchester, UK
p.sampaio@manchester.ac.uk

A considerable amount of research has been conducted to model Quality Requirements (QRs). However, in comparison with functional requirements (FR) the non-functional requirements (NFRs)/QRs models are still premature and not widely adopted. One of the fundamental reasons is the complex nature of QRs that made constructing a complete QRs model hard to achieve. Therefore, this research attempts to address a fairly complete set of QRs through integrating QRs with FRs. A multi-perspective modelling framework is developed offering a process oriented approach to model QRs in different views and phases of requirement. These models are brought together in a descriptive representation schema. The schema represents a logical structure to guide the construction of requirement models comprehensively and with consistency. This novel framework is guided by a novel constructive modelling process to facilitate building and integrating those models. The framework along with the modelling process guide requirement engineers to capture complete, traceable and comprehendible QR models for software system

Keywords: Quality requirements, Requirement engineering modelling, Multi-perspective modelling.

Abstract No. 665: Information Trust, Professional Ethics and Risk in Embracing E-Government in Saudi Arabia

Mr. Saad Alammar, Dr. Ben fairweather, Dr. Sara Wilford
Centre for Computing and Social Responsibility De Montfort University, UK
P08003934@myemail.dmu.ac.uk

This paper will analyze e-governance in Saudi Arabia, and describe some of the barriers to the successful adoption of e-services. In Saudi Arabia automation of all government processes commenced in the year 2005. E-governance is significant and helps to raise the standards of accountability and transparency. Through technology, delivery of government services is improved and enhanced. On the other hand, citizens are empowered since they can access government information and interact, as well participate in issues concerning them. In countries where e-government is successful, the internal relationship between the government and its public is improved. On a global level, E-governance enhances the economic and political position and allows communication of international business.

Abstract No. 688: Security Requirements Modelling in Agile Development Methods

Minahi Alotaibi
STRL, DMU, Leicester, UK
minahitawel@yahoo.com

It has become crucial to study and model security requirements for any system and take the information into account from the beginning to avoid losses and fortify systems. Proposed extension of Unified Modelling Language, UMLsec, is one of the most prominent examples of these attempts. However, it was built on the basis of object-oriented modelling, whereas current developments need to be implemented for projects that require rapid agile development methods, such as eXtreme Programming (XP), SCRUM, Feature Driven Development (FDD) and others. This paper gives a brief description of UML, misuse cases, UMLsec, and current research efforts to integrate agile development methods with security requirements. It highlights the need to work with the proposal of using UMLsec in software agile development methods.

Abstract No. 714: Counterparty Risk Evaluation Formula in a Cloud Computing based Mobile Banking Context

Abdullah A.I. Alnajem and Ning Zhang
The School of Computer Science
The University of Manchester
Kilburn Building, Oxford Road
Manchester, UK
alnajema@cs.man.ac.uk, nzhang@cs.man.ac.uk

Banks are launching mobile banking (m-banking) services in addition to their existing Internet banking services. Many of them are beginning to utilize Cloud computing to start and even expand their m-banking services. This paper describes a novel counterparty risk evaluation method in a Cloud computing based m-banking context. The novelties of this paper are three-fold. Firstly, it analyses the vulnerabilities in the Cloud computing based m-banking context. Secondly, it identifies a set of risk factors in this context. Thirdly, it presents a counterparty risk evaluation method with special emphasis on a weight allocation method. The weight allocation method takes into account of the m-banking systems interdependencies to assign more realistic weights to the risk factors.

Keywords: Cloud computing, mobile banking, counterparty risk, portfolio weights, systems dependencies.

Abstract No. 721: Supporting Interaction in Lectures Using Mobile Devices Wesam Shishah, Elizabeth FitzGerald, Gail Hopkins, Colin Higgins

School of Computer Science, University of Nottingham, UK
Institute of Educational Technology, Open University, UK
psxws@nottingham.ac.uk, gail.hopkins@nottingham.ac.uk, colin.higgins@nottingham.ac.uk, elizabeth.fitzgerald@open.ac.uk

An important area in education is students' interactions in the learning environment and their engagement with learning activities. Personal mobile devices are being increasingly used to assist students' learning. This paper examines the connection between mobile devices and students' interactions in a learning environment. Initial studies reported here have been carried out in order to understand learners' characteristics, learning activities, the learning environment and mobile device usage.

Keywords: Mobile devices; interaction; Higher Education; lectures; engagement; learning; HCI.

ACM Classification Keywords: H.1.2 User/Machine Systems; H.5.3 Group and Organization Interfaces.

Abstract No. 728: A Secure Collaborative Environment Implementation in Patient-Centred Healthcare using Workflow Technology

Shada Alsalamaha,b, Hessah Alsalamahb, W. A. Graya, and Jeremy Hiltonc
Cardiff School of Computer Science & Informatics, Cardiff University, Cardiff, UK.,
S.A.Salamah@cs.cardiff.ac.uk, w.a.gray@cs.cardiff.ac.uk
College of Computer and Information Sciences, King Saud University, Riyadh, Saudi.
halsalamah@ksu.edu.sa
Department of Informatics & Systems Engineering, Cranfield University, Shrivenham, UK,
j.c.hilton@cranfield.ac.uk

Enabling Patient-Centred Care (PCC) requires the flow of information with the patient between different healthcare providers as they follow the treatment plan. However, PCC threatens the stability of the balance of information security in supporting systems since legacy systems fall short of attaining a security balance when sharing information by the compromises made between its availability, integrity, and confidentiality. Thus, legacy systems need additional security features to cope with this situation. This research uses a mixture of qualitative research approaches to identify the issues in legacy systems, and the need for a Secure Collaborative Environment (SCE). Moreover, the results show how to implement an SCE using Workflow Technology (WfT). This allows legacy systems to attain the security balance required to support PCC.

Keywords: Patient-centred care, healthcare systems, information security, workflow technology.

Abstract No. 741: Exploring the Influences on Faculty Members' Adoption of Mobile Learning Technology at King Abdulaziz University, Saudi Arabia

Leena Ahmad Alfarani,
University of Leeds, UK. 39 Wesely Croft, LS11 8RW, Leeds, UK
ml09laka@leeds.ac.uk

The growth of the internet and mobile devices has driven higher education institutions to take advantage of a wide variety of technologies in teaching and learning in order to keep up with the information age (Sarkar, 2012). One of the immediate results of this growth in mobile phone technology is that faculty members at universities are increasingly expected to teach by using this technology in order to improve education and change the style of traditional teaching. The main objective of this study is to better understand the acceptance or rejection of faculty members of mobile learning technology in Saudi higher education. The critical factors from the Unified Theory of Acceptance and Use of Technology (UTAUT, Venkatesh et al., 2003), and the extended constructs that affect the acceptance of ML will be tested in this study. A mixed methods approach is selected: combination of quantitative and qualitative research will be conducted via online questionnaires and online synchronous interviews with groups of lecturers at King Abdulaziz University. The research methodology starts with the collection and analysis of quantitative data, and is followed by the collection and analysis of qualitative data. Finally, data is integrated during interpretation.

Keywords: Mobile Learning, Mobile Learning Acceptance Model, Higher Education.

Abstract No. 811: Evaluating the Usage of Plagiarism Detection Tools and Prevention Approaches in Saudi Universities

Reemiah Muneer ALotaibi
Leeds Metropolitan University, Leeds, UK
Reemiah77@hotmail.com

The plagiarism issue is very challenging for academic institutions worldwide. With the wide spread of the internet and the availability of online sources, students are more tempted to plagiarize. In the developed countries, academic institutions use a variety of methods and approaches to fight this problem. Leeds Metropolitan University is no exception. In other parts of the world, especially the developing countries, the issue of plagiarism is even more severe, especially with the lack of adequate strategies to combat plagiarism. This dissertation evaluated the experience of Al-Imam Muhammad ibn Saud Islamic University (AMSIU), located in Riyadh, Kingdom of Saudi Arabia, in fighting plagiarism in the light of Leeds Metropolitan University's (LMU) experiences in the United Kingdom. To carry out this research, the researcher collected data from staff members and students in both universities. The results of analysing the collected data have shown a wide gap between the experiences of the two universities in fighting plagiarism. While LMU adopts and employs the most recent technologies and prevention approaches to tackle plagiarism, AMSIU lacks both technologies and prevention approaches. The results have also shown that the lack of adequate prevention approaches and detection tools has been reflected in the percentage of plagiarizers among AMSIU students, where around a third admitted committing this offence in comparison with around 10% of LMU students. Based on these results, a few suggestions were recommended to be adopted by AMSIU in order to overcome this problem.

Keywords: Plagiarism, Plagiarism Combat, Plagiarism Detection Tools, Academic Institution, Saudi Universities.

Abstract No. 848: Modelling Dynamic Compensations within the Process Calculus of Communicating Sequential Processes (CSP)

Abeer S. Al-Humaimeedy*
King's College London, Department of Informatics, UK,
abiar.al-homaimeedi@kcl.ac.uk
King Saud University, Department of Information Technology, Saudi Arabia,
abeer@ksu.edu.sa

Compensation is a technique to roll-back a system to a consistent state in case of failure. Compensating process calculi are formal modelling languages to model systems with compensations. Recovery mechanisms for compensating calculi specify the execution order of compensation sequences. The dynamic recovery means that the order of execution is determined at runtime. In this paper, we define an extension to one of the compensating calculi (cCSP), with dynamic recovery for compensations. In contrast with previous versions of cCSP, our calculus DEcCSP provides mechanisms to replace or discard compensations at runtime. We provide a formal operational semantics for DEcCSP, and illustrate its expressive power with a case study.

Keywords: Recovery Mechanisms, Compensating Calculi, Compensating CSP, CSP

Abstract No. 856: A Tutorial on Cracking and Improving Cryptographic Protocols

Ali Alshehri* and Steve Schneider†
Dept. of Computing, University of Surrey
Guildford GU2 7XH, England
a.a.alshehri@surrey.ac.uk

Cryptography underpins secure communications. In order to use cryptography, there are two questions that must be considered. The first is which cryptographic algorithms should be used, and the second is how to use them in a secure protocol. Here, we are concerned with the second question: how to use cryptography in a protocol, with assumed secure cryptographic algorithms. We illustrate how to find vulnerabilities in cryptographic protocols using the CasperFDR tool. The main contribution of this paper is that it illustrates the modelling from the underlying theory perspective, which is beyond the knowledge required for modelling using CasperFDR tool (black-box approach). Therefore, this paper is a facilitating case study for a “black-box" CasperFDR user to become a more powerful analyser.

Abstract No. 866: A New Data Management Approach for Long Running Transaction: Reconsidering PP/T

Abdullah Bajahzar, Abeer Baslem, Huda Alhaj
STRL, De Montfort University, Leicester, UK
abajahzar@yahoo.com, Baj2002@yahoo.com, Asb1999@yahoo.com

Many businesses are now operating using long running transactions. However, he existent models do not adequately support effective long running transactions. We propose PP/T model, which we suggest that is well placed to sustain the long running transaction by substantially minimizing the rates of failure. The results of simulation eventually show that it minimizes the failure rates for long running transactions.

Keywords: Concurrency, PP/T model, data space, long running transactions.

Abstract No. 903: Designing a New Framework of general, dyslexia and Arabic dyslexia elements for evaluating Arabic Dyslexia Technology Training Tools

Fadwa AlRowais, Mike Wald, Gary B Wills
School of Electronics and Computer Sciences
University of Southampton,uk
1fmar1v10@ecs.soton.ac.uk, mw@ecs.soton.ac.uk,
3gbw@ecs.soton.ac.uk

Although dyslexia has led to considerable research, a review of literature reveals that few empirical studies have examined training tools from the perspective of Arabic speakers with dyslexia. Thus, there is little reported experience in the issues that arise in deciding the success or failure of the evaluation of those tools. This paper demonstrates the construction of an Arabic Framework for Dyslexia Training Tools (AFDTT). This framework can be utilized to support the design and guide the evaluation of Arabic training tools for dyslexia. Drawing upon established theories and prior research findings, a set of ninety seven elements has been developed for the proposed AFDTT. In terms of constructing the AFDTT, sixteen proposed themes are created to constitute the components of the AFDTT. The developed elements form as descriptions for the components. Further refactoring was carried out and the final form of the AFDTT consists of three main components and eighteen subcomponents.

Keywords: dyslexia; Arabic; framework; tool.

Abstract No. 922: Automated Service Level Agreement Negotiation for Cloud Robotics

Faisal Alsrheed, Abdennour El Rhalibi, Martin Randles, Madjid Merabti
School of Computing and Mathematical Sciences
Liverpool John Moores University
Byrom Street, L3 3AF, Liverpool, UK
F.S.Alsrheed@2010.ljmu.ac.uk, A.Elrhalibi@ljmu.ac.uk, M.J.Randles@2004.ljmu.ac.uk,
M.Merabti@ljmu.ac.uk

In 1996, University of Tokyo introduced the concept of “remote-brain”. Then again, in 2010Google renewed it and introduced "Cloud Robotics". The main idea behind Cloud Robotics is that next generation robots shall not be limited by the on-board computation and to connect to the cloud to offload computationally intensive tasks. Many works have been done in Cloud Robotics; however there is no works that propose practical way of how the robots will look for cloud providers and negotiate with them. Cloud Computing marketplaces are dynamic and fast, where cloud providers and “consumers” frequently join and leave. An automated negotiation is needed to cope with this to establish Service Level Agreement (SLA). So in this work, we suggest the use of intelligent agents and Rubinstein’s Alternating Offers Protocol forautomated SLA negotiation in Cloud Robotics.

Keywords: Automated Negotiation, Cloud computing, Service Level Agreements (SLA) management, intelligent agents.

Politics and Law Papers

(Short Abstract only)

Abstract No. 119: Authorities in Saudi Arabia

Abdulwahab M Alkhadhari
School of Law, University of Stirling

This paper, an assessment of Islam as a source of Saudi Law will be provided. Therefore, this chapter will discuss the primary source of law in Saudi Arabia, looking at its historical foundations. In addition to this, Basic Saudi Law will also be discussed, although the outline of its historical background will be brief. In the first instance, the origins of the legal system in Saudi Arabia will be described (i.e. its roots in Islamic Law, or Shari'a), presenting the most important elements in Islamic Law. Furthermore, there will be insights given into the Islamic School of Law (including an explanation of what constitutes 'Islamic') and an overview given of the religious framework of Islam. However, as above, these descriptions will merely offer a general outline. In order to provide a basis, the Holy Qur'an and Sunnah will be examined since these make up the nation's Constitution, governed by Islamic law (Shari'a). For a clear understanding of the concepts underpinning Saudi Arabia's legal system, it is first necessary to understand Shari'a. Consequently, it will be possible to assess the regulations of the Saudi Arabian government. This is because Saudi law and economics are mainly based on Islamic law: a complicated system that requires laborious and profound study of Islamic Law and Islamic economics. An overview of the Islamic system of Law will then explain the commitment in the heart of every Muslim that will not allow them to conceal misdemeanours or cheat others, even if such cheating and misdemeanours are lawful from the civil law perspective. In this paper, attempts will be made to discover whether the Islamic system can be separated from Shari'a. More specifically, the question will be asked of whether Contracts of Sale can be defined as part of a financial system that is affiliated to Islamic Shari'a principles and values. Here, what will be examined is how the Holy Qur'an explains the legality of sales and the way they can be validated

Keywords: Authorities, Saudi Arabia

Abstract No.335: Reforming Remuneration Practices in Saudi Arabia

Abdullah Almhmoud
The University of Liverpool, Law School
rydrtc@hotmail.com

The scene of regulating remuneration practices is Saudi Arabia has two different dimensions: the first is related to members of the board (executives and non-executives) and here the law has decided to issue the maximum level of remuneration that can be paid, whether that member is an executive or non-executive director, and this remuneration is paid for serving on the board. However, the law is silent on the issue of executives' remuneration. The Corporate Governance Regulations contain instructions to listed companies with regard to the issue of deciding on executive remuneration. This paper will argue that the scene of regulating remuneration practices in Saudi Arabia is not only inadequate and falls short of the best practice standards, but also fails to empower shareholders and grant them the minimum level of protection from excessive levels of remuneration via adequate disclosure requirements and requiring the listing of executives' remuneration as an item on the agenda of the Annual General Meeting for discussing and asking questions.

Keywords: Remuneration; Directors, Corporate governance; Regulation; remuneration committee, shareholders.

Abstract No. 489: The Gulf Cooperation Council Monetary Union

Reem Rashed Alharby
Reem.alharby@gmail.com

This paper offers an evaluation of the attempt of six Arabic countries toward adopting a single currency and achieving a monetary union. To assess the feasibility of the Gulf Cooperation Council (GCC) countries in order to produce a common currency, the research adopts the well-known theory of Optimum Currency Area (OCA) by Mundell (1961). The paper reviews empirical as well as theoretical studies on the GCC states' attempts to form a single currency. Moreover, it discusses a number of criteria suggested in Mundell's theory and how these are applied in the context of the GCC countries. The study found that there are serious steps towards the GCC endeavor, yet there are other issues hampering the application of the monetary union and the introduction of a single currency. It concludes with some recommendations for policy.

Keywords: monetary union, Gulf Cooperation Council, Mundell theory, Optimum Currency Area theory.

Abstract No. 943: Arbitration proceedings in Saudi Arabia

Albara Abulaban
School of Law, University of Stirling

These article discuses the proceedings of arbitration according to the Saudi Arabian arbitration law. It focuses on the following matters; Law Applicable to the Procedure, place of Arbitration, language of Arbitration, time-periods, the sessions; administration and record and, Presence, and finally the absence of the parties.

Keywords: Saudi, Saudi law, New Arbitration Law

Paper: Business and Economics

(Short Abstract only)

Abstract No. 5: Factors Influencing the Strategy Implementation Process and its Outcomes: Evidence from Saudi Arabian Banks

Ibrahim Al-Kandia, Mehmet Asutayb, Robert Dixona
Business School, Durham University, UK
School of Government and International Affairs, Durham University, UK

The competitive advantage of an organization is illustrated by the distinctiveness of its capabilities and how it uses these capabilities to achieve extraordinary profits or returns in comparison to other organizations. One of the most important capabilities that organizations can adopt is an effective and strategic decision-making process. Within the framework of strategy implementation, this study focuses on the factors that influence this process and on the outcomes of the strategy implementation stage of strategic decisions. The primary data for this research has been assembled from a questionnaire conducted with one hundred and twenty middle managers belonging to three highly successful banks in Saudi Arabia; these banks have recently had a particular strategic decision implemented. The subsequent statistical and econometric analysis of this data indicates that factors from three main groups significantly influence strategic decision outcomes, thereby determining successful strategy implementation. These factors are as follows: (i) process and personnel factors, including involvement and communication; (ii) project factors such as time and the priority of the decision; (iii) organizational factors, including top management support, religion, and organizational structure. Contrary to expectations, other cultural and external factors, such as resource allocation, people, commitment, and motivation, appear less significant with regard to the outcomes of strategic decisions. Further, it was also revealed that all the correlation coefficients are positive between independent factors and the outcomes.

Keywords: Strategy implementation; strategic decision; implementation process and outcomes.

Abstract No. 82: Measuring Outcomes of International Higher Education Partnerships

Abdullah Mulfi Alharthi, Dr Tariq Khan
Middlesex Uxbridge, UK
awa200@yahoo.com

There are many international partnerships developed overseas in higher education institutes and most of them completed successfully where some faced barriers. Measuring the outcomes is one of the guidance in determining the success and barriers of completing the international partnerships. This paper measures and investigates the critical success and barriers factors that measured in other studies and the author therefore, will apply them to a case study context of the international partnerships between Brunel University in United Kingdom and Najran University in Saudi Arabia. In addition, the author will investigate other effective factors that had not measured in international partnerships. This paper further focuses onto develop a conceptual model framework and suggests a research approach to examines and measures the international partnerships in general and higher education institutes in particular.

Keywords: Partnership, higher education, development, Education.

Abstract No.122: Cross-cultural Insights into B2B Relationship Marketing: A case study approach: With Special Reference to Saudi Telecom Company

Waheed Ibrahim Baghdadi
wbaghdadi.uk@hotmail.com

Saudi culture has a significant impact on relationships in B2B marketing in business, especially in the telecommunications industry. The imperatives for change and adjustments in Relationship Marketing (RM) will provide tremendous benefits to Saudi Telecom Company (STC) in particular, which as a key company in Saudi Arabia is a good example of B2B relationship marketing. This research aims to examine the role of culture in the building of B2B marketing relationships between STC and its partners. This study develops a preliminary framework and cross-cultural B2B marketing, especially in Saudi Arabia, is urgently needed. This work contributes to cultural impact theory by extending cross-cultural models which have been developed in a business-to-consumer (B2C) context to understand cross-cultural theory in a B2B context. Data are elicited by qualitative in-depth interviews with 35 STC senior managers to explore how a growing organization absorbs cultural awareness into its B2B relationships.

Abstract No. 135: Examining the Relationship of Organisational Culture and Leadership on IS Implementation

Sarah Basahel
Sarah_basahel@hotmail.com

Customer Relationship Management (CRM) is being increasingly adopted by organisations around the world, however; many firms fail to achieve their objectives with CRM implementation and the primary cause of this failure has been cited as cultural issues. Researchers have been giving increased attention to the social aspect of CRM particularly with respect to its impact on the employees. CRM implementation is a change project and several change project models have included leadership factors as critical variables in facilitating change. However; the linkage between leadership and IS implementation has largely been ignored by the IS implementation researchers. This research aims to fill this gap. This research aims to investigate how leadership and culture together effect the implementation of CRM and provide a conceptual framework, which integrates cultural and leadership aspects with CRM implementation. This framework will be useful for researchers and practitioners to develop more effective CRM implementation strategies.

Keywords: Organisational Culture, Leadership Style, CRM Implementation, Competing values framework (CVF).

Abstract No. 202: Saudi Arabian Sukuk Market: Investigation and Evaluation of the Current Trends.

Mohammed Waleed Alswaidan
University of Portsmouth, UK
mhws1981@gmail.com

After the recent financial crisis impact on the financial industry, the risk factor of each financial instrument is the critical measurement for investors. Thus, fixed income securities such as Bonds or Sukuk (Islamic Bonds) addressed the option for lower risk investment. Sukuk is considered as a dynamic investment instrument and has been developed over the recent past. It is catching the investors' interest due to its unique features. This paper attempts to follow the trends and developments in the Sukuk market in Saudi Arabia as it is the heart of the Islamic world. The paper provides a comparison between returns and duration of the Saudi Arabian Sukuk Market against the Global Sukuk Market. Results found that the Sukuk market in Saudi Arabia is the dominant trend of investors in the market and has consistency of positive returns over the period after the recent financial crisis lead to speed up the development in the Sukuk industry around the world.

Abstract No. 206: Family Business Agency Problems, Ownership Concentration and Corporate Performance: Theory and Evidence from Saudi Arabia

Mohammed Alghamdi
m_algm929@hotmail.com

Agency costs, ownership concentration and firm performance are three constructs that have been extensively examined in finance literature. The effect of agency costs and ownership concentration on firm performance, however, remains contested despite the formulation of theoretical propositions regarding the relationship between these constructs. The Saudi Arabia; economy is characterized by large number of family owned businesses, and the significant involvement of the Saudi government in the private sector (non-family firms). However, few studies have investigated family firms in the context of capital market research. This research attempts to fill a research gap on the relationship between separation of ownership and control, as well as ownership concentration and firm performance in one of the emerging markets, Saudi Arabia. Saudi firms are mainly family-owned or state-owned. The research addresses the questions: How can family firms be identified? How does separation of ownership and control affect firm performance? Is there any significant difference in agency costs between family firms and non-family firms? Do family owned firms perform better? How does concentration of ownership affect firm performance, comparing family firms to non-family ones? This study will be implemented through a quantitative approach. Secondary data obtained from published annual statistical data on the financial reports and DataStream database will be analysed to test the impact of agency costs and ownership concentration on firm performance. The focus of the investigation will be firms that are currently listed on the Saudi Stock Market Exchange (SSM). The dataset is a panel of all firms in SSM from 2007-2011 excluding financial firms. This study is very important because the problem of agency costs has not previously been studied in the Saudi context, so this study will contribute to agency theory in family business. It will have practical benefit to Saudi companies and the Saudi government (as a major stakeholder in non-family firms) by identifying agency problems.

Keywords: Agency Costs, ownership concentration, Family firms.

Abstract No. 241: The Role of Stable Behaviour Patterns in Management Accounting Change

Ahmed M Alrajeh
(University of Dundee School of Business)
a.alrajeh@dundee.ac.uk, Tel. 0044 1382384195

Purpose: The paper identifies causes that influence the change and resistance in two case studies which implement an Enterprise Recourse Planning system ERP. It differentiates between intentional and unintentional change or resistance. Method/Methodology: an interpretive approach using two case studies with multiple source of evidence including interviews, document analysis and observation. Findings: The paper explores individual choices and behaviour and the socio-cultural context to identify the factors that influence their action and to determine from an employee prospective on wither the change or resistance of using ERP system is intentional or unintentional. Originality: The paper extends the scope of institutional analysis be explaining how stability influence the resistance and how stability influence the change. This study adds to the knowledge in the literature be showing the relationship between external and internal factors and resistance and change in Saudi Arabia as developing countries. The socio-cultural landscape of the Middle East effect of these influences cannot be ignored when exploring the factors that shape management accounting change.

Keywords: Management accounting, change, resistance, ERP, developing countries.

Abstract No. 280: Exploring the Impact of Transferring Procedural Knowledge and Learning on Distributors' Competitiveness in Saudi Arabia: A process-Based Research.

Esam Halawani
Management School Doctoral Centre, University of Sheffield, UK
e.halawani@shef.ac.uk

This paper explores the process by which procedural knowledge and learning in three different streams (logistics, sales and accounting) is transferred from multinational corporations (MNCs) to their distributors in Saudi Arabia. That is because understanding this process has bearing on understanding the impact of transferred procedural knowledge and learning on Saudi distributors' competitiveness. The paper adopts an "events-and-outcomes" approach to process research favoured by Andrew Van de Ven. Two models from knowledge management (KM) and organizational learning (OL) were selected to execute such approach to study the process concerned. The findings include a universal description of a transfer process that is found contingent upon a range of factors (adopted from literature and emergent) that capture the uniqueness of the relationship between partners in alliance and their contribution to the process. As an outcome, Saudi distributors managed to reap a range of benefits in each knowledge stream among which dynamic capabilities and competitive advantage. The findings of this paper provide valuable advice for the Saudi distributors given the new changes in world trade organizations (WTO) regulations in the Saudi market. Such new agreements allow MNCs to operate in the Saudi market without being obligated to partner with Saudi organization.

Keywords: Joint ventures, competitive advantage, process research, procedural knowledge transfer, Saudi Arabia.

Abstract No. 308: Harnessing Knowledge Management to Improve Performance within Saudi Organisations.

Rafat Amir
rafatamir@gmail.com

The key to understanding the development of competitive advantage is understanding knowledge and how it is managed and shared. Organisations not only need to understand comprehensively the concept of knowledge in order to manage it effectively, but also to create and maintain competitive advantages, especially as the business environment has become increasingly competitive. The aim of this study is to understand how the knowledge management (KM) concept can be harnessed as a vital factor in the enhancement of productivity, performance and the competitiveness of organisations. Grounded theory strategy has been used in this research, which provides in-depth information relevant to KM implementation. Data were collected from face-to-face semi-structured interviews with 24 top managers from 19 different top-ranking companies operating in Saudi Arabia. As a result of analysis of collected data, five major categories emerged: barriers to KM; organisational learning (OL); means of communication; critical successful factors (CSFs); and impacts of KM on organisational performance (OP). The most common barrier to knowledge sharing is the unwillingness of employees to participate and share their knowledge. Moreover, OL is very important and it helps organisations to sustain a competitive advantage and improve the employees' performance and efficiency by encouraging them to learn and share knowledge by creating a good learning environment. A well-structured communication system is a very vital factor for KM success because its role is to ensure and facilitate the passing of knowledge to the appropriate people. Moreover, it found that the most important factor influencing the success of KM implementation is the employees' willingness to participate in KM activities and share their knowledge. This implies that organisation that want to be a knowledge-based organisation by implementing KM activities need to improve the willingness of employees to participate in the project, otherwise it will fail.

Abstract No. 309: Ownership structure and Firm performance: Evidence from GCC countries.

Salman Alresheedi
Hull University Business School, UK
salman_2007@windowslive.com, s.d.alresheedi@2008.hull.ac.uk

This paper aims at looking at whether ownership structure has an impact on firm performance in Gulf Corporation Council (GCC) countries. The data that is used in this study includes 366 non-financial listed firms during the period of 2006-2011. Panel data is used to analyse the impact of ownership structure on firm performance. Fixed effects panel models are employed. The analysis is done using two measures of performance including return on assets (ROA) and Tobin's Q. The impact of firm specific variables such as leverage, GDP growth and firm size, as well as corporate governance variables such as board size, number of executive directors on the board and number of independent directors on the board are controlled for. The different types of ownership structure that are included in the study are: managerial ownership, family ownership, government ownership, institution ownership, foreign ownership and concentrated ownership. Our findings show that when the Tobin's Q is used as a measure of performance, the evidence shows that some of the ownership structure variables have a positive impact on firm performance. For example, managerial ownership, Chairman own share, institutional investors, corporate total own, institutional owner domestic and corporate foreign all have positive effects on firm performance. On the contrary, When Return on Assets (ROA) is used as a measure of performance; the evidence shows that government ownership has negative effects on firm performance in GCC countries.

Abstract No. 320: Financial constraints and firm export: evidence from Saudi manufacturers

Abdullah Al-Sakran
Department of Economics and Finance, Brunel University
abdullah.al-sakran@brunel.ac.uk, alsakran@sfd.gov.sa

This paper studies the impact of financial factors on exports at firm-level. The linkage between finance and firm-level has been tried to find empirical evidence of the association between exporting and firm finance. We fill this gap in the literature using unique firmlevel data conducted for the first time by the Saudi Fund for Development. In this paper, we apply a newly developed estimator to identify credit constrained firms. The study followed economic literatures that classify firms into four categories to understand the characteristics of the firms that fall into each group. We show that younger firms are more likely to be credit constrained than older firms. Furthermore, productive firms are less likely to be credit constrained. Secondly, the results show a negative significant correlation with foreign ownership and with age. Finally, there is a significantly negative effect of rationing on foreign sales, and exports reduce by rationing.

Abstract No. 378: An Investigation Into the Factors Affecting the Destination Image of Holy Places: An Empirical Study of Tourism Destinations in KSA

Bader Almogbel
University of Hull
Higher Education Ministry
baderm10@yahoo.com

Destination image plays a major role in travel decision-making; therefore it is critical to the success of any tourist destination. The destination image formed depends upon several elements and attributes. The image stages are cognitive, affective and conative where cognitive refers to the knowledge a tourist has about the destination, affective refers to the feelings of tourists about the destination, and the cognitive element is the probability a person is likely to visit. A positive image is an incentive for a tourist to visit a destination. Several studies have been conducted in terms of destination image, but few image studies to date have focused specifically on either sacred Islamic places; specifically, Holy places in Saudi Arabia; furthermore, none has measured the image of Holy places in Saudi Arabia that Muslims hold. Two important sites for Muslims are located in Saudi Arabia; millions of Muslims visit these two sites annually to experience Hajj or Umerah, and all leave with potential images formed from different resources they encountered and this image will adapt to reality after visiting. Visitors come from different cultural backgrounds, which can contribute, to the image formation. They travel to these sites with a preformed image about them they have built from information resources. A huge number of visitors during Hajj come to these sites, therefore the demand for services increases during the peak season, which impacts the quality, demand and satisfaction. The Holy places have specific value for Muslims, but the familiarity is dissimilar. The destination image is not fixed, therefore the aim of this research is to measure the potential and real image of Holy places in Saudi Arabia that Muslims hold and also analyse the components which impact that image by focusing on peak seasons. This research is primarily descriptive and explanatory (establishing a causal relationship between variables). The researcher aims to contribute to the destination image literature by finding how the peak season and other factors impact upon the destination image which will in turn help the tourism sector to effectively market a country as a viable tourism destination.

Keywords: Destination Image, Holy places, Pilgrims, Heritage, and Peak seasons.

Abstract No. 388: Understanding Airline's Enterprise Solution Providers Interplay in a Big Bang Implementation

Abdulrahman Aljefri, Adullah Almami
Business school, Plymouth University, UK
ahjefri@gmail.com

Hard rivalry in business nowadays and especially in the Airline sector require airlines to revolutionise ways to attain a competitive advantage. On the other hand, entering the market without a strong IT would render airline competitiveness to be more difficult. Enterprise systems are becoming common in large airlines to enhance their business process. However, when large airline delayed the technology decisions they will be left with limited choice to cope with market pressure to verify their existence. Implementing concurrent enterprise systems might be a viable option. Our focus in this paper is to investigate the interplay between airline enterprise solution providers due to the fact that very scant researches been accomplished in this area. The uniqueness of this kind of deployment in airline sector adds more value to the study and enriches both the academic and business side. We argue here that implementing multi enterprise systems concurrently generates complex phenomenon and need thorough understanding such as their enabler's factor and barriers. A large airline was as a case study; it had over twenty six thousand employees. Five reputable ASPs in the airline industry in various fields were included such as KPMG, Amadeus, SAP, Sabre, and Wipro. Participants in this study were professionals in IT and the airline business, and all were involved in the phenomenon of deploying concurrent multi enterprise systems. The findings provide a deep insight into the phenomenon of having multi enterprise airlines solution provider working together concurrently.

Keywords: Enterprise Systems, IT collaboration, Airline, Multi-Enterprise.

Abstract No. 499: Nonlinear Serial Dependence in Saudi Stock Market: Testing the Weak-Form of the Efficient Markets Hypothesis

Abdullah Ibrahim Al Ashikh
Aberdeen Business School, Robert Gordon University, UK
A.I.H.Al-ashikh@rgu.ac.uk

This paper investigates the existence of nonlinear serial dependence in the returns of one of the largest stock markets in the Middle East and North Africa; the Saudi Stock Exchange (SSE), using set of highly regarded nonlinear tests. In addition, it attempts to validate the weak-form of the Efficient Market Hypothesis (EMH). The results indicate that the Saudi Stock Exchange (SSE) returns exhibit significant nonlinear serial dependence in addition to the linear serial dependence. In addition, the source of nonlinear serial dependence in the Saudi stock market returns has been attributed to nonlinear serial dependence in the conditional variance. Hence, the hypothesis of market efficiency has been strongly rejected based on the results from the nonlinear dependence tests, as it does from the results of linearity tests. Therefore, a conclusion has been reached that the Saudi stock market is inefficient in the weak-form of the Efficient Market Hypothesis (EMH).

Key words: linear and nonlinear serial dependence, Saudi Stock Exchange (SSE), Efficient Market Hypothesis, weak-form.

Abstract No. 504: The Relationship between Corporate Governance and Firm Performance: Evidence From the UK

Raniya Abdullah Alsehibany
raniya82@gmail.com

This study examines the relation between corporate governance structures and firm performance. Two internal mechanisms of corporate governance are investigated, the board of directors' compositions and ownership structures. The sample is FTSE 100 Index for a one-year period, 2010. The data were hand-collected from the Thomson Banker Analytic database and the companies' annual reports. Two firm performance measurements are used as proxies, the market performance measure Tobin's Q and the accounting measures ROA and ROE. Board of directors' characteristics include, board size, independent directors and CEO duality. In addition, two types of ownership structures are examined, managerial and foreign ownership, together with concentrated ownership. The study's empirical results show that only board size among the board characteristics has a positive influence on firm performance. In the case of the second aspect of corporate governance, namely, ownership structures, the findings suggest that both managerial and foreign ownership positively affect firm performance.

Abstract No. 529: Entrepreneurship Support Centres in Saudi Arabia

Saeed S. Algarny, PhD Researcher in Entrepreneurship,
University of Exeter Business School, UK
S.Algarny@ex.ac.uk, www.exeter.ac.uk

Entrepreneurship has recently gained momentum in Saudi Arabia (SA) but without much research to analyse the phenomena. Accordingly, this research aims to explore an important aspect of entrepreneurship in SA by investigating the role of different start-up business support centres (SBSC) in the country. Prior Work Based on the entrepreneurship policy framework developed by Stevenson and Lundstorm (2001), start-up business support services are an essential aspect of the policy framework. Moreover, the European Commission considers them important in assisting entrepreneurs in starting and developing their businesses (European Commission, 2001). Furthermore, there are different support services that could be provided to entrepreneurs, including the following: training, consultation, incubations, financing, and logistic support (such as setting up "one-stop shops" and online portals). However, with the increase in demand for services provided to entrepreneurs, there will be a need to exchange experience and build competencies between researchers, policymakers, and business advisors (Lundstorm and Stevenson, 2005). Approach In addition to secondary data from official reports and the Internet, more than 21 semi-structured interviews were used to collect the primary data from SBSC representatives. This data will be analysed to answer the following questions: 1. what is this centre and to whom is it administrationally linked? 2. What is the centre's definition of entrepreneurs that it targets by its services? 3. What are the services that each centre provides? Results Although the research is still in progress, we can see that these centres are at the crux of entrepreneurship support, and they succeeded in helping thousands of entrepreneurs start their businesses in the last decade. Moreover, they provide different types of services, such as training, consultation, mentoring, and financing. However, a monitoring and control role is either missing or undeveloped. However, the SBSCs work alone without any official cooperation between them. Finally, government support for some of them made big differences in terms of the number of new businesses that have been established.
Keywords: start-up, business Support, centres, Saudi Arabia, entrepreneurship, SME.

Abstract No. 535: A Comparative Study of the Role of Culture & Economy in Employees' Motivation Diversity

M. Bindrees, Prof. R. Pooley
Heriot-Watt University
School of Mathematical & Computer Sciences
Moh.drees@gmail.com, R.J.Pooley@hw.ac.uk

This paper highlights the impact of economy and culture on employees' motivation levels. A comparative approach has been adopted between three well-known countries, Saudi Arabia, China and the UK. These samples were chosen based on the clearly distinctive characteristics among their economies and their cultural variations. Three datasets were used from different studies for each country, and then a non-parametrical statistical approach was followed; both Normality test and Kruskal-Wallis test have been used to prove the diversity and the differences amongst these three datasets. Four-Drive Motivation Theory was used as the theoretical framework of this study. A combination of three datasets was split into four sub-groups, each group should have matched each drive of the Four-Drive theory, and thus, these groups were analysed and discussed independently for the three countries based on the Four-Drive theory concept. The discussion is illustrated graphically and statistically and then the results are described accordingly. Findings: The findings of this study are: the economic situation plays a considerable role in employees' motivation It also has an influence on the distribution of each motivation type among these countries. Limitations: the lack of motivational studies for the selected countries was at the top of the study's limitation; this limitation has led to choosing studies from different periods.

Keywords: Motivation, Saudi Arabia, UK, China, culture, economics, incentives, four drives.

Abstract No. 661: Organizational Justice and Employees Attitudes: the Role of Identification and Culture

Majad Alotaibi
University of Portsmouth- Business School
call902@gmail.com

Borrowing the lens of research on organizational justice, intergroup relations and cultural difference traditions, Hayashi, & Sekiguchi (2012) introduced the concept of Collective justice perception in group-oriented culture. At its heart is a social comparison function. Drawing on their initial concept and social identity literatures, I developed hypotheses about the impact justice-levels perceptions on individual and group attitude and behaviour and the role of identification in this relationship. The label of collective justice perception may include other type of justice such as justice climate; therefore, I tend to labeled it "Collective felt justice" for comparison purposes.

Abstract No. 669: What are the Factors Affecting E-Commerce Adoption in Saudi SMEs? An Exploratory Study

Maher Alhindi
Business School, Portsmouth University, UK
M0540004323@gmail.com, maher.alhindi@port.ac.uk

As part of a comprehensive study of critical success factors of e-commerce adoption by SMEs in Saudi Arabia, this study was conducted to test the factors of the Perceived E-readiness Model of E-commerce adoption designed by Molla & Licker (2005a) and their appropriateness and second, to identify the potential factors that may affect SMEs adoption. A qualitative exploratory study was conducted to collect data using semi-structured interviews from a sample of 13 decision makers from Saudi SMEs. The results confirmed the appropriateness of PERM factors to Saudi Arabia. Additionally, the results indicated other new factors and sub-factors that affect the adoption of e-commerce in Saudi Arabia; delivery issues, banking, credit card issues, education, culture and religious issues. Finally, management system structure was indicated as a new factor that may affect e-commerce adoption.

Abstract No. 674: Corporate Social Responsibility, Tax Aggressiveness and Conformity of Financial-Tax Reporting.

Abdullah Alsaadi, Aziz Jaafar and M.Shahid Ebrahim
Umm Al-Qura University, Makkah, KSA
Bangor University, UK
abpe34@bangor.ac.uk

The paper aims to investigate the association between CSR and tax aggressive strategies and the effect of financial and tax conformity reporting jurisdictions on this association. Using a sample of 3205 firm-year observations domiciled in Europe for the period of 2003-2011, the study finds that firms with high CSR scores are more likely to engage in tax aggressiveness. The results also show that firm headquartered in low financial and tax reporting conformity jurisdictions are more likely to engage in CSR for the purpose of concealing the effects of tax aggressive activities.

Keywords: Corporate social responsibility; tax aggressive strategies; effective tax rates; tax avoidance.

Abstract No. 698: Managing Negative Electronic Word of Mouth: a Study of British Hotels.

Saleh Tawat
Manchester Metropolitan University Business School,
Saleh-ali.a.al-tawat@stu.mmu.ac.uk

There is a wide agreement that electronic word of mouth (eWOM) has a great impact on customers'attitudes purchasing decision and judgments. Additionally, it is suggested that eWOM has a direct impact on companies sales, image and overall the success. The negative eWOM is considered to be even more critical as information seekers believe that it is more honest and useful. However, different researchers have argued the question is not about the importance of WOM but rather how to interact with it. Therefore, this paper aims to explore negative eWOM from organizational prospective. More specifically, it aims build a theory that shows how hotels' managements interact with negative eWOM and suggest general

guidelines that hotels might follow. Thematic analysis was companied with case study in order to conduct this research.

Keywords: eWOM, customers reviews, organisational prospective, response strategy, review sites.

Abstract No. 722: The factors that attract travellers to buy air tickets online in Saudi Arabia.

Saleh Bukhari
Information Systems Evaluation and Integration Network Group (ISEing), Brunel Business School, Brunel University, UK
Saleh.Bukhari@brunel.ac.uk

The purpose of this research is to utilise the existing theories on consumer behaviour and scales within web quality to develop and empirically validate a framework for measuring travellers' web satisfaction and willingness to purchase tickets through airlines' websites. Based on the analysis and synthesis of literature pertaining to e-consumer behaviour, web quality and travel and tourism streams, gaps in the previous research have been identified and a conceptual framework is consequently proposed. A survey is conducted with real travellers from Saudi Arabia and data analysis using factor analyses and structure equation modelling were used to test the relations between constructs.

The study is helpful for decision makers within airline companies to identify the factors that can satisfy travellers when using an airline's own website and influence them to buy e-tickets. Also, it provides open opportunity to conduct similar future studies for different online trading markets and probably different societies.

Keywords: Online consumer behaviour, e-Marketing, e-Commerce, web quality, e-satisfaction, airline, e-ticketing, aviation, travel.

Abstract No. 738: Is the Capital Structure of Islamic Banks different? A Comparative Study with Conventional Banks in MENA countries

Mansour Albarrak & Ahmed A. El-Masry
Plymouth School of Management, Plymouth University, UK

Regulatory capital requirements have been considered as the focal element influencing capital structure of banks. Recent empirical evidence by Gropp and Heider (2010) (in the US and Europe) and Octavia and Brown (2010) (in developing countries around the world) challenge this assumption and prove that classical determinants of capital structure are the main factor in banks. The aim of this study is to investigate the determinants of capital structure in Islamic and conventional banks in the MENA area. This study uses all available Islamic and conventional banks in the MENA region as it accounts for the majority of Islamic banks in the world. We test the determinants of capital structure using panel data models, Tobit and Dynamical model (Arellano-Bover Blundell-Bond). The results indicate that Islamic banks have a different capital structure than conventional banks. We also test the relationship between ownership structure, credit ratings and capital structure. This is one of the first attempts to empirically examine the determinants of capital structure in Islamic and conventional banks in general and in MENA countries in particular. Our results have important implications for investors and policy makers.
Keywords: Capital Structure, Islamic banks, conventional banks, credit ratings, ownership structure, MENA countries

Abstract No. 829: Accountant and Accounting Profession in Saudi Professional Football Clubs

Alhakami, Fawaz
College of sport sciences and physical activities at King Saud University, KSA
Brunel University, UK.
falhakmi@gmail.com

In the last few years, the Saudi government has taken major steps towards developing many peripheral sectors of the economy. One of the sectors that has been receiving much attention and debate within political and media circles is the leisure and sports sector. The football industry has specifically become the subject of long-term planning and several proposed reforms. An example of this is the recent government plans to (part-) privatise professional Saudi football clubs which may indeed have major implications for the future of the industry. The accounting practices and accountant's role is an area that is very likely to be affected by these changes. Hence, understanding the existing nature and scope of the accounting profession and the accountant's role, as applicable to the Saudi football industry, is an important area that needs to assessed and understood if these plans are to be effectively implemented. The major aim of this research is to investigate in detail the nature and scope of the accounting profession within professional football clubs in Saudi Arabia. Specifically, the objectives are to examine the role of the accountant and accounting profession in relation to financial and management accounting issues. The objective is achieved by critically reviewing the existing relevant literature to provide an adequate framework for analysis. This is followed by the investigation of the prevalent current practices through the use of a case-study approach. The data sample comprises three different levels and participants were sought for each level. Level 1 included participants from the policy makers such as the relevant people within the Ministry of Sports and Youth. Level 2 comprised of participants from the relevant accountancy body, namely the Saudi Organisation for Certified Public Accountants (SOCPA). Level 3 included partciapnts from the two case clubs, namely ALITTIHAD and ALHILAL football clubs.

Keywords: Financial accounting, management accounting, football clubs, Saudi Arabia, SOCPA, NPOs.

Abstract No. 842: Motivation in the General Authority of Civil Aviation in Saudi Arabia and its Effect on Job Performance

Saggaf Alaidarous
Business Management

Organisations categorize motivation as one of the substantial and influential functions that they employ to achieve their strategic goals. Highly motivated individuals are satisfied and highly productive (Knights and Willmott, 2007). This paper contains research significance and questions e.g. Does GACA's motivation system contributes to better work performance? The choice of a quantitative, positivist approach for this study is explained, and some preliminary results are included. The General Authority of Civil Aviation (GACA) in Saudi Arabia is the organisation of concern in this study.

Keywords: Motivation, the General Authority, Civil Aviation, Saudi Arabia, Effect, Job Performance.

Abstract No. 860: Financial Development and Economic Growth in Saudi Arabia; Panel Time Series Analysis

Ahmed H. Alabadi
Economics Department, Swansea University, UK
Economic Researcher, Saudi Arabian Monetary Agency, KSA
aalabbadi@gmail.com

The inter-relationship between financial development and real economy has received considerable interest in recent theoretical and empirical studies. However, how the dynamics of the finance-growth nexus applies to an oil-driven economy remains largely under-studied. To this end, this study utilizes a range of disaggregated data and suitable empirical methodologies in a new approach that focuses on the main economic sectors. Using recently developed panel data techniques, such as Westerlund's cointegration tests, Panel Dynamic Ordinary Least Square (DOLS), and panel long- and short-run Granger causality tests, in parallel with well-established time-series techniques for robustness check, this paper seeks to empirically investigate the interrelationship between banking sector development and the main eight economic sectors in the Saudi Arabia over the last four decades. The main findings of the study are that, firstly; a strong relationship between economic growth and bank credit is verifiable by panel and time-series cointegration tests which suggest that the finance and growth relationship is as important in oil-driven economy as in other economies. Secondly, the PDOLS results indicated a varying degree of impact for bank credit on the various sectors with the most pronounced being on the manufacturing sector. Thirdly, the causality tests results are in line with earlier literature on Saudi banking development that suggested Saudi banking followed the passive or "demand-following" approach. However, exception to that exists in the commerce sector where causality seems to also be running from bank credit to GDP. A number of aspects in commercial bank credit activities identified as unfavourable to the development of productive sectors which usually require the commitment of long-term financing. This calls for intensified efforts to deepen and broaden the Saudi financial system and design banking framework that incentivise productive lending.

Keywords: financial development, Economic growth, Banking, Panel time series, PDOLS.

Abstract No. 863: Business and Management Education in Saudi Arabia

Ibrahim Jamal Alharthi
University of Liverpool

Business schools and business education have been criticized and reviewed from many aspects in western countries. The research shed on these reviews and criticism in the context of Saudi Arabia. The paper explored how business schools and management education are viewed and poisoned among other disciplines and in participating in the overall development of the country. The increase in awareness of business management indicates increasing potential for better business schools in Saudi Arabia.

Keywords: Business School, Business and Management Education, Business and Management Practice, perceptions, Saudi Arabia.

Abstract No. 876: Strategic Planning Implementation and its Impact on Service Quality: Case Study of Saudi Universities

Omaima Albadry, Dr. Atul Mishra, Dr. Dababarta Chowdhury
Business school, Plymouth University, UK
University Campus Suffolk, UK
omaima.albadry@plymouth.ac.uk

Strategic management is used in order to improve an organization from its current condition to a more desirable upcoming condition. The current problem in most organizations is not just to use any successful new idea, but how to implement it in an excellent way. The purpose of the study is to report on an in-depth exploration of the process of strategic planning in a Higher Education Institute (HEI) in the Kingdom of Saudi Arabia (KSA) and its impact on the Service Quality (SQ) of Saudi universities and to evaluate the mediating role of Organizational Commitment (OC) in enhancing the strategic plan achievement.

Keywords: strategic planning, service quality, organizational commitment, higher education.

Abstract No. 907: An Overview of the Continuous Improvement Culture in the Saudi Public Sector

Abdullah Alhaqbani
Business school, Plymouth University, UK
alhaqbani1978@gmail.com

Purpose – This paper aims to provide an overview of the continuous improvement culture in the public sector in Saudi Arabia. Design/Methodology/Approach –A general review of a sample of previous works on continuous improvement and its methodologies (Lean, Six Sigma, TQM, Kaizen and BPR) in the public sector. Moreover, a documentary analysis of the Saudi development plan to improve public sector performance will take place in this research. Findings – This paper highlights the importance of the CI culture in the Saudi public sector. Reviewing previous studies in the Saudi public context shows the importance of organisational factors, such as top management commitment, training and communication in implementing CI programmes. Practical Implications – The research has significant practical implications in that it provides general guidelines for top management in organisations to use in reviewing their strategies and determining whether the culture of CI exists in the Saudi public sector or needs more investigation. Value – This paper is significant in that it supports the lack of research in the area of CI in the public sector in general and in the context of Saudi Arabia in particular. It highlights the culture of improvement in the public sector and provides top management with the basic knowledge necessary for reviewing or improving organisational strategies.

Keywords: BPR, Continuous improvement, Kaizen, TQM, Top management commitment, Six Sigma, Saudi Arabia and Public sector.

Abstract No. 928: Proposed model of study for investigating the financial support systems for start-ups in Saudi Arabia

Mohammed Fahad Albasri, Atul Mishra, Daba Chowdhury
Business school, Plymouth University, UK
m.f.basri@gmail.com, malbasri@uopnet.plymouth.ac.uk

Most entrepreneurs, governments and policy makers are determined on creating successful and thriving private sector by increasing the number of prosperous start-ups in their countries. The achievement of these goals and expectations is hugely dependent on the existence of effective financial support systems. This means that scholars and policy makers ought to gain better understanding of the existing financial support systems in order to determine how effective such systems are and how best to alter the, to meet the financing support goals of start-ups and other businesses. Such knowledge and understanding can only be attained by undertaking comprehensive research of the financial support system using research models and approaches that are suitable and effective in providing the best possible results. This paper reviews why research models are important in any research process. It explains why institutional model and the 5Ms - market, money, management, motherhood and macro-meso environment - approach are the best possible options for studying financial support systems in Saudi Arabia. It concludes that adoption of this model will enable the scholars to gain better insight and understanding of the financial support systems in Saudi Arabia and how best to modify or improve them to meet the goals of the entrepreneurs, government and policy makers.

Keywords: research models; financial support systems; institutional theory; 5Ms model.

Poster: Applied Sciences

(Short Abstract only)

Abstract No. 27: Molecular Genetic Analysis of Cancer Metastasis in Drosophila

Nada Ali Alqadri
Applied Science, University of Liverpool
nadaalqadri2011@hotmail.com

Cancer is a disease that is caused mainly by alterations to the cellular genome, which has the effect of altering the function of genes that control the growth and differentiation of cells. Multiple genetic changes are usually required before a normal cell transforms into a cancerous cell. Activating mutations of Ras is one of these genetics changes. Ras proteins play a major role in development of cancer, since they act as a signal switch molecule responsible for regulating the growth of a cell by controlling down-stream effector pathways. In addition to promoting tissue growth and tumourigenesis Ras has been linked to metastasis. MIG-10, Lamellipodin, and RIAM are part of the MRL family of proteins, which act as multi-adaptor molecules; binding to activated RAS/RAP links upstream signalling to MRL-mediated cell migration, signalling, adhesion and growth. Overexpression of the Drosophila MRL orthologue, pico can promote metastasis of Ras-induced tumours generated in the eye imaginal disc. However, the mechanisms by which it elicits this effect are not fully understood. A series of site- directed mutants of pico, which are predicted to affect the ability of Pico to bind to various interacting proteins has been developed. My project aims to examine the effect of these different mutations for their ability to promote metastasis of Ras-induced tumours and to characterize the binding ability of the different mutants by quantitative Mass Spectrometry and Western Blotting.

Abstract No. 39: Identification and Characterization of Novel Potential Cancer Testis CT Antigen Genes in Human Cancer Cell Lines and Tissues

Ahmed Mubrik Almatrafi
North West Cancer Research Fund Institute, Bangor University, UK
passnesma@hotmail.com

Cancer is a leading cause of death worldwide and it is normally diagnosed and treated in the late stages when the cancer cells invade the body and turn into metastasis cells. Treatments can usually include traditional methods such surgery, chemotherapy, radiotherapy, hormonal therapy or a combination of these methods. Improving of cancer diagnose tools and therapeutic treatment at early stages is essential. However, since identified the first member of cancer testis (CT) antigens (MAGE1) in melanoma by Van der Bruggen et al. (1991), CT antigens have become one of the largest areas of cancer research. The selective expression of CTAs in testis and different types of cancer, and blood-testis barrier makes them useful candidates for cancer diagnosis and cancer immunotherapy. In this research, different methods were applied to identify and characterize of novel CT antigen genes including microarray and expression sequence tag (EST). We have used RT-PCR to evaluate promising candidate genes on 21 human normal tissues and 33 cancer cell lines and tissues. Sixteen novel genes of CT antigens were identified, including a recombination hot spot activator PRDM9.

Abstract No. 45: Caenorhabditis Elegans as a Model Organism for Testing Toxicity of Soil Samples Collected from Saudi Arabia

Saleh Alhewairini, Ian R Mellor and Ian R Duce
School of Life Sciences, University of Nottingham,
ssalhowirini@yahoo.com

Toxic chemicals including pesticides can disrupt soil ecosystems by affecting soil dwelling organisms. Nematodes are the most abundant invertebrates in soil and along with micro-organisms are essential for its fertility and sustainability. Nematodes are therefore relevant organisms as ecological indicators to monitor and assess soil toxicants. The free living nematode Caenorhabditis elegans is a model organism that has been successfully used to assess the toxicity of contaminated soil. Previous work has shown that pesticides and other soil contaminants can affect development, growth, viability and pharyngeal pumping in C.elegans. 76 soil samples were collected from air-conditioned (AC) and normal green houses in the Qassim region of Saudi Arabia in September 2012. Soil samples were collected from the cultivated interior of the greenhouse and from control areas which had not been used for growing. The samples were transported to the UK and eluted with distilled water overnight. The aqueous eluate was separated from the soil and was tested by incubation with C.elegans for 1 hour or 24 hours. Toxicty was assessed by observation of behavioural changes or quantified by measuring the rate of pharyngeal pumping. The effects of soil eluates varied but in most cases reduced pharyngeal pumping compared to control (to a maximum level of 37% with soil from an AC greenhouse). Generally the effect of soil from normal greenhouses had less effect on pharyngeal pumping than that from AC greenhouses. Eluates which inhibited pharyngeal pumping, also affected motility in some cases producing complete paralysis. These results show that pharyngeal pumping in C.elegans provides a reproducible and quantifiable assay system to test soil toxicity and has provided novel data on toxicity of soil from Saudi Arabian greenhouses.

Keywords: nematodes, C.elegans, soil toxicity, pharyngeal pumping, green houses.

Abstract No. 53: A novel Alternative Model to Study Neuropathogenesis of Cerebral Neosporosis

Mamdowh Alkurashi[1], Hany Elsheikha[1] & David Haig[1]
[1] The University of Nottingham. School of Veterinary Medicine and Science, UK
m1973@hotmail.com

The apicomplexan protozoan Neospora caninum circulates in nature between bovine and canine hosts as well as other vertebrate species. Until the present study, N. caninum was known to circulate between mammalian species only and was thought to be thus limited by a “species barrier,” which might depend on differences in the parasite virulence traits and the host animal physiology. Herein, we demonstrate for the first time that a strain of Neospora caninum (NC1-Liverpool) was able to infect the invertebrate desert locust (Schistocerca gregaria) with induction of signs of illness in infected locusts. There was a reduction of body weight in a dose-dependent manner. Also, infected locusts showed slow mobility and sickness, which was dose-dependent. Control locusts appeared normal. Live parasites were recovered in tissue cultured from brain homogenates of infected locusts and were maintained successfully for up to 4 months before being stored in Liquid Nitrogen. These findings indicate that locusts could be a useful model to test for neuropathogenic strains and neuropathology and mechanisms of host specificity and tissue tropism. The possibility that N. caninum can cross species barriers may have important public health implications.

Abstract No. 69: Staphylococcus aureus interactions with skin lipid matrix components

Munirah Aldayel
Institute of Integrative Biology, University of Liverpool,
taty_998@hotmail.com

The Staphylococcus genus of Gram-positive cocci contains more than 30 species and several of these are able to cause a large number of infections in humans. S. aureus has the greatest pathogenicity and expresses a diverse array of virulence factors . Staphylococci are residents of human skin and mucosal surfaces, yet there are only limited mechanisms described for their survival in these niches. A recent study by Kenny et al examined the transcriptional impact of linoleic acid on S. aureus strains to identify how the bacterium adapted to membrane toxicity. Survival mutants were also identified. Staphylococcus aureus is an opportunist pathogen that is currently the most common cause of infections in hospitalised patients. The aim of this study was to identify survival mechanisms used by S. aureus for persistence on human skin. We determined sensitivity to the fatty acid linoleic acid and the amino alcohol D-sphingosine to then test the impact of cholesterol on survival from these antimicrobials. Initial results show that S. aureus can use cholesterol to ameliorate toxicity and that cholesterol could act as an alternative membrane stabilising agent to replace its own membrane carotenoid, staphyloxanthin. The lipid matrix of human skin stratum corneum is comprised of an organised arrangement of cholesterol, ceramide sphingoid moiety and fatty acid in a 1:1:1 ratio. We sought to determine the effect of cholesterol on S. aureus. Cholesterol was found to ameliorate the toxicity of antimicrobial fatty acid (AFAs) and sphingosine. We propose that cholesterol has a membrane rigidifying effect that counteracts disorder. In support of this, supplementation of growth medium with cholesterol reduced staphyloxanthin levels in membrane extracts. We have identified genes contributing to the regulatory control of staphyloxanthin transcription in response to cholesterol. In addition we have screened for cholesterol recover mutants and have identified a putative MarR-regulated AFA/cholesterol exporter.

Abstract No. 70: Comparative Genomics of Enterococcus Faecium Animal Strains and Human Strains

Ashwag Y Shami
Intigrative biology, Liverpool University

Background: Enterococci are Gram-positive bacteria that inhabit the gastrointestinal tract of humans and animals as commensal flora. In recent years two species, E. faecalis and E. faecium have become an increasing medical concern by virtue of their ability to gain and spread antibiotic resistance. E. faecium, although regarded as less virulent has emerged as a dangerous nosocomial pathogen such as endocarditis, urinary tract, intra-abdominal pelvic, soft tissue infections. Results: we present comparative genome analysis of three animal strains of E. faecium that isolated from chicken, calf and pig. The animal strains were then compared with the all publicity human strains in the database. Phylogenomics of E. faecium Genomic comparisons were performed to investigate the relationship between animal and human strains of E. faecium. The three animal strains of E. faecium genomes are different in size and the size differences are mostly due to acquisition of horizontally transferred genetic material in the genome. Moreover, comparison of genomes identified putative niche adaptation genes such as carbohydrates utilization genes. Conclusions: mobile genetic elements that horizontally transferred such as bacteriophage, plasmid and transposon are the main differences between animal isolates and human one.

Abstract No. 72: Standardized Applications of Some Chemicals as Bacterial Sanitizing Agents for the Washing of Vegetables

Saleh[1] Al-Amer, Salim Abou-Baker[2]
[1]Ms.c Food Toxicology, Lincoln University, UK;
Food Safety Laboratory, Al-Qassim, KSA
[2]Food Toxicology and Contaminants Department, National Research Center, Egypt

Number of outbreaks of food borne illnesses associated with consumption of fresh vegetables and fruits increased due to the increased demand for fresh produce. Effective and feasible sanitation methods are required to prevent food borne diseases associated with consumption of fresh vegetables and fruits. Therefore the study evaluated the efficacy of some sanitizer solution on reduction of Escherichia coli contaminated fresh vegetables(tomato and cucumber). Fresh Tomato and cucumber inoculated with 10x106 (CFU/g) E. coli were dipped in tap water and sanitizer solutions including chlorine (200mg/L) acetic acid (0.25 % v/v), (0.25 % (v/v) acetic acid followed by 200 mg/L chlorine, H2O2 (5% v/v) and HUWA-SAN(2.5%v/v) for 10 mints. Populations of E. coli were enumerated by serially diluting samples in sterile phosphate-buffered saline and plating onto Violet red bile agar. Dipping in tap water was not effective in reducing E coli contaminated tomato and cucumber. The highest reduction 6 log cycles (99.9999%) in E coli counts on tomato was obtained by treatment with HUWA-SAN (2.5% v/v), H2O2 (5% v/v) and chlorine (200mg/L). However, the reduction with same treatment was 3 log cycles (99.9%) on cucumber. According to these results, HUWA-SAN (2.5v/v) and H2O2 (5% v/v) can be used as a high efficient surface decontamination on vegetables .

Keywords: fresh vegetables, Tomato, cucumber, Escherichia coli, sanitizer solution.

Abstract No. 85: Chaotic Dynamics in Multidimensional Transition States

Ali Allahem[1, 2] and Thomas Bartsch[1]
[1]Department of Mathematical Sciences, Loughborough University, Loughborough LE11 3TU, United Kingdom.
[2] Department of Mathematics, College of Science and Arts, Al-Rass, P.O. Box 53, Qassim University, Saudi Arabia.
mr_ali369@yahoo.co.uk

Many chemical reactions can be described as the crossing of an energetic barrier. This process is mediated by an invariant object in phase space. One can construct a normally hyperbolic invariant manifold (NHIM) of the reactive dynamical sys- tem that can be considered as the geometric representation of the transition state itself. It is an invariant sphere. The NHIM has invariant cylinders (reaction channels) attached to it. This invariant geometric structure survives as long as the invariant sphere is normally hyperbolic. We applied this theory to the hydrogen exchange reaction in three degrees of freedom. Energies high above the reaction threshold, the dynamics within the transition state becomes partially chaotic. We have found that the invariant sphere first ceases to be normally hyperbolic at fairly low energies. Surprisingly normal hyperbolicity is then restored and the invariant sphere remains normally hyperbolic even at very high energies.

Abstract No. 91: Exploitation of Arachnid Toxic Venom Peptides for Sustainable Insect Pest Control

Aishah Mohammed Alatawi
Tabok university
Aishah.alatawi@hotmail.com

A recent European Union (EU) Directive has called for the removal of older pesticides under legislation dealing with pesticide safety. An alternative strategy being developed by the consortium is the use of fusion-based bio-pesticide molecules, comprising an insecticidal molecule linked to a carrier molecule, for the control of insect pests of economic importance. Previous studies have shown that spider venom peptides are toxic when injected into pest insects, however, when delivered orally they are readily degraded in the midgut and not delivered to their sites of action. The group has shown that not only does snowdrop lectin (Galanthus nivalis agglutinin; GNA) exhibit insecticidal properties, but also is able to cross the midgut epithelial barrier and transported systemically throughout the insect. This study aims to use the peptide components of venom from the spider Segestria florentina fused to a carrier peptide as bio pesticides for the control of insect crop pests. To this end eight constructs comprising different venom peptides fused to gna were cloned in E.coli and then transformed into Pichia pastoris as the expression host. Following expression, the recombinant proteins were purified by nickel affinity chromatography. Immunoassay by Western Blotting demonstrated that the purified recombinant proteins were correctly expressed and processed. The large-scale production of these recombinant fusion proteins is currently being optimized to generate sufficient materials to test for insecticidal activity against target insect pests, both by direct exposure through injection and when orally fed.

Abstract No. 92: Exploitation of arachnid toxic venom peptides for sustainable insect pest control

Aishah Mohammed Alatawi
Tabok University, Saudi Arabia
Aishah.alatawi@hotmail.com

A recent European Union (EU) Directive has called for the removal of older pesticides under legislation dealing with pesticide safety. An alternative strategy being developed by the consortium is the use of fusion-based bio-pesticide molecules, comprising an insecticidal molecule linked to a carrier molecule, for the control of insect pests of economic importance. Previous studies have shown that spider venom peptides are toxic when injected into pest insects, however, when delivered orally they are readily degraded in the midgut and not delivered to their sites of action. The group has shown that not only does snowdrop lectin (Galanthus nivalis agglutinin; GNA) exhibit insecticidal properties, but is able to cross the midgut epithelial barrier and transported systemically throughout the insect. This study aims to use the peptide components of venom from the spider Segestria florentina fused to a carrier peptide as bio pesticides for the control of insect crop pests. To this end eight constructs comprising different venom peptides fused to gna were cloned in E.coli and then transformed into Pichia pastoris as the expression host. Following expression, the recombinant proteins were purified by nickel affinity chromatography. Immunoassay by Western Blotting demonstrated that the purified recombinant proteins were correctly expressed and processed. The large-scale production of these recombinant fusion proteins is currently being optimized to generate sufficient materials to test for insecticidal activity against target insect pests, both by direct exposure through injection and when orally fed.

Abstract No. 96: X-Ray Crystallographic Study of free Methionine-(R)-Sulfoxide Reductase from Burkholderia Pseudomallei

Mona Ghonaim Alharbi,
Department of Molecular Biology and Biotechnology, University of Sheffield
manmoon-harbi@hotmail.com

Burkholderia pseudomallei is a class III bacterial pathogen of humans and animals and the causative agent of melioidosis, a disease endemic to South East Asia and Australia. The bacteria are found in contaminated water and soil and spread to humans and animals through direct contact with the contaminated source. The bacteria are also of some concern as a potential agent for biological weapons and biological terrorism. Melioidosis symptoms most commonly stem from lung disease where the infection can form abscess. The effect can range from mild bronchitis to sever pneumonia. As a result, patients also may experience fever, headache, loss of appetite, cough, chest pain, and general muscle soreness. The effect can also be localized to infection on the skin with associated fever and muscle aches. It can spread from the skin through the blood to become a chronic form of melioidosis affecting the heart, brain, liver, kidneys, joints and eyes. Melioidosis can be spread from person to person as well. Up today no sufficient remedy has been known to treat this disease, which encourages many researchers to find out more about Burkholderia pseudomallei. A significant link has been suggested between methionine sulfoxide and pathogen virulence. This work describes X-ray crystallographic of BPSL2418 protein from Burkholderia pseudomallei. The BPSL2418 was cloned, over-expressed and purified from E. coli before being subjected to crystallization trials. The 1.2Å resolution crystal structure of BPSL2418 was solved by the CCP4 programs and revealed a GAF domain function as free methionine sulfoxide reductase. Also crystals structures of the reduced and the substrate-binding forms have been obtained. The structure is composed of six antiparallel β- strands and four α-helices and two loops. This works also obtained in addition to the novel BPSL2418 native, the three x-ray structures of BPSL2418 demonstrate the function of BPSL2418 protein.

Keywords: x-ray crystallography, free methionine sulfoxide reductase, GAF domain, melioidosis, Burkholderia pseudomallei.

Abstract No. 110: Use SSR Markers and Morphological Characteristics for Identification of Date Palm Cultivars, (Phoenix Dactylifera L.) Grown in the Kingdom of Saudi Arabia

Widad Saleem Aljuhani and Alastair Culham
Centre for plant diversity and systematic, University of Reading, Reading, UK
Widad.Aljuhani@pgr.reading.ac.uk
a.culham@reading.ac.uk

Phoenix dactylifera L. is a very important crop in the Middle East, Saudi Arabia is the second largest producer with about 400 cultivars. Identification of these cultivars is usually not possible until fruiting (5-7 years). Molecular markers most reliable, microsatellite markers likely to be useful for discriminating among closely-related individuals. However, SSR markers have not been applied on Saudi dates so far. The objectives of this study were: to examine the ability of microsatellite loci to discriminate between date palm cultivars grown in Saudi Arabia, and combine these with the morphometric characteristics of the vegetative plants. The current study includes large number of cultivars, access to different and important regions of Saudi Arabia. Twenty-nine SSR loci were used to study the genetic patterns, developed by {(Billotte et al,(2004), and Hamwieh et al., (2010)}, following new

information of date palm genomes. Twenty-one morphometric characteristics less affected by environmental conditions were measured, recommended by {IPGR, (2005)}, and data analysis using multivariate analysis PCA and DA. Preparation of an electronic key was based on morphological data and Lucid 3.5 V software. Initial molecular results indicated that eighteen out of twenty-nine microsatellite loci successfully amplified the expected PCR fragments, high polymorphic information content mean 0.6, mean allel 9 per locus of 52 accession, all cultivars under this study were easily distinguished based on only five loci. Genetic distance range 0.00 - 0.9, within cultivar 0.0- 0.1, and between cultivars 0.3- 0.9. Morphological data shows a clear clusters within cultivar, relationship exists between some cultivars. Multi-access key could be detect cultivar, or a small group have diagnostic features. SSR showed unique fingerprints, that could be used to distinguishing among cultivars propagated by offshoots. Some leaf characteristics such as; leaf blade and spine angle had a discrimination power. Multi-access key facilitated dealing with morphological data.

Abstract No. 114: Enhanced Optical Properties of Silicon Quantum Dots mixed with Silver Nanoparticles

Khamael M. Abualnaja
School of Chemical Engineering and Advanced Materials
Newcastle University, UK
k.abualnaja@ncl.ac.uk

Due to unique optical properties of silver nanoparticles, there is a developing interest in their applications. Recently, silver nanoparticles (AgNPs) are extensively used in plasmonics applications and they have been utilized as a light scattering source in solar cells. The enhancement of the optical properties of silicon quantum dots (SiQDs) and their mixtures with AgNPs have been investigated. Scanning electron microscopy (SEM), X-ray diffraction (XRD), atomic force microscopy (AFM) and X-ray photoelectron spectroscopy (XPS) were used in order to study the structural characterization of SiQDs. The results proved that the SiQDs have a polycrystalline structures with an average particle size diameter of 65 nm. The AgNPs were prepared via the photolysis of AgNO3 in sun light, using an anionic surfactant i.e. sodium dodecyl sulphate (SDS) solution at room temperature. The synthesized AgNPs have a polycrystalline structure with an average particle size diameter of 100 nm and 30 nm for two different concentrations (1 & 10 mM), respectively. UV-Vis spectroscopy, Surface Enhanced Raman Scattering (SERS) and confocal photoluminescence spectroscopy were used in order to characterize the optical properties of SiQDs, AgNPs and their mixtures. Raman enhancement is greater for larger AgNPs i.e. the mixture of SiQDs with AgNPs (1 mM) which have an average particle size of 100 nm.

Keywords: Silicon Quantum Dots (SiQDs), Silver Nanoparticles (AgNPs), Surface Enhanced Raman Spectroscopy (SERS).

Abstract No. 131: The Effect of Abiotic Stress on Pseudomonas Putida Using FT-IR Spectroscopy

Ali Sayqal, Royston Goodacre

Efflux pumps are probably the most important mechanisms that play a crucial role in solvent tolerance in Pseudomonas putida DOT-T1E, as they expel antibiotics and aromatic hydrocarbons. Three pumps are involved in solvent tolerance: TtgABC, TtgDEF and TtgGHI. The sudden addition of 0.05% (vol/vol) toluene or 0.2% propranolol (a human b-blocker) to P. putida DOT-T1E, P. putida DOT-T1E-PS28 (lacking TtgGHI pump) and P. putida DOT-T1E-18 (lacking the TtgABC pump) grown in LB medium, in the presence or absence of toluene via gas phase, had a clear effect on bacterial survival. In this study the effect of a particular concentration of toxic solvent or drug on the bacterial cell was examined. Once a solvent is toxic to a cell, it is hypothesised that this toxic substance have a phenotypic effect on the cells even at very low concentration, so infrared (IR) spectroscopy can be used to investigate whether the phenotype of an organism has changed by exposing it to different levels of toxic solvents. This would allow us to establish the foundation for MS-based metabolomics experiments that could be used to study metabolites at particular time points following toxic perturbation. The collected data from gas chromatography-mass spectrometry (GC-MS) and liquid chromatography-mass spectrometry (LC-MS) will then be analysed by chemometrics techniques in order to interpret the results and elucidate the mode of action and the role of specific efflux pumps.

Keywords: Pseudomonas, putida, FT-IR, TtgABC, TtgDEF.

Abstract No. 143: Optimization of Matrix Assisted Desorption/Ionization Time of Flight Mass Spectrometry (MALDI-TOF-MS) for Bacillus characterization

Nagla AlMasoud, Yun Xu, Nicoletta Nicolaou and Royston Goodacre
Manchester institute of biotechnology, University of Manchester
nnn9992@hotmail.com

Identification of intact bacteria from biological samples has traditionally involved cell culturing, staining and the use of various microscopes. These approaches are usually very laborious, time consuming and costly but most importantly cannot detect the microorganisms' phenotype. More efficient approaches are therefore required for the bacterial identification and characterisation of such samples. Many analytical techniques such as electrospray mass spectrometry (ESI-MS) and matrix assisted laser desorption/ionization time of flight spectrometry (MALDI-TOF-MS) have been explored in an attempt to improve these shortcomings. This work focused on the identification of 34 Bacillus strains using MALDI-TOF-MS. The technique employed in combination with chemometrics appears to provide high-throughput, robust results and is also very rapid and sensitive. Moreover, the technique is able to distinguish between Bacillus bacteria at the species level. The two different prediction models used on the spectral data gave overall accuracies of 76.29% and 87.06%.

Abstract No. 163: Reactions of TiO2 with Urea towards Anion Doping

Mrs Khadijah Mohammedsaleh M Katubi
Faculty of Science and Engineering at the University of Hull
kutbi707@gmail.com

TiO2 is a semiconductor used as photocatalyst for water purification and water splitting due to its efficient photo-activity, high stability and law cost. However, due to its large band gap (Eg =3.2 eV), TiO2 only absorbs in the Ultraviolet (UV) range. It has been suggested that anion-doping induces band narrowing and better the visible light response See Figure 1. Urea decomposes giving out NH3 and is, therefore used as for N3− doping. However, other decomposition products form at the same time, depending on temperature and atmosphere. In this project, TiO2 was reacted with urea at 400 °C in air and N2. Preliminary results indicate the formation of the novel series TiO2−x(CN2)x. FT-IR spectra illustrates the presence of peaks for (CN2)2− indicating the possibility of formation of TiO2−x(CN2)x. PXRD patterns show anatase phase maintained after the doping by nitrogen no visible impurities are formed anatase unit cells may expand as a consequence of doping. UV-Vis spectra shows a shift towards the visible range narrowing in the band gap (Eg) or TiO2 reacted with urea. We reacted TiO2 samples with urea at 400 °C in air and N2 gas. Preliminary results indicate that the new series TiO2−x(CN2)x was prepared. The new compounds show a narrower band gap (Eg) than TiO2. Further sets of reactions at different temperatures confirm these findings.

Abstract No. 167: Reduction and Duplication Methods for Improving Systems

Safar M. Alghamdi, David F. Percy
Salford Business School, University of Salford
s.m.alghamdi@edu.salford.ac.uk, d.f.percy@salford.ac.uk

There are two main methods for improving a system's design. The first method is reduction, which involves improving the reliability of the system by reducing the failure rate by a factor for some of the system components, where (0, 1). This can be achieved by replacing standard components with more expensive, higher quality components. The second method for improving a system's design is redundancy duplication, which involves adding extra components in parallel to existing system components. There are three ways to add extra components to the system: hot duplication; cold duplication with perfect switch; cold duplication with imperfect switch. Sometimes, and for many different reasons such as high cost and space limitation, it is impossible to improve the reliability of the system by the redundancy duplication method. Reliability equivalence factors refer to the factors by which the failure rates of some of the system's components must be reduced in order to reach equality of the system reliability with that of a better system. The aim of this study is to apply reliability equivalence techniques to a parallel-series system comprising several parallel subsystems connected in series. The lifetimes of all system components are assumed to be independent and identically distributed, according to a generalized quadratic failure rate distribution. Four different methods are used to improve any such system: (a) reduction; (b) hot duplication; (c) cold duplication with perfect switch; (d) cold duplication with imperfect switch. Two measures for comparing system improvements are considered in this paper, survival reliability equivalence factors and mean reliability equivalence factors. Numerical examples are presented for a specific parallel-series formulation, to illustrate how to apply the theoretical results and demonstrate the relative benefits of various system improvements.

Keywords: Parallel-series system, generalized quadratic failure rate distribution, reliability equivalence factor, reduction method, duplication method.

Abstract No. 175: Inference for Natural Language

Amal Mohammah Alshahrani
School of Computer Science, Manchester University,
Manchester, UK
amal.alshahrani@gmail.com

To develop an inference engine for natural language is the main aim of this study. Several approaches for natural language inference (NLI) have been proposed in recent years. These approaches range from shallow approaches (e.g. lexical overlap, pattern matching, and distributional similarity) to deep approaches (e.g. semantic analysis, lexical world knowledge and logical inference). However, each approach has a number of restrictions and complications; for instance, shallow approaches are limited by their failure to represent semantic structure. On the other hand, the full and accurate translation of natural language into formal representations of meaning presents countless thorny problems such as ambiguity when using the deep approaches. To remedy these deficiencies, we will investigate a particular way to combine and capture the commonalities of both approaches to take advantages of them. Our approach therefore starts with the pre-processing step from the pattern matching (shallow approach) in order to produce dependency trees for input natural language expressions rather than translate them to logic, since this is a very challenging task. We then intend to follow the logical inference (deep approach) rather than doing pattern matching because of its failure to represent semantic structure. A novel fact of the current work is to follow deep approaches in doing inference by backward chaining, but to do so over dependency tree rather than on standard form. Backward chaining could be done with rules that have dependency trees as their antecedents and consequents, but in general the trees that are naturally obtained by dependency parse are not in quite the right format. So we need to generate transfer rules to get them in the right format. We are going to do normalisation, which is translation from natural language into another format to be more suitable for whatever theorem prover we decide to use.

Keywords: Inference, Natural Language Processing.

Abstract No. 195: Bayesian model assessment for stochastic epidemic models

Muteb Alharthi
School of Mathematical Sciences, University of Nottingham
Pmxma16@nottingham.ac.uk

Poor fit of a statistical model to data can result in suspicious outcomes and misleading conclusions, therefore it is of importance to seek for a method to assess the quality of fitting a stochastic epidemic model to some set of epidemiological data. The most well-known stochastic model for the transmission of infectious diseases is considered, that is the SIR (Susceptible - Infective - Removed) stochastic epidemic model. We introduce Bayesian inference and MCMC methods for the SIR model where temporal data are available. Then, a new simulation-based goodness of fit method is presented. This method explains whether or not one can identify the infectious period distribution based on some removal data using the idea of posterior predictive distribution. Moreover, some interesting asymptotic properties for the posterior predictive distribution are derived when the size of population gets large.

Keywords: The SIR model; Bayesian inference; Markov chain Monte Carlo (MCMC); Goodness of fit; the posterior predictive distribution.

Abstract No. 200: Synthesis of Chiral BODIPY Dyes for Applications in Enantioselective Sensing

Rua B. Alnoman*, Dr Julian. G. Knight and Dr Michael. J. Hall
School of Chemistry, Newcastle University, UK

Boron dipyrromethenes (BODIPYs) have found extensive use in imaging and sensing due to their fluorescence properties.1 It is perhaps surprising that there are very few reports of the use of chiral BODIPY species for enantioselective applications.2 Therefore, this project aims to synthesise functionalised chiral BODIPYs and explore the use of these compounds for enantioselective sensing. We have investigated four approaches to the synthesis of chiral BODIPY dyes.

1) In the first part of this project, 3,5-dibromo-8-(4-methylphenyl) BODIPY and 3,5-dibromo-8-(2-pyridyl) BODIPY were synthesized successfully, followed by Suzuki coupling reaction to give the corresponding 3,5-bis-(2-methoxyphenyl) BODIPY dyes. Finally, double demethylation of the aryl ether with concomitant cyclization of the resulting phenol onto the boron gave the chrial C2-symmetric polycyclic BODIPY derivatives in good yields.

2) The 3,5-dibromo-8-(4-methylphenyl) BODIPY show excellent reactivity towards mono-nucleophilic aromatic substitution. Reaction with (S)-a-methylbenzylamine leads to the chiral 3-aminoBODIPY compound.

3) 2,6-Bis(2-methoxyphenyl) BODIPY was synthesized in 25% yield via Suzuki coupling reaction, by coupling of the corresponding 2,6-dibromo BODIPY with 2-methoxyphenyl boronic acid. 19F NMR of the product indicated that a mixture of diastereoisomers was formed, corresponding to compounds in which the methoxy groups are either syn- or anti- to each other. The anti-arrangement is chiral and C2-symmetric.

4) Axially chiral, unsymmetrical 8-(quinol-8-yl)-2-phenyl-1,3,5,7-tetramethyl BODIPY was synthesized in 58% yield via Suzuki coupling reaction, by coupling of the corresponding 2-bromo BODIPY with phenyl boronic acid.

Abstract No. 215: High Open-Circuit Voltage Bulk-Heterojunction Solar Cells by Using New Dendritic Acceptor Material

Thamraa. Alshahrani, A. El-Betany, M. Mabrook, H. Tai and N.McKeown
Electronic Enginerring Departement, Bangor University,UK,
t.alshahrani@bangor.ac.uk, m.f.mabrook@bangor.ac.uk
Chemistry Departement, Bangor University,UK,
alaaelbetany@gmail.com, h.tai@bangor.ac.uk
Chemistry Department, Cardiff University, UK,
mckeownnb@cardiff.ac.uk

Light harvesting solar cells and energy transfer are currently of great challenges for the 21st century in the field of solar cells energy. Academic and industrial scientists are searching for a detailed understanding of light harvesting and find tools to control the electron transfer between donor and acceptor molecules. Due to their electronic properties and the ability to tune their absorption ranges, conjugated dendrimers combined with polymers are used extensively in the formation of the active layer (donor- acceptor) in organic photovoltaic [1]. Dendrimers and hyperbranched polymers are considered to be the leading materials used in the application of organic solar cells. They are low viscosity with high molecular weights, good solubility and mutifunctionality. Dendrimers are perfect monodisperse macromelcular (tree-like structures) with high branched three-dimensional structures: core, branches, and end groups [1, 2]. Organic bulk-heterojunction structure (OBHJ) consist of donor and acceptor (active layer) blend together deposited between two electrodes in order to gain a large interface area between donor and acceptor [3]. However, charge mobility through the OBHJ active layer strongly depends on the morphology of surface of the active layer. thus, dendrimers materials with their small size and monodisperse nature leads to a high degree of ordering in organic solar cell devices and thus high carrier mobilities [2, 3]. Many reports indicate derivatives of 1,8-naphthalimide based on PAMAM dendron have highly efficient as an acceptor in light harvesting dendrimers [4, 5] while the Poly (3- hexylthiophene) (P3HT) possess brilliant efficiency as donor material due to its low band-gap in photovoltaic applications. This paper reports on the application of a new PAMAM dendritic molecule (G0.5), with chemical structure shown in Fig. 1, (UV absorbance at 445 nm, and Fluorescence emission at 512 nm in MeOH) as the acceptor material within OBHJ solar cell in order to improve their performance and morphology, with P3HT was used as the donor material. The structure resulted in much improved surface morphology, as shown in Fig. 2, and enhances the charge mobility. It was also observed that the OBHJ structure shows high open circuit voltage of about 1 V and a short circuit current of 2x10-3 mA/cm2 as shown in Fig. 3, which leads to much improved photovoltaic behaviour. The results show that the new PAMAM dendritic wedge is a promising acceptor for high performance BHJ solar cells.

Abstract No. 231: A Comparison Study for Three Numerical Schemes Applied to the Diffusion-Reaction Equation

Aisha Alqahtani
Department of Mathematics
Heriot-Watt University, Riccarton, Edinburgh EH14 4AS, UK
ama62@hw.ac.uk

The purpose of the study is to show the accuracy and efficiency of three numerical schemes which have been applied to a linear system of ordinary differential equations (ODE). This system of ODE's came from the transformation of a well-known Partial Differential Equation (PDE) from the area of reaction-diffusion systems (the non-linear one-dimensional parabolic partial differential equation called Allen-Chan equation). In order to achieve this aim, we did the spatial discretization using the finite difference method. Afterwards, the following schemes : the Exponential Time Differencing method (ETD), the semi-implicit Euler method, and the (ETD) with Krylov subspace technique for computing the matrix exponential have been applied for solving the linear system of (ODE) and then presented some numerical results. Based on that we compared our results to specify which of these schemes is the best on accuracy and efficiency. In the (ETD) scheme we implemented our code in the MATLAB function expm while we used the function phiv of the Expokit package when we have evaluated the matrix exponential using the Krylov subspace method. On the implementation our aim is to get the order of convergence in time of the three methods for getting the solution of this problem and to plot the error versus different time steps. Based on this, the three methods can be compared fairly. In conclusion, we found that all schemes show convergence rates of and the (ETD) is the most accurate and efficient method compared to the other schemes. It has a small computational cost, so it outperforms the semi-implicit Euler method and the (ETD) using Krylov technique.

Keywords: Allen-Chan equation, numerical schemes, differential equations, ODE, MATLAB, Krylov subspace method, ETD, semi-implicit Euler method, matrix exponential

Abstract No. 247: Copper and Cellulose-Stabilised Copper Nanoparticles

Nadiyah S. AlAhmadi, Fei Cheng, Jay Wadhawan and Stephen M Kelly*
Department of Chemistry, University of Hull, UK
s.m.kelly@hull.ac.uk

The green synthesis of stable copper@cellulose nanocomposites and stable copper nanoparticles was carried out using a simple reduction method. Mixtures of copper and copper oxide nanoparticles were synthesised by reduction of copper ions used a strong reducing agent, sodium borohydride, in aerobic condition at room temperature. The natural substrate cellulose was used to stabilise and solubilise the copper nanoparticles in stable aqueous colloidal solutions. The physicochemical properties of copper as free nanoparticles and as cellulose-stabilised nanocomposites have been investigated. PXRD was used to identify the structure and lattice type of the copper nanoparticles. UV/visible reflectance spectra reveal how the presence of cellulose impacts on the nanoparticles size: a blue shift in peak position is observed in the case of copper@cellulose nanocomposites, i.e., the presence of cellulose reduces the size of copper nanoparticles formed.

Keywords: Nanocomposites; Copper; Cellulose; Green synthesis.

Abstract No. 250: Synthetic Approaches towards 1,4-Hydroquinone and 1,4-Quinone Containing Natural Products

Abrar Bayazeed
School of Chemistry, Newcastle University, UK

In this project we have examined the development of synthetic routs towards bioactive natural products that include 1,2,3,4-subsituited aromatic in their structures. Examples include 1,4-hydroquinone and 1,4-quinone containing molecules shown below (Fig. 1).

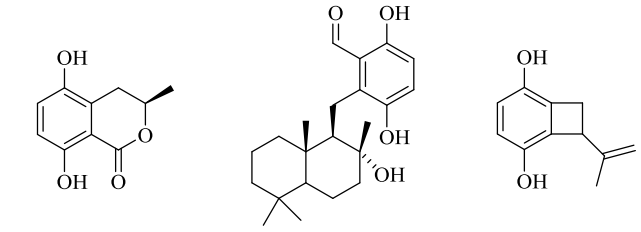


Figure (1): Natural products including the 1,4-hydroquinone moiety.

1,2,3,4-aromatic substitution patterns are challenging to synthesise. Therefore, we have examined several approaches to this substitution patterns including the unusual bromination of 2,5-dihydroxybenzaldehde (5) (Fig. 2).1,2

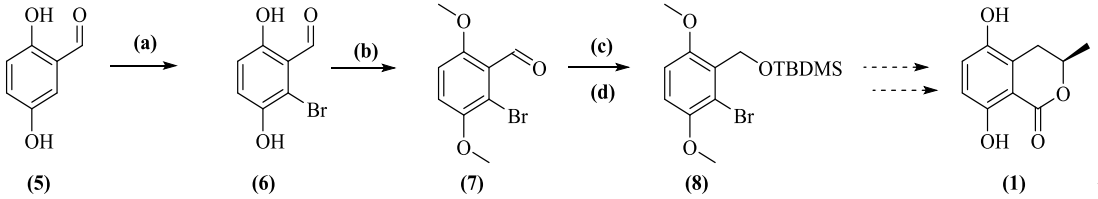


Figure (2): Total synthesis of (3R)-5-hydroxymellein.

Reactions conditions: a) Br2, CHCl3, rt, 2.5 hr, 99%. b) MeI, K2CO3, TBAB, THF, DMF, 40 C°, 24hr 71%. c) DIBAL-H, toluene, 98%. d) TBDMSCl, imidazole, DCM, rt, 24 hr, 95%. We have functionalised 2-bromo-3,6-dihydroxybenzaldehyde (6) through methylation followed by reduction of the aldehyde and subsequent protection to give (8). Further reactions are being investigated for the production of (3R)-5-hydroxymellein. In addition, further chemical transformations of (6) have been investigated to expand the carbon skeleton such as Wittig reactions, reductions and halogen-metal exchange.

References:
Hu, Y., Li, C., Kulkarni, B., Strobel, G., Lobkovsky, E., Torczynski, R., and Porco, J. (2001) Exploring Chemical Diversity of Epoxyquinoid Natural Products: Synthesis and Biological Activity of (−)-Jesterone and Related Molecules, *Organic Letters*, Vol. 3, No. 11, 1649–1652.
Wang, Z., Dai, M., Park, P., and Danishefsky, S. (2011) Synthetic studies toward (+)-cortistatin A, *Tetrahedron*, Vol. 67, NO. 52, 10249–10260.

Abstract No. 270: Investigation of the Intermolecular Diels-Alder / Intramolecular ene Reactions

Matokah M. Abu Al-Naja* and Dr. Michael J. Hall
School of Chemistry, Newcastle University, UK
matokah.abu-al-naja@newcastle.ac.uk

Abstract- Diels–Alder reaction is one of the most fundamental synthetic transformations in organic chemistry for the construction of highly complex natural product scaffold with up to four contiguous stereocenters. Within this field, our research group have investigated the D-A reactions of 4-vinyl-imidazoles to target structures related to marine alkaloids.1,2 In this project we plan to examine the sequential D-A/ene reaction of substituted vinyl-indoles. The aim of which was to obtain bioactive molecules, based on the pyrrolo [3,4-a]carbazole-1,3(2H)-dione framework (Scheme 1). Scheme 1: Proposed Diels-Alder/ene reaction of -3-alkenyl-indoles. Initially we studied the influence of different reaction conditions on the rate of the [4+2] cycloadditions of easily prepared protected 3-alkenyl-indoles. Indole-3-carboxaldehyde was protected using p-toluenesulfonyl chloride followed by conversion to 1-tosyl-3-alkenyl-1H-indoles (2a-b) via a Wittig reaction. The Diels-Alder adducts 3a-3b were synthesised from the reaction of the corresponding 1-tosyl-3-alkenyl-1H-indoles (2a-b) with N-methylmaleimide 1. Scheme 2: Intermolecular D-A reaction of two different dienes We found that, diene 2a gave the desired cycloadduct 3a in 65% in 48h. However with the more hindered diene 2b the rate of the cycloaddition was slower and the yield of 3b obtained was only 7 % under the same reaction conditions. We are currently investigating the optimisation of the Diels-Alder reactions of compound 2b and examining the subsequent ene chemistry.3.

1. Cotterill, L.J.; Harrington, R.W.; Clegg, W.; Hall, M. J. J. Org. Chem. 2010, 75, 4604
2. Watson, L.J.; Harrington, R.W.; Clegg, W.; Hall, M. J., Org. Biomol. Chem.; 2012, 10, 6649
3. Gioia, C.; Hauville, A.; Bernardi,L.; Fini, F.; Ricci, A. Angew. Chem. Int. Ed. 2008, 47, 9236

Abstract No. 284: Use of the Arabidopsis MAGIC Population to Identify Genes Involved in Phosphate Use Efficiency

Azizah Nahari

Phosphate (Pi) is one of an essential macronutrient for plant growth and development, and it plays a central role metabolic processes in plants, particularly photosynthesis and respiration. With increasing human population leading to subsequent increasing request on agricultural production, and as the peak in global production occurs in the next few decades, phosphate (Pi) is receiving more attention as a non-renewable resource. Applications of chemical Pi fertilizers manure to agricultural land have improved soil Pi fertility and crop production, but caused environmental damage in the past decades. In order to reduce agriculture's over-dependence on unsustainable Pi fertilizers, it is important to understand the biochemical and physiological mechanisms of plant Pi uptake and uses, in addition to understanding how these parameters affect the phosphate use efficiency (PUE) of a plant which will lead to the development of rational strategies and molecular tools for engineering nutrient-efficient. In this project, I have focused on PUE in the Multi-parent advanced generation inter-cross (MAGIC) population, which maximise genetic diversity in a manageable number of lines created by intercrossing 18 parental lines of Arabidopsis thaliana. Additionally, I developed a robust method to grow plants reproducibly in different conditions of phosphate availability in hydroponic system as well as developed robust analytical protocols to analyze quantitatively for different parameters that contribute towards the calculation of phosphate use efficiency. I have validated this method with all parental lines that underlie the mapping population. As a result of these experiments, I further refined

the growth conditions for the testing of the inbred population and I have started to process the 527 recombinant lines that comprise the mapping population. Finally, I aim to identify the responsible quantitative loci, which is involved in PUE, by using QTL mapping.

Keywords: PUE, Arabidopsis, MAGIC population, Pi content.

Abstract No. 293: Groups and Fields with Count Function

Omaima Alshanqiti
Department of Mathematics, The University of Manchester
omaima092011@hotmail.com

A count function is a version of what T Scanlon and J. Krajicek call a strong Euler characteristic; in effect, it is a non-trivial strong Euler characteristic with values in an unital linearly ordered semiring. I will discuss some results about groups with count function (which we call tallied group), in particular the following version of the celebrated Frobenius theorem for finite groups. Let G be a group with a count function. Assume G is a tallied Frobenius group with a definable Frobenius complement H and the Frobenius kernel K. In addition, assume that H contains an involution, that is, An element of order 2. Then (1) K is a definable normal subgroup of G. (2) K is an abelian group. (3) H contains exactly one involution. Frobenius proved this theorem using character theory. However, the concept of strong Euler characteristic and its stronger version, count function, provides sufficient tools for counting arguments which allow getting the same result in a model-theoretic context.

Abstract No. 296: The Association between Vitamin D and Type 2 Diabetes Mellitus - Meta-Analysis

Hend Alharbi, Brijesh Tiwari,
Hollings Faculty of Food, Manchester Metropolitan University
hend_faisal@hotmail.com

Vitamin D has is a vital nutrient for a wide range of body functions. Similarly, many reports are available suggesting the correlation between levels of vitamin D in the body and its relationship to type 2 diabetes. The objective of this study was to examine the association between vitamin D intake and the risk of developing type 2 diabetes mellitus. This study on the association between vitamin D and type 2 diabetes mellitus is a systematic review of the published literature on the methods and reports of meta-analyses in observational studies using electronic databases. The results from forest-plot analyses showed that 64% of people with a deficiency in vitamin D were more likely to develop type 2 diabetes (OR 0.64) and the confidence interval (CI) was in the range of 0.42 to 0.89. The calculated P value for this was highly significant ($P < 0.0001$). As the results from forest-plot analyses implied a 64% chance of developing type 2 diabetes in people with a deficiency in vitamin D, it was clear that most of the studies selected have shown favourable effects in experimental groups, as compared to control groups. There is evidence from observational studies that vitamin D supplementation in adults might be protective against the development of type 2 diabetes. Further research should focus on the effect of vitamin D supplementation on both insulin secretion and sensitivity, and on optimum serum levels of vitamin D, above which type 2 diabetes is likely to develop.

Keywords: vitamin D, calcium, type 2 diabetes, 25(OH)D, deficiency, nutrition and health.

Abstract No. 302: Development of a Monolith Based Immobilised Lipase Microreactor for Biocatalytic Reactions in a Biphasic Mobile System

Mohammed Alotaibi , Stephen Haswell
Department of Chemistry, University of Hull, UK
M.T.Alotaibi@2011.Hull.ac.uk

The production of a stable enzyme functionalised silica monolith will be presented for flow reaction chemistry. The macroporous silica-monoliths were prepared from two precursors, tetramethoxysilane (TMOS) and tetraethyl orthosilicate (TEOS) to produce a range of surface areas 222 m2/g to 529 m2/g which where subsequently functionalised with commercially available Candida antarctica lipase (CAL). To evaluate the lipase activation, the hydrolysis of 4-nitrophenyl butyrate was performed in flow mode using a mobile water-decane biphasic system. To evaluate the performance of the immobilised lipase and free lipase reactions were also carried out. Both free and immobilised lipase reactions were evaluated at over extended run times and elevated temperatures. The kinetic studies performed for the homogeneous catalyst showed that the initial velocity was increased linearly with increasing the amount of free lipase. The amount of CAL immobilized was calculated to be in the range 8.16 mg to 9.2 mg. A comparison kinetic study between homogeneous lipase and immobilized lipase was carried out. The results obtained showed that the affinity of free lipase to the substrate is much higher than the affinity of immobilized lipase to the substrate for all the catalysts which was expected. However the turn over number of immobilized lipase in some cases was higher by three times than the homogeneous catalyst. It was found therefore that microreactors (silica monolith) with small average pore diameter 1.15 μm gives higher activity than the homogeneous catalyst. An important application for the methodlogy developed is the production of enzyme catalyzed biodiesel production. The efficiency of immobilized lipase microreactor in transesterification of tributyrin with methanol to yield methyl butyrate has also been examined and the conversion of tributyrin was monitored using High-performance liquid chromatography. Initial results for the conversion of tributyrin with methanol to yield methyl butyrate will be presented in the poster.

Abstract No. 314: Development of Chromatographic Methods to Follow Heterogeneous Organic Chemistry in Aerosols

Ahmed Hameed[1], Andrew Horn[2], Carl Percival[3]
[1] University of Manchester, School of Chemistry, University of Manchester, UK
ahmed.hameed@postgrad.manchester.ac.uk
[2] University of Manchester, School of Chemistry, University of Manchester, UK
andrew.b.horn@manchester.ac.uk
[3] University of Manchester, School of Earth, Atmospheric and Environmental Sciences, University of Manchester, UK
carl.percival@manchester.ac.uk

Octanal aldol reactions in sulfuric acid solutions have been measured as a proxy for an important class of organic aerosol reactions. The evolution of five species have been followed over a range of acidities (65%, 60%, 55% and 50%). Several analytical techniques were used to quantify and identify separate components of a mixture. HPLC, GC/FID and GC/MS were the main techniques of this study. Previously it was thought the trimer in octanal reaction with 65% H2SO4 is (1–heptyl–2,3–hexyl penta–1.3–diene) but actually it has demonstrated as 1,3,5-trihexylbenzene. This has been identified by Nuclear magnetic resonance (NMR). Contrary to previous reports in the literature, it appears that the initial reaction is very fast, producing a dimer, trimer and tetramer. The dimer is lost over time at a rate which scales with increasing acid concentration. The evolution of the composition over long times, previously described to trimer formation, is in fact due to acidic degradation to carbonaceous deposits of unspecific composition. The loss of long-chain aldehydes may therefore be a signficant atmospheric sink.

Keywords: octanal, sulfuric acid, analytical techniques (HPLC, GC/FID, GC/MS and NMR), dimer, trimer and tetramer.

References:
U. Pöschl, 2005. Composition, Transformation, Climate and Health Effects. Atmospheric Aerosols, 44 and p. 7520 - 7540.
Pietrogrande, M.C. and D. Bacco, 2011. GC-MS analysis of water-soluble organics in atmospheric aerosol: response surface methodology for optimizing silyl-derivatization for simultaneous analysis of carboxylic acids and sugars. Anal Chim Acta, 689 and p. 257-64.

Abstract No. 316: Comparison of Silica Monoliths Fabrication and C18 Phase Surface Modification Using Microwave and Conventional Heating Methods

A.K.Khattab[1], Thomas McCreedy[2], S.J.Haswell[3]
Department of Chemistry, University of Hull, UK
amin_kh@live.com

Analysis of drugs in biological samples is growing in importance. However, biological materials are complex and may contain other organic compounds with similar properties to the analytes of interest. For this reason, sample pre-treatment is usually necessary to extract, isolate and concentrate the analytes of interest from complex matrices, because most analytical instruments cannot handle the sample matrices directly [1, 2]. The results indicated that the monoliths obtained using microwave heating gave an average pore volume of between 1 and 1.4 cm /g and a surface area between 333 and 574 m2/g compared to an average pore volume of between 0.92 and 0.99 cm /g and surface area between 460 and 513 m2/g for thermal heating based monoliths. Scanning Electron Microscopy (SEM) confirmed similar structures for both the microwave and conventionally generated silica monoliths were obtained. It was found however, that microwave based fabrication offered a significantly more rapid (11 min) gelation process, compared to those obtained using the thermal heated oven methodology (4320 min). In addition using microwave heating for C18 phase modification of silica monoliths showed very good extraction efficiency between 97 and 111% and reproducibility between (2 and 5.3 CV%). The time of C18 phase modification for silica monolith column using microwave heating (40 min) was much shorter than that monolithic column using conventional thermal heating (550 min). Finally, examples will be presented on how the formation and C18 phase modification of silica monolith using microwave heating has been found to offer a more superior column for the rapid and efficient extraction of caffeine and eserine compared to conventional oven based methodology with a reduce processing times.

REFERENCES:
[1] Hiroyuki Kataoka, Recent Advances in Solid-Phase Microextraction and Related Techniques for Pharmaceutical and Biomedical Analysis, Current Pharmaceutical Analysis, 2005, 1, 65-84.
[2] Akira Namera, Akihiro Nakamoto, Takeshi Saito, Shota Miyazaki, Monolith as a new sample preparation material: Recent devices and applications, J. Sep. Sci. 2011, 34, 901–924.

Abstract No. 323: Nanoparticles and their effects on plants

Wael Obaid, Ian Colbeck, and Tracy Lawson
School of Biological Sciences, University of Essex, UK

Nanotechnology is one of the fastest growing and most promising technologies in advanced societies. However little is known about the possible impacts of engineered nanoparticles (ENPs) on the environment. Some will interact with terrestrial ecosystems and be taken up by organisms which may affect their physiological function. Silver nanoparticles (Ag NPs) are one of the most widely used ENPs and are included in a large number of products such as textiles due to their antimicrobial activities. The increasing use of ENPs is raising concerns regarding the potential toxic effects of ENPs on plants. Chlorophyll a fluorescence imaging system is a rapid and non-destructive method that can be applied to assess changes in photosynthetic performance of plants caused by stress. In order to evaluate the effects of methoxy-polyethylene glycol capped silver nanoparticles (cAg NPs) Lemna, and Arabidopsis were selected as model plants and the effect on photosynthetic performance was assessed. Additionally the effect of cAg NPs on seed germination in Arabidopsis was explored. Generally, the study indicates two main findings. (1) No effects on either the maximum quantum efficiency of PSII photochemistry (Fv/Fm) and the operating efficiency of PSII photochemistry (Fq'/Fm') were observed when Arabidopsis and Lemna were exposed to different concentrations of cAg NPs. (2) Seed germination of Arabidopsis, was affected for cAg NPs concentrations above 50 mg/L. Generally, these results highlight that under certain conditions cAg NPs could lead to toxic effects on plants. Additionally, the study emphasized that photosynthetic performance is more reliable than seed germination as an endpoint in nanotoxicological studies. However, issues related to actual mechanisms whereby ENPs affect plants need to be fully investigated

Abstract No. 329: Analysis of Loan Repayments to the Agricultural Development Fund in Saudi Arabia

Bander Alrabiah
Nottingham University
altowaijria@cardiff.ac.uk

The Agricultural Development Fund (ADF) is the government agency responsible for financing farmers in the Saudi agricultural sector. The ADF provides short-term and medium-term loans, as well as providing subsidies. From its establishment in 1962 until 2012, the ADF lent more than £7.4 billion and the number of loans exceeds 439,000. However, in spite of the facilities provided by the ADF, the annual reports of the ADF show that the outstanding debt increased from £579 million in 1990 to £940 million in 2012. The aim of this study is to analyse the efficiency of loan repayments through four objectives: 1) analyse the current status of the regional distribution of agricultural loans, 2) examine the efficiency of loan collection to identify factors that affect loan repayment, 3) explain the variation in collection rates among the ADF's branches and 4) provide recommendations to improve the probability of repayment. This study used secondary data from the ADF since its inception in 1962 until 2012. Through examination of the current status of agricultural loans and the application of Multiple-Attribute Evaluation, variation in the distribution of loans has been observed. The highest priority regions for loans are Jazan and Northern Province. By using the logistic model to determine factors affecting the repayment of short-term loans and specialised projects, results show that the age of the borrower, the grace period, the loan value, the financial guarantee and the region each have a significant effect on loan repayment. The results for the specialised projects reveal that the grace period, the region and the loan

type significantly affect loan repayment, whereas the age of the borrower and loan value have no significant impact.

Abstract No. 333: Proteomic Analysis of Transglutaminase 2 Substrates Modulated by PKC and PKA Activation in H9c2 Cardiomyocytes

Ibtesam Almami, Alan Hargreaves, John Dickenson and Philip Bonner School of Science and Technology, Nottingham Trent University, UK

Transglutaminases (TGs) are a family of calcium (Ca2+) dependent enzymes that catalyse the post-translational modification of proteins. Several classes of this enzyme have been identified (TG1-7). Transglutaminase 2 (TG2) which is ubiquitously expressed possess many enzymatic activities include, transamidation, deamidation, protein disulphide isomerase and protein kinase, as well as acting as a G-protein in trans-membrane signalling. The cytoplasmic TG2 has been ascribed a role in apoptosis and cell signalling whereas the extracellular TG2 has roles ECM stabilization, cell adhesion and migration. TG2 has been shown to mediate cardioprotection against ischaemia and reperfusion-induced cell death. Similarly, increased TG2 expression protects neuronal cells from oxygen and glucose deprivation-induced cell death. Protein kinase C (PKC) and cAMP-dependent protein kinase (PKA) are two major mediators of signal transduction pathways associated with ischaemic preconditioning and pharmacological preconditioning induced cardioprotection. Recent work at NTU using H9c2 cardiomyocyte cell line has shown that the transamidating activity of TG2 increases in response to activation of PKA and PKC as well as preconditioning against oxidative stress. Using a cell permeable biotinylated substrate of TG2 it is possible to visualise the protein targets of TG2 activity after 5 min following preconditioning against oxidative stress or activation of PKA and PKC with pharmacological activators. These protein targets of TG2 activity can be identified following extraction of the cells. The biotinylated proteins can be isolated using affinity chromatography and identified following 2D PAGE and MS-MALDI mass spectrometry. Twenty five proteins were identified as TG2 substrates and some of these protein targets were confirmed by immunofluorescence staining techniques. These targets include cytoskeletal organizing proteins, chaperone proteins, Ca2+ and phospholipid binding proteins and proteins involved in membrane transport processes.

Keywords: H9c2 cardiomyocytes, preconditioning, protein kinase C, protein kinase A, transglutaminase 2, proteomic, substrate.

Abstract No. 340: Solvent Free Aerobic Epoxidation of 1-Decene over Supported Cobalt Catalyst

Raiedhah Alsaiari
Cardiff Catalysis Institute, Cardiff University, UK
kaade_77@hotmail.com

Oxidation is one of essential methods for chemical intermediates synthesis. Alkene epoxidation by electrophilic addition of oxygen to double bond is a major challenge in oxidation reaction by heterogeneous catalysts. The introduction of catalytic systems using oxygen from air is preferred for 'green' processing. Cobalt supported on MgO is promising catalyst for epoxidation of 1-decene under mild solvent free-conditions using catalytic amount of TBHP, which is used as the radical initiator and oxygen from the air as the primary oxidant for 24h at 80oC. Three different initiators (tert-butylhydroperoxide, cumenehydroperoxide and azobisisobutyronitrile) have been investigated for this reaction. An aerobic epoxidation mechanism for 1-decene is proposed and characterisations (XRD, SEM) of cobalt catalyst are shown. A free-radical mechanism has been evidenced in the liquid phase epoxidation of 1-decene and it is believed that the reaction is occurring on or near the catalyst surface.

Abstract No. 357: The Metabolic Effects of khat Extracts on Glucose Serum and Fat Oxidation at rest and during moderate Exercise

M.A. Sallam[1]•[2] & R.H. Baxendale .
[1] Faculty of Medical, Veterinary and Life Science, University of Glasgow, UK
[2] Substance Abuse Research Center, University of Jazan, Saudi Arabia.

The chewing of khat leaves is widely practiced in southern Saudi Arabia, such as Jazan region for their central stimulant properties. These effects are due to cathinone which is present in khat leaves. The aim of this study was to investigate the effect of consuming 45g of khat at rest and during moderate exercise. The study protocol was approved by the Ethical Committee of Medical Research Center in Jazan University. 10 healthy male volunteers were recruited to a blind random order study. Each volunteer visited the lab three times. During the first visit: the study and apparatus explained to the subjects. Then participant asked to take rest and collect the expired gases for 5 mins. After that, he performed a cycling based test in which the subject cycles sub max exercise for 16 mins on a cycle ergometer (computrainer), to identify work load for second and third days. On the day of the second visit of test, subject asked to eat standard meal then rest 30 mins. At 30 mins volunteer requested to orally ingest either 33ml of fruit juice or juice with 45g of ground khat leaves filtered to remove particles. Then he asked to rest for 45 mins again before start cycling on an ergometer for 20 mins at an intensity of 40% VO2 max, follow that 30 min rest. At the last visit to the libratory, the subjects asked to repeat second visit with ingest either khat or a harmless placebo, however opposite the previous order of administered. On second and last visits blood samples (5 ml) collected over the final 5 mins at rest phase, and over the final 2 mins in every 10 mins for the exercise. During the period of experiment various parameters have been measured: Glucose, Cholesterol and Triglycerides. This period was chosen to ensure that all subjects reach khat peak absorption, which occurs between 45 to 60 minutes after ingestion. The results showed that glucose concentration, cholesterol concentration and triglyceride concentration were not affected after khat consumption during the trial comparing with placebo.

Keywords: Exercise, Metabolic, Khat, Cathinone, Fat oxidation.

Abstract No. 382: The Circadian Clock, How Does it Tick?

Dana Alsaleh,
Applied math, University of Manchester, UK.
dn_saleh@yahoo.com

Circadian rhythms exist in all organisms, starting from unicellular organisms, such as bacteria, to more complex multicellular higher organisms such as humans. Circadian is a Latin word, from circadine, meaning ‘’about day’’. These rhythms simply refer to the whole body's oscillations within a period of 24 hours. These oscillations are basically controlled by environmental changes, such as light and temperature variations. Circadian rhythms are mainly generated and regulated by the suprachiasmatic nucleus (SCN), which consists of a pair of small nuclei. Per-1 neurons, which have a per-1 gene, play an important role in the molecular Mechanisms of the brain's master circadian clock in the SCN. Per-1 neurons have different behaviour during a 24-hour period. In this study, we aimed to present the behavior of per-1 neurons from Belle et al. experiment in 2009. The mathematical model of a per-1 neuron, which is defined by Belle et al., is used for the simulation. In this model the membrane potential carries four main currents: a sodium current, a potassium current, a calcium current and a leak current. This model consists of six ordinary differential equations. In addition to these four currents, the model has the applied current i.e. the synaptic currents which are generated from other neurons. These currents may be divided into two types: excitatory post-synaptic currents (EPSCs) and inhibitory post-synaptic currents (IPSCs). The first type increases the probability of firing an action potential, whereas the second inhibits neurons from firing. The applied current was generated using homogeneous Poisson process. The parameter values were determined by using the root mean square function. The results of the simulation over 24- hour period illustrated that the membrane potential of a per-1 neuron has the same state as the Belle et al. experiment except two periods: late morning and dusk.

Abstract No. 383: A comprehensive Study to Develop and Evaluate the Acquired Brain Injury physiotherapy Documentation in Inpatient Setting

Altowaijri, Abdulrahman M, van Deursen, Robert and Busse, Monica,
Physiotherapy Department, School of Healthcare Sciences, Cardiff University, UK.
altowaijria@cardiff.ac.uk

Specialist physiotherapy service processes for treating people with ABI are poorly described and evaluated in the literature. The most important factor limits the understanding of the physiotherapy service is the lack of a system to define, describe and record the physiotherapy interventions. The aim of this study was to develop and evaluate a physiotherapy documentation tool for use in inpatient settings. Research Method: Wide range of data collection methods were used, including interviews, questionnaires and observational processes. Information gathered from clinicians was used to design a physiotherapy treatment recording tool for use with people with ABI in an inpatient setting. The reliability, validity and acceptability of the tool were evaluated. Six experienced physiotherapists were invited to take part in this stage of the study. Nine patients and eighteen treatment sessions were observed and videos recorded. Result: A valid, reliable and acceptable treatment recording tool for use by physiotherapists with people with ABI in an inpatient rehabilitation setting was developed. The new developed documentation tool has the ability to record comprehensive details of a treatment session using a very simple coding process in a very quick way. Conclusion: The main outcome of this current study was the development of a new, valid, acceptable and reliable treatment-recording tool. This tool

would bring order and rigour to the description of the physiotherapy treatment activities provided for people with ABI in an inpatient setting. It will also help to characterise the many treatments, procedures and interventions used in physiotherapy, taking into account their multidimensionality with respect to content, purpose, intensity, duration, sequence, frequency and other characteristics of care provided. The new tool was designed to improve patient care and help to better understand of the ABI physiotherapy practice in inpatient setting.

Abstract No. 390: Chemical Imaging of Biological Tissues Using Time-of-Flight Secondary Ion Mass Spectrometry

Afnan Alnajeebi, Sadia Sheraz (Rabbani), John C. Vickerman, Nicholas P. Lockyer
Manchester Institute of Biotechnology, University of Manchester, Manchester
Afnan.alnajeebi@gmail.com

Time-of-Flight Secondary Ion Mass Spectrometry has become common in recent years as a powerful imaging and analytical research tool for the investigation of biological systems and is capable of identifying and monitoring the chemical composition of the various tissues and cells throughout the progression of the disease, and can assist in the development of drug therapies. Recent improvements to the ToF-SIMS technique have lead to developments in the mass range, spatial resolution, sensitivity, sample handling and data processing. The analysis has benefit from a novel linear buncher ToF analyser configuration and multivariate analysis (MVA) techniques. In this study, 2D ToF-SIMS imaging was carried out on mouse brain section, prostate cancer and breast cancer tissues using the J105 3D Chemical Imager instrument. The tissues were analysed using polyatomic primary ion sources, particularly, 40 KeV C60+ ion beam in dc mode.The results indicate the capability of ToF-SIMS in visual the molecular chemical differences of various tissues. Glycerophospholipid-related species at m/z 184 and m/z 166 are the main components of all tissues, which build up all structural membrane of the cell. The study of different cancerous tissues particularly prostate cancer tissue and breast cancer tissue demonstrates some similarity between these two tissues.In addition, mapping the tissues molecules has shown the advance of these researches in understanding the different tissue states such as the cancerous region and white and gray matters of brain tissues.

Keywords: Mass Spectrometry; TOF-SIMS; Biological; Analysis; tissues; cancer; imaging

Abstract No. 402: Mechanical and thermal properties of vinyl ester matrix nanocomposites based on layered silicate: effect of processing parameters.

A.I. Alateyah[1, 2*], H.N. Dhaka[1 2], Z.Y. Zhang[2]
[1] Al Imam Mohammad Ibn Saud Islamic University (IMSIU) (Riyadh, Saudi Arabia).
[2] Advanced Polymer and Composites (APC) Research Group, School of Engineering, University of Portsmouth, UK
abdulrahman.alateyah@port.ac.uk

The Mechanical and thermal properties of vinyl ester matrix nanocomposites based on layered silicate were investigated. To characterise interlaminar structure of the nanocomposites of different methodologies, X- ray diffraction was performed. Different processing parameters were applied in order to investigate the effect of these parameters on the overall properties of neat polymer and nanocomposites. First methodology was performed at low content of layered silicate which includes 0.5, 1, 1.5, 2 and 2.5 wt.%. Speed and time of the mechanical stirring were 1500 rpm and 1 hours respectively. The curing was at room temperature. The second methodology included 1, 2, 3, 4, and 5 wt.% clay loading. The mixing speed and time were 2000 rpm and 2 hours respectively. Compression moulding machine was used in order to cure the samples instead of room temperature. The mechanical and thermal properties of neat polymer and nanocomposites showed different improvement for each methodology. The improvements in mechanical and thermal properties of the first methodology were up to 1 wt.% clay loading. Further addition of clay resulted in decreasing the properties. On the other hand, the second methodology showed enhancements in the properties up to 4 wt.% clay volumes. The difference between them can be attributed to the processing parameters. When the clay weight is increased, the viscosity of the mixture will be enlarged. Thus, sufficient processing parameters will help to reduce the aggregation layers. The presence of the aggregation layers usually imparted negative impact to the overall properties.

Keywords: Nanocomposites, vinyl ester, layered silicate, mechanical, thermal.

Abstract No. 423: Development of a portable monitoring system for monitoring hormones in the environment

Zeid.O.Oiaidha, Gillian.M.Greenway

Progesterone is a natural steroid hormone that plays vital roles in fertility and pregnancy and its uses in the industrial field in making drugs and cosmetics products. The effect of progesterone is receiving growing attention from the public at large, as there is a continuous spread of anthropogenic substances into the water environment. The progesterone has clear effect on reproductive behaviours of fish. The environmental analysis of progesterone at concentration (low ng L-1 range) requires the use of very sensitive and selective methods, which in most cases, requires a solid phase extraction, preconcentration and purification step. This work describes steps towards developing a portable analysis systems in which chemiluminescence immunoassay is utilised as the detection technique. Preconcentration and purification was achieved using a monolith prepared from tetramethyl orthosilicate. The final aim of the work is to combine all steps into an automated systems for application in the environment.

Keywords: Development, a portable monitoring system, monitoring hormones, the environment.

Abstract No. 439: Expression of Thimet Oligpeptdase and Neurolysin

Mustafa Alkhanani, Saudi Arabia
mfk402000@hotmail.com

Thimet Oligopeptidae (TOP) and Neurolysin (NLN) are two closely related proteases from the M3 family of metalloproteases. They have been implicated in a number of processing events inside cells that can modify neuropeptide signals. A role for these enzymes has been proposed in Alzheimer's disease, in the control of reproduction and spermatogenesis and in the immune response however it has proved difficult to delineate which enzyme is responsible for any given process as most existing assay methods measure both enzymes. The laboratory has recently developed a specific qPCR assay and novel immunological reagents that are able to distinguish the two enzymes opening up the prospect of a greater understanding of the precise function of these two proteases. It is proposed in this study to identify specific proteins that interact with TOP in the reproductive system using a yeast-two-hybrid approach and then to investigate if there are any changes in these interactions in the obese and obese/diabetic rat model where reproductive function is known to be impaired.
Keywords: Thimet oligopeptidae 2. Neurolysin 3. Yeast two-hybrid

Abstract No. 443: Assessing Nigella sativa (Black Seed) Variability using NMR-based Metabolomics

Abdulrahman E. Koshak[1, 3]
Emad A. Koshak 2, Anthony Booker3, Michael Heinrich [3, 4]
[1.] Faculty of Pharmacy, King Abdulaziz University, Saudi Arabia
[2.] Department of Internal Medicine, Al-Baha University, Al-Baha, Saudi Arabia
[3.] UCL School of Pharmacy, University of London, United Kingdom
[4.] Faculty of Pharmacy, King Abdulaziz University, Saudi Arabia

The medicinal plant Nigella sativa L. (NS) is used traditionally for diseases like diabetes, hypertension and allergy. Its metabolites may vary depending on the origin of NS, production and processing methods. Metabolomics offers a novel technology platform for plant extract analysis that has not been applied for NS. Objective: Using H1-NMR spectroscopy combined with Principal Component Analysis (PCA) we intended to establish a robust and reproducible method for the metabolomic analysis of NS products, investigate potential variations between the metabolites of NS and other Nigella species, which may be adulterants, and identify chemical quality markers. Method: Twenty three seed and six oil samples were collected from thirteen different countries. Four different NMR solvents were evaluated to determine suitable extraction technique. H1-NMR combined PCA using SIMCA statistical software was utilized for exploring significant variability among the samples.Results: Methanol-d4 was found to be a suitable solvent for seed samples, while chloroform-d for NS oil samples. Linoleic acid was selected as a key phytochemical marker. PC-1 vs PC-2 PCA score plot (Pareto scaling) of seed samples showed significant deviation (outlineg the 95% confidence level) in two samples only. However, PC-2 vs PC-3 score plot (UVN scaling) was able to distinguish between different species. PC-1 vs PC-2 plot (Pareto scaling) for oil samples had two slightly deviated samples. Conclusion: PCA was able to identify some variations from the others in five samples of seeds and two of oil, discriminating between different species and identifying fraudulent products. An innovative economical technique for metabolomic analysis of NS products has been established. In the future, these metabolomic fingerprints will form a good basis for developing a validated PCA model for the quality evaluation of NS products. More sample size and different product forms are needed in further studies as well as a comparison with validated methods.

Abstract No. 445: Fundamental Domains in Lorentz Geometry

Nasser Bin Turki
University of Liverpool, United Kingdom
nassert@liv.ac.uk

The purpose of the study is to improve our understanding of certain types of singularities, i.e. irregularities that can occur on complex higher dimensional sets, such as set of solutions of system of polynomial equations. Our methodology is to consider the link, i.e. the intersection of the set with a small sphere around the irregular point. We discovered how the links of a certain class of singularities can be obtained by gluing together polygons of various shapes via a combination of geometric numerical and computer-aided study. As a result of our investigation we discovered patterns in the structure of links of certain series of singularities. The underlying reasons for these patterns deserve further investigation.

Keywords: Lorentz space form, polyhedral fundamental domain, quasi-homogeneous singularity.

Abstract No. 455: Sol-Gel Synthesis of Solid and Porous Functional Metal Oxide Films

Wafa Al-Arjan and Andrew L. Hector,
University of Southampton, UK
wsaa1g11@soton.ac.uk

BaTiO3 films are one of the ferroelectric materials with peroviskite structure and are characterized by a revisable spontaneous polarization, nonlinear dielectric behavior[1] which make it a promising material for many applications such as, non-volatile memories[2], microwave electronic components[3]. This work started to synthesisTiO2 thin films and powders by sol–gel technique with dip-coating process through the optimization of sol composition from three speciation such as Ti(OiPr)4 precursor and diethanolamine (DEA) moderator , Ti(OiPr)4 precursor and HCl-catalyzed with no moderator and Ti(OBun)4 precursor with DEA moderator by studying their morphology and the particles size and its effect on the crystallization and phases transformation. Then the work has been moved in attempting to prepare mesoporous TiO2 thin films with surfactant –templated method to obtain experience of synthesis of porous films. By devolving the sol-gel chemistry, pure a cubic perovskite type structure BaTiO3 films have been prepared by dip coating techniques on silicon substrate based on the optimization of the water volume and the annealing time, as well the reaction time. The crystallization of these films and phase identification were carried out by X-ray diffraction (XRD), the thickness and surface morphology were characterized by SEM. Nuclear magnetic resonance (NMR) were used to demonstrate TiO2 species in the solution. The major focus for these woks is to synthesis of dense wall ferroelectric BaTiO3 films and follows that by developing synthesis of porous BaTiO3 films. Porous and dense wall BaTiO3 films with external and internal electrode are suitable for production of multiferroics that combine between ferroelectric (BaTiO3) and ferromagnetic (nickel filled pore) in self-assembled nano-columnar

Abstract No. 459: Crystal Structure and Microstructure of Solution Processed Cu2ZnSnS4 Solar Cell Absorber Material Using Transmission Electron Microscopy

Nessrin Kattan[1], Bo Hou[2], David J. Fermín[2], David Cherns[3]
[1]Bristol Centre for Functional Nanomaterials, University of Bristol, UK.
[2]School of Chemistry, University of Bristol, UK.
[3]HH Wills Physics Laboratory, Tyndall Avenue, U K.
* nk1473@hotmail.com

Si, CdTe, and CuIn(1-x)Gax(S,Se)2 (CIGS) are the most interesting absorber materials used for thin film solar cell applications. These systems have achieved high efficiency and reached the commercialized stage. However, they have many drawbacks due to the indirect bandgap in the case of Si technology and the scarcity and toxicity of Te and In in CdTe and CIGS. In the last two decades, intensive studies carried out on Cu2ZnSnS4 (CZTS) as an ideal alternative absorber layer for photovoltaic devices due to low cost, abundance and safety to the environment. In this work, CZTS was synthesized using the hot injection method. This method is based on colloidal chemistry that is a widely applied technique for semiconductor fabrication which could tune the material bandgap by controlling the ratio of Cu and Zn. In this work, the Crystal structure of as-prepared material, before and after annealing to 550^0 C, was analysed by transmission electron microscopy (TEM) using selected area (SAED) and convergent beam electron diffraction (CBED) techniques. TEM is an accurate technique to identify the actual phase of the material since other methods such as X-ray diffraction remain controversial. A polycrystalline material was formed in the pre-annealing stage with the presence of crystalline particles giving an average particles size of 6.9±3.3 nm. The post-annealed material consisted of crystalline particles with an average size of ~53±13nm. SAED and CBED patterns from the annealed material showed a tetragonal unit cell with approximate dimensions of a=b=5.3481 Å, c=10.6962 Å, and d(112)-spacing= 3.082 Å, consistent with a kesterite or stannite structure. The defect structure was investigated by bright and dark field images taken in 2-beam diffraction conditions. In the post annealed stage, the material showed a low density of dislocations and lamellar twins on the [112] close-packed plane.

Abstract No. 467: Yoneda Lemma and Ext functor

Dalal Rajaalla Almhamdy and Dr. Luigi Previdi
School of Mathematical Sciences, University of Nottingham
drd1404@hotmail.com

In this poster we will try to show that the is isomorphic to the for this reason the set of lemma and proposition will be reviewed and we will review two main functors Tor and Ext basically, Ext functor is the right derived functor of Hom functor (Gelfand and Manin, 2003). Also, there is a relationship between Ext functor ant the group extinctions which will be discussed in this poster. Tor functor is the left derived functor from the tensor product; It was first introduced in Kunneth Theorem and Universal Coefficient Theorem in algebraic topology. In this poster we introduce analogus method to define Ext functor, as derived functor form the covariant functor As stated previously is left exact so for a given short sequence then the resulting sequence is exact: However, since we deal with the left exactness and covariante functor, the process will be dualized; more precisely we need to use injective objects in the place of projective objects. Poster provided a case study on the application functors were introduced cor-responding to the and functors, respectively. The key properties of these functors are also discussed
Keywords: Ext functor, Hom functor, Tor functor.

Abstract No 468: Synthesis of Oligo (Nethyl Vinyl Ether)s by Chain end Capping with a Silyl Ketene Acetal in AB Initio Cationic Polymerisations

Rami J Obaid*, Stephen Rimmer
Chemistry Department, The University of Sheffield, Sheffield, S3 7HF, United Kingdome-
robaid1@sheffield.ac.uk

The abstract of this poster is to produce materials with high degrees of chain end functionality provided the reaction temperature, monomer concentration and concentration of silyl enol ethers were optimised. This requires using highly nucleophilic species such as silyl ketene actals, which react with carbocations with similar rates to vinyl ethers. Rapid disilation of the primary adduct produced the ester end groups. Alkylation of the silyl ketene acetal during the propagation time scale was indicated by decreasing of degree polymerisation as the concentation of the silyl ketene acetal increased. MALDI-TOF mass spectrometry was use to obtain reaction conditions were the dominant termination reaction was alkylation of the silyl ketene acetal. In addition, a size exclusion chromatograph was calibrated using MALDI-TOF MS to obtain molar masses of narrow fractions (SEC-MALDI TOF). The Kuhn-Mark-Houwink relation for poly(methyl vinyl ether) was then established.

Abstract No. 480: Mycobiota and aflatoxigenic strains of A.flavus from pistachio nuts from different origins collected from Saudi Arabia

Written by: Alaa Baazeem

Pistachio nuts are very commonly colonized by spoilage mycobiota especially aflatoxigenic species because they are very hygroscopic and can adsorb water. This study has examined the mycobiota and the aflatoxin producing strains of Aspergillus section Flavi species isolated from different production regions including Iran, Syria and USA collected from different markets in Saudi Arabia. Overall, the samples were colonized by a range of Aspergillus and Penicillium species. In some samples, typically phyllosphere fungi such as yeasts, Mucor, Rhizopus, and Phoma species were isolated. The relative percentage of aflatoxigenic strains were determined using a simple diagnostic medium and by HPLC. Studies are in progress to examine the potential impact of climate change factors on growth and aflatoxin production by strains of A.flavus under different storage regimes.

Keywords: A. flavus, Aflatoxin, Pistachio and Mycotoxins.

Abstract No. 483: A Secure MAC Protocol for Cognitive Radio Networks

Wajdi Alhakami. Ali Mansour. Ghazanfar Safdar
Department of Computer Science and Technology
University of Bedfordshire, UK
Wajdi.Alhakami@beds.ac.uk, Ali.Mansour@beds.ac.uk, Ghazanfar.Safdar@beds.ac.uk

Cognitive radio networks (CRNs) are remarkable area for researchers due to its intelligent technology promising a solution that utilises the available spectrum efficiently. However, it is far more exposed to security threats than those facing the conventional wireless technology. Especially in MAC layer of ad-hoc CR network, it is relatively easy to define vulnerabilities that can be exploited. Authentication and issues of data confidentiality are the main security concerns in CRN. A compromise on these can lead to the occurrence of modification and forgery on MAC CR frames which may result in the launch of Deny of Service (DoS) attacks. Authentication mechanism is strongly required here due to the absence of a trust entity among cognitive users to provide the security key management. Most of the

proposed security mechanisms are focussing on centralised infrastructure and the detection and production techniques. However, this work provides a complete framework of designing a secure MAC protocol that can grant the full authentication process in decentralised CRNs. Therefore, a hybrid Secure MAC Protocol for Cognitive Radio Networks is proposed to achieve the security requirements and address most of the existing issues such as non-repudiation, DoS, forgery, and eavesdropping in decentralised CRNs. A cooperative dedicated server is engaged only for providing the security key management to end users and verifying the users' digital signatures for the authentication purpose. Moreover, with the assistance of the cryptographic encryption mechanisms both symmetric and asymmetric techniques are used for supplying secure transmissions between two entities within the network.

Keywords: Cognitive Radio Networks; Ad-hoc Architecture; Security.

Abstract No. 488: Effect of Momordica Charantia on protein glycation

Ali Aljohi, Mark Slevin, Sabine Matou-Nasri and Nessar Ahmed
School of Healthcare Science, Manchester Metropolitan University, Manchester M1 5GD, United Kingdom
ali_aljohi@hotmail.com

Increased formation of advanced glycation endproducts (AGEs) and oxidative stress are believed to underlie the pathogenesis of diabetic complications. In most developing countries, diabetic treatment is expensive and plants are a useful potential source of anti-diabetic medication. Several studies have examined the beneficial effects of using Momordica charantia because of its hypoglycaemic properties in diabetic subjects. This study compared the anti-glycation and antioxidant properties of aqueous extracts of Momordica charantia flesh (MCF) and pulp (MCP) in vitro. Lysozyme (10 mg/ml) was glycated using 0.1 M methylglyoxal ± 5-15 mg/ml of Momordica charantia flesh and pulp extracts in 0.1 M sodium phosphate buffer, pH 7.4 at 37 0C for three days. Crosslinked AGEs were assessed using sodium dodecyl sulphate polyacrylamide gel electrophoresis followed by Coomassie blue staining. Antioxidant activities of both extracts of Momordica charantia were evaluated using the hydroxyl radical-scavenging activity and metal chelating activity assays. Total phenolic content of both extracts were also examined using the Folin-Ciocalteu method. Both extracts inhibited formation of crosslinked AGEs in a dose-dependent manner but the MCF extract was a more potent inhibitor of AGE formation. Antioxidant capacity of MCP was significantly higher than MCF using the hydroxyl radical-scavenging activity and metal chelating activity assays ($p<0.005$). The total phenolic content was expressed as gallic acid equivalents and was 176 mg/g in MCP and 135 mg/g in MCF extracts. Momordica charantia does not only have established hypoglycaemic effects but this study shows that crude extracts are capable of preventing crosslinked AGEs at least in vitro. This activity may be due to their antioxidant properties in particular their total phenolic content. Thus use of Momordica charantia deserves more attention in particular its ability to reduce AGEs and oxidative stress in diabetic subjects.

Abstract No. 495: Competition, Evolution and Bioconvection

Laila Alsharief, Jon Pitchford and Martin Bees
Department of Mathematics, University of York, York, UK.
la701@york.ac.uk

The competition between two or more species of single-celled swimming algae in the same environment is an interesting area in theoretical ecology. In order for the phototrophic cells to proliferate, they require access to nutrients and light. This need leads the swimming behaviour to depend on light intensity, gravity, or a combination of viscous and gravitational torques. Aggregations of upward swimming cells, which are slightly denser than the uid, can lead to an unstable density prole, with resultant overturning of the uid, called bioconvection. Classically, competition between dierent cells usually leads to dominance of one species. Recent experiments found that the mixotrophy ability (heterotrophy and photosynthesis by a single individual) and allelopathy (the harmful eect of a microorganism on another) allow competing microorganisms to coexist. However, the swimming strategies, and thus bioconvection, that the cells employ may also lead to coexistence. This poster introduces a model of bioconvection model and discuss the implications of some experimental work and modelling on the interplay between two species of single celled microorganisms.

Abstract No. 501: Molecular Mechanisms Underlying Statins-Mediated Inhibition of Interferon-Gamma-Induced Macrophage Gene Expression

Maarab Alkorashy and Dipak P. Ramji
School of Biosciences, Cardiff University, Sir Martin Evans Building, Museum Avenue,Cardiff CF10 3AX, UK
maarab-alqurashi@hotmail.com

Introduction: Atherosclerosisis, the underlying cause of heart attack and stroke, is an inflammatory disorder of the vasculature regulated by cytokines. Interferon-γ (IFN-γ) is a major pro-inflammatory cytokine that regulates several steps in the pathogenesis of atherosclerosis. The discovery of statins, inhibitors of 3-hydroxy-3-methyl-glutaryl-CoA reductase (HMG-CoA reductase),a rate-limiting enzyme in the synthesis of cholesterol, has had a major impact in reducing morbidity and mortality from atherosclerosis. Statins also have beneficial actions beyond lowering plasma cholesterol levels, the so-called pleiotropic effects. We have investigated the effect of statins on IFN-γ-induced macrophage gene expression. Method: Human THP-1 Cell line were maintained in RPMI 1640 medium, then PMA was added for 24h followed by simvastatin and IFN-y for another 24h. Total RNA was prepared and reverse transcribed into cDNA using M-MLV reverse transcriptase and random hexamer primers. Real-time quantitative PCR analysis was performed using SYBR Green JumpStartTaq as well as western blot analysis. Result: Simvastatin and Atorvastatin inhibit IFN-y induced Monocyte Chemotactic Protein-1(MCP-1) and Intercellular Adhesion Molecule-1(ICAM-1) expression. The inhibitory effect of simvastatin is reversed with the addition of cholestrol metabolites, mevalonate, geranylgeranyl pyrophosphate(GGPP) and Farnesyl pyrophosphate(FPP). Simvastatin also inhibits IFN-y induced STAT1 Phosphorylation. Conclusion: Both simvastatin and atorvastatin attenuated IFN-γ-induced expression of two key pro-atherogenic genes, monocyte chemotactic protein-1 (MCP-1) and intercellular adhesion molecule1 (ICAM1), in human macrophages. The response was also seen in mouse macrophages. The inhibitory action of simvastatin was reversed by farnesyl pyrophosphate and geranylgeranyl pyrophosphate, intermediates in the HMG-CoA reductase pathway. The signalling pathways underlying the inhibitory action of simvastatin on the

expression of MCP-1 and ICAM1 are currently being determined using a combination of biochemical analysis and RNA interference assays.

Abstract No. 511: Profiling Seized Samples of Mmephedrone Adulterated with Creatine

Majdah R. Alotaibi, Stephen M. Husbands, Ian S. Blagbrough,
Department of Pharmacy and Pharmacology, University of Bath, U.K.
mrma20@bath.ac.uk

Introduction: An accurate analytical profile comparison method for the identification of impurities found in seized samples of mephedrone is developed based on full spectroscopic characterization in the search for possible links between samples, from their origins, through their impurities. Methods: Three seized mephedrone samples were obtained from the Drug Expert Action Team (DEAT), Avon and Somerset Constabulary, UK. Anhydrous creatinine, creatine monohydrate, and all other reagents used were purchased from Sigma-Aldrich, UK. All measurements were run at ambient temperatures on: a Bruker 500 MHz NMR, a Perkin Elmer-Spectrum 65-FT-IR Spectrometer, and a Bruker Daltonics "micrOTOF". Results: Mephedrone in each of these seized street samples is present as its hydrochloride salt. This is readily soluble in water, in contrast to its free base. The isolation of the active component (4-MMC) was achieved by dissolving the salt in methanol to separate it from the adulterant. Spectroscopic profiles were constructed in order to search for any link between the seized samples. The data show that all three samples contain the same impurity, creatine monohydrate, in similar but different high molar ratios (creatine: mephedrone, ~2:1 by 1H NMR integration), indicative of supply from different batches. Conclusions: Chemical profiling of the creatine monohydrate cutting agent, determined in this approach, links samples to batches and maybe to the source of supply which may help in identifying manufacturing or trafficking organizations.

Keywords: mephedrone, adulteration, Profiling seized samples, creatine monohydrate.

Abstract No. 553: Fully Printed Gas Sensor Based on Polymer Functionalised CNT

A. S. Alshammari [a,b]*, M. R. Alenezi [a,c], K. T. Lai [a] and S. R. P. Silva [a]
[a]Faculty of Engineering and Physical Sciences, University of Surrey
[b]Department of Physics, , University of Hail,UK
[c]Department of Electronics, College of Technological Studies, , Kuwait
a.alshammari@surrey.ac.uk

Gas sensing devices receive a considerable interest and can be found in wide range of domestic and industrial applications [1, 2]. Here we report on fully printed carbon nanotubes gas sensors on flexible substrate with improved ethanol sensing characteristics. The sensors were fabricated via two simple steps: printing of the electrodes and the sensor active layer. The nanotubes were functionalised with carboxylic acid, surfactant and PEDOT:PSS and their sensing performance is investigated. The performance analysis shows significant enhancement in the sensitivity of the sensor with polymer wrapped nanotubes in comparison with other functionalisation methods with enhancement factor greater than 2.5. Moreover, a remarkable improvement in the response and recovery time of the sensor after polymer functionalisation is noticed. The combination of inkjet printing technique and polymer functionalised nanotubes could pave the way towards flexible, solution processable, low cost and high performance gas sensors.

Keywords: Carbon Nanotubes, PEDOT:PSS, Gas Sensor, Inkjet Printing

Abstract No. 556: Initial Evidences of Preserved Late Quaternary Environmental Changes in the Wadi AL Hinakiyah, Western Al-Madinah Province.

Ghizayel Almuhammadi and Sue McLaren
Geography Department, Leicester University, UK
drd1411@hotmail.com

Since a large part of Saudi Arabia has not been studied in relation to environmental changes occurring in the past (McLaren et al., 2009), our understanding of the palaeoenvironments in the Kingdom of Saudi Arabia remains very limited. Regarding the west of the Kingdom, where Al-Madinah is located our understanding of the environmental changes in the past is considered completely lacking. Therefore, studying the palaeoenvironments in this province are required. In the east of Al-Madinah province, there are different types of deposits and landforms preserved from the late Quaternary period, which reflect environmental changes as is the state in the wadi AL Hinakiyah which contains sediments within its terraces.The aims of this study is to reconstruct the palaeoenvironmental changes through studying the sediment sequences preserved in these terraces to increase the understanding of the environmental changes in the west of Saudi Arabia and link this with other studies which are conducted on the surrounding areas. To achieve that, Samples were collected from the wadi terraces and a number of analysis techniques are being used to determine the properties of sediments , which are (Particle size analysis, Munsell soil colour charts and Optically stimulated luminescence (OSL) dating), also, remote sensing is being used to Create geomorphological maps .The results of the study and its discussion will be presented, as work is still continues upon it.

Keywords: Late Quaternary, palaeoenvironments, wadi, terraces, AL-Madinah.

Abstract No. 558: An intelligent Mobile Diabetes Management and Educational System for Saudi Arabia

Mohammed.M. Alotaibi1, R.S.H. Istepanian1, A.Sungoor & N.Philip
Medical Information and Network Technologies Research Centre,
Kingston University, London, UK
motoa444@hotmail.com

Diabetes mellitus is a common chronic disease that affects approximately 246 million people worldwide. The kingdom of Saudi Arabia (KSA) has the seventh highest prevalence of diabetes globally, with one-fifth of the Saudi population diagnosed with diabetes. In addition, approximately one-quarter of health expenditures are spent annually in KSA to treat diabetes and its complications. Poor understanding and low health awareness, in parallel with lifestyle choices, are considered the main components behind the increase of diabetes and its complications in KSA. Furthermore, there is a lack of diabetes speciality centres, especially in remote areas of KSA. Moreover, fasting during Ramadan is a big challenge: During the fasting, people's lifestyles change, thus affecting their diabetes management. The poster presents an intelligent mobile diabetes management and educational system for Saudi Arabia patient's diabetic type 2 (SAED). The SAED consists of two main components which are (1) SAED mobile patient/healthcare provider component and (2) SAED intelligent diabetes management component. The SAED mobile patient/healthcare provider component includes 2 units (i) patient's unit and (ii) specialist diabetic unit which communicate with each other for data exchange. SAED intelligent diabetes management component includes (i) database module (ii) intelligent decision support module based on fuzzy logic concepts (iii) SAED SMS reminder module (iv) diabetes educational module. In general SAED is a system that is

capable of storing clinical data in diabetes management, such as daily blood glucose measurement, blood pressure measurements, and hypoglycemia events. These stored records and the included decision support system will allow the clinician to monitor their patients remotely. Furthermore, the included decision support system will provide the physician with recommendations for each individual patient using fuzzy logic theory. In conclusion, SAED will be evaluated and assisted in KSA for 6 months through a scientific clinical trial study to answer the key question: Is the mobile technology effective in improving the type 2 diabetes management for Saudi patients?

Keywords: m-health; mobile diabetes management; diabetes mellitus; telemedicine;e-health; Kingdom of Saudi Arabia.

Abstract No. 561: Modelling and Optimisation of the Sport and Exercise Training Process

P. Scarf[1], M. Shrahili[2], S. Jobson[3] and L. Passfield[4]
[1]Salford Business School, University of Salford
p.a.scarf@salford.ac.uk
[2]Salford Business School, University of Salford,
4WTm.m.shrahili@edu.salford.ac.uk
[3]Department of Sports Studies, University of Winchester, UK, email:
simon.jobson@winchester.ac.uk
[4]School of Sport and Exercise, University of Kent, UK
l.passfield@kent.ac.uk

This poster is concerned with modelling the training process in sport and exercise and in cycling in particular. Our aim is to provide a quantitative model that can be used to optimize training in advance of a major competition. Training is the method by which an athlete improves his/her specific performance and develops individual character according to the requirements of a specific competition. This paper uses a statistical model to relate training to performance. To do this, both training and performance must be measured, and we do so using field data relating to power output and heart rate. The measure of training we use is an established one based on the concept of accumulated training load. However, this accumulated training load measure depends on a number of unknown parameters that must be specified; only then can training be optimized for a specific athlete.The measure of performance of an athlete that we use is the estimated heart-rate required by the athlete in order to produce power output at a defined, high level. Such a level corresponds to an upper percentile (e.g. 90%) of the athlete's power output distribution, considered over all time. We then determine those values of the parameters of the accumulated training load measure such that this measure is most closely related to the performance measure. At this stage, we do not use the model to optimize training; we merely imply through the results that we obtain that this is now possible in principle. Training data from a number of competitive athletes were available to us. For each athlete, for a number of training sessions typically extending over a 300 day period between December 2006 and September 2007, power output and heart-rate were recorded every five seconds, e.g. figure 1. Power output data were collected using SRM cranks (SRM, 2012).

Keywords: performance, training, Banister model and training impulse (TRIMP).

Abstract No. 569: Identification and Analysis of Plant Thiamine Transporters

Bandar S Aljuaid, and Prof. Christine A. Raines
Essex University
bssalj@gmail.com

It is currently held that thiamine is made in chloroplast and converted in the cytosol to the active cofactor thiamine pyrophosphate (TPP). Mitochondria and chloroplast must import TPP because both organelles contain TPP-dependent enzymes. The organellar transporters that mediate the TPP import to the mitochondria have been identified in plants (At3g21390 and At5g48970). Expression of these plant proteins is similar in Arabidopsis leaves when they are treated with TPP as judged by real-time polymerase chain reaction (qRT-PCR). Furthermore, the knockout of each gene has no effect on phenotype. On the other hand, chloroplast TPP transporters have not been identified, but comparative genomic analysis has indicated that two members of the mitochondrial carrier family (MCF) in Arabidopsis (At3g51870 and At5g66380) are related to the plant mitochondrial TPP carriers (At3g21390 and At5g84970). In addition, these transporters share about 26% of mitochondrial TPP transporters. They also have four functional motifs with plant mitochondrial TPP protein sequences (At3g21390 and At5g48970). The At5g66380 protein was targeted to chloroplast as judged by microscopic analysis of the subcellular localisation of green fluorescent protein fusions in transiently transformed tobacco suspension cells. While At3g51870 is a putative chloroplast transporter, the analysis of the subcellular localisation of At3g51870 is necessary to confirm its location. Collectively, these data establish that exogenous TPP did not affect the expression of At3g21390 and At5g48970. These data also suggested that At3g51870 and At5g66380 are putative chloroplast TPP transporters. This project aims firstly to study the expression patterns of mitochondrial TPP transporters (At3g21390 and At5g48970). Secondly, it aims to identify the chloroplast TPP carriers.
Keywords: Thiamine, vitamin B1, membrane transport chloroplast, thiamine pyrophosphate, TPP.

Abstract No. 572: Pollution Modelling in the UK using GIS

Alnuqaythan, Ibtihal. Fontana, Dominic
Department of Geography, University of Portsmouth, Portsmouth, Hants POI 3HE
UP635553@myport.ac.uk

Pollution has a devastating effect on humans and other living organisms. Pollutants increase mortality rate by a huge percentage. World leaders have called on the need to reduce pollution by reducing the amount of pollutants that escape into the atmosphere from many sources owing to anthropogenic activities but very little have been done to counteract escaping pollutants. This project uses GIS to build a model that accesses measurements of different types of pollutants from about 124 automatic monitoring stations in the UK together with population, air temperature, wind speed and wind direction to build a model forecasting the movement of pollutants across the nation and how it can statistically affect human health based on the population figures. Thereby prompting policy makers to know the effect of these harmful pollutants to humans at close proximity to higher ranked areas where pollution is at a record high value, allowing room for data to be queried and graphically showing areas that need urgent attention to counteract pollution. The overall study revealed that pollution levels are very dependent on the movement or speed of air, temperature and direction of travel of wind and more often very concentrated in areas where human activities tend to be on the increase, some major results revealed that areas such as bus stations, taxi ranks and shopping areas recorded a record high concentrations of Carbon Monoxide whereas factories, quarries,

level crossing and construction recorded higher levels of Particulate Matters both volatile and Non-volatile. It finally indicates that motality rate tend to increase with areas where record high figures in pollutants were measured coupled with high population figures. Perfect examples were settlements at close proximity to factories and other industrial sites.
Keywords: Air pollution. GIS, pollutants

Abstract No.577: Personalised and Social Active Learning

Ans Alghamdi
University of Essex
adalgh@essex.ac.uk

Active Learning is a mean of increasing machine learning algorithms' effectiveness; in the case where there are just few labeled training data. It is also an effective method for corpus creation that saves time, effort and money. This method can give better results when combined with Crowdsourcing as a way to get more annotators involved. However, working toward specific recourse creation such as microblogging lexical resources in a personalized and social environment, to the best of our knowledge, has never been explored before. This work-in-progress proposes Personalized and Social Active Learning (PSAL), a crowdsourcing active learning framework to create specific annotated resources. Active Learning drastically reduces the amount of annotation required to train a highly accurate sentiment analyzer. It helps identifying instants that if labeled will improve machine learning algorithm. Crowdsourcing will reduce the time and cost for resources creation. Meanwhile, the personalized selection of instants that require feedback, and the social environment of the framework will create a unique resource creation experience. We created a smartphone (e.g. iPhone) application that lets users view their Twitter timeline. However, our experimental application tag every tweet sentimentally (e.g. positive, negative or neutral). Users are also asked to tag tweets that our application fails to classify accurately. Moreover, users are asked to confirm some of the tags our application identified. These feedbacks from users will be collected to create our corpus. Nontheless, which tweet to ask users to tag is determined based on users interaction and interests. We create a profile for every user. This profile is used to personalise which tweet to ask for feedback for. In that way we make users more interested and willing to contribute. Every user later is able to identify who in the people he follows are the most positive, negative or neutral. He also is able to share his results with others. This social sharing will encourage others to participate. As this is a work-in-progress, results will be reported later.

Abstract No. 582: Heavy Oil Processing: Modular Approach

Afrah Mohammed Aldawsari
Inorganic Chemistry Laboratory, Department of Chemistry, University of Oxford, South Parks Road, Oxford, OX1 3QR
afrah.aldawsari@chem.ox.ac.uk

The application of heavy oil in traditional FCC technologies offers significant challenges to the modern petrochemical industry. Most notably in regard to the high temperatures (< …°C) required to convert heavier fractions into usable, fuels, oils and gases. However as temperature is increased the amount of coke residues on performing catalysts increases, causing premature deactivation of the catalyst, necessitating more severe regeneration. A number of companies have successfully integrated heavier feed stocks into refinery operations, normally as blended feeds. The purpose of this work is to demonstrate the role that mild thermal processing plays in the conversion of bunker oil into lighter oils. Results

show that thermal processing was most effective at 450oC where maximum conversion was observed, after this temperature very little change in conversion or product distribution was found. Based upon these findings modifications were applied to the reactor system in an attempt to further process the wax fraction initially obtained. At 450oC conversion reached approximately 80% of the input fraction with over 90% selectivity to liquid products. Here we will also highlight the potential for microwave application in heavy oil processing and discuss the design of a microwave reactor at Oxford.

Abstract No. 597: Fast Analytical Methods to Profile Three Seized Ketamine Samples

Alotaibi, Majdah; Blagbrough, Ian S.; Husbands, Stephen M.
Department of Pharmacy and Pharmacology, University of Bath, UK
joody--a@hotmail.com

Introduction: Ketamine BP (KT) is abused for its dissociative effects. There has been a recent dramatic increase in the sale of "legal highs" and (illegally) of prescription only medicines. The presence or absence of specific organic impurities in synthetic drugs can be valuable tools to link between different seizures from the same source for evidential and intelligence purposes. Full spectroscopic profiling of seized KT samples was therefore carried out. Methods: Three seized samples of KT were obtained from the Drug Expert Action Team (DEAT), Avon and Somerset Constabulary, UK and investigated as received. Spectroscopic measurements were recorded on a Bruker NMR (400 MHz), a Perkin Elmer-Spectrum 65-FT-IR Spectrometer, and a Bruker Daltonics "micrOTOF" electrospray mass spectrometer (ESI-MS). Optical rotation was determined on an ADP-220 polarimeter. Results: Equivalent chemical structures of KT were determined by 1H and 13C NMR, FT-IR, and ESI-MS for all three samples. This demonstrated that the three samples are of high purity (>98.7%), as well as showing from their optical rotation values that they are racemic. Conclusions: The results confirm that these three separately seized KT samples are equivalent and of high purity. The samples have not been adulterated (cut) with other materials including inorganic (CDCl3 insoluble) material. These samples are all racemic and this is mostly how ketamine BP is supplied for veterinary use. The results show how this method can be used to discriminate between KT samples and any potential adulterants.

Abstract No. 606: A Theoretical Investigation of Learning Mechanisms within A Selection Hyper-heuristic Framework

Fawaz Alanazi
Nottingham University, UK
Psxfa1@nottingham.ac.uk Per Kristian Lehre
Nottingham University, UK
PerKristian.Lehre@nottingham.ac.uk

Hyper-heuristics are search techniques used to solve optimisation problems by selecting and employing heuristics from a set of pre-defined low-level heuristics, or generating heuristics based on pre-existing components. Low-level heuristics are a set of easy to implement heuristics that work to solve problems partially, such as mutation heuristics, and crossover heuristics. Hyper-heuristics were categorised into a selection and generation hyper-heuristic. This study focuses on selection hyper-heuristics. A number of so-called learning mechanisms have been proposed in the literature. They can be described as strategies used to choose a low-level heuristic based on some probability distribution. We seek to answer the question of whether the performance of selection hyper-heuristics can be improved via learning. Runtime analysis is a research methodology that refers to theoretical studies which rigorously estimate the runtime and success probability of randomised search heuristics. It also assists in gaining insights into the behaviour of search heuristics and in having a deep understanding of when a search heuristic can be successful.We analysed the runtime of a selection hyper-heuristic with two learning mechanisms; namely, Simple Random and Random Gradient. We consider a general model of fitness landscapes, and describe conditions when Random Gradient outperforms Simple Random. The analysis also shows that learning is not helpful if all low-level heuristics have the same performance. In addition, the runtime analysis of a selection hyper-heuristic on classical optimisation example problems is presented. This research is one of the initial studies on the runtime analysis of selection hyper-heuristics. It is not only define the relationship between the expected runtime and both problem and selection hyper-heuristic characteristics, but also provide a guideline for practitioners.

Keywords: Hyper-heuristics, Learning Mechanisms.

Abstract No. 618: Comparison of Using Plug-In and Native Methods in a Web Browser for Rendering 3D Learning Objects

Abdulkareem ALZAHRANI a and Michael GARDNER [a]
[a] Department of Computer Science, University of Essex, UK.

Over the years, the only method of rendering 3D objects in a Web browser was through the use of a plug-in. However, WebGL provides a new opportunity to natively render 3D objects without requiring an ad-hoc plug-in. This poster briefly distinguishes the major technical differences between these methods, in terms of creating and using 3D learning objects in a Web browser. The results have been successfully achieved by creating a solar system lesson that was developed twice in Unity (as an example of the plug-in method) and in X3DOM (as an example of the native method), then by answering the research questions in accordance with observation and survey evaluation techniques. The technical results recognize the differences in performance criteria such as speed, file size, the resolution and the usability of the two approaches. The result further shows that the project file size in X3DOM is slightly less than the one developed in Unity. Regarding the rendering speed and processor usage, the one developed by Unity is twice faster and exerts less workload on the

processor than the X3DOM one. In addition, the results reveal that the 3D object created by X3DOM is better than the one created by Unity in terms of the usability and the resolution with an exception of the animation resolution.

Keywords: 3d objects, learning object, Unity, WebGL, X3DOM.

Abstract No. 620: A Conceptual Spaces Agent-Based Model for E-Learning of Mathematics: Teaching Basic Concepts Concerning Geometric Shapes to School Children

W. J. Teahan and Y. M. Alghurabi
School of Computer Science, Bangor University
wjteahan@gmail.com, abuaary@hotmail.com

More effective e-learning methods are needed in education, especially for mathematics. In our project, we aim to investigate the utility of a specific method in teaching mathematics to primary school students. This method is mainly based on the concept of "conceptual spaces", which is a cognitive model suggested by Gärdenfors (2004), in which objects and abstract concepts are represented by quality dimensions. This report describes a pilot experiment conducted to test the legitimacy of an interactive e-learning program. An e-learning program was designed for the purpose of this study. This program has three modes: the first provides a short explanation of a concept (such as a specific shape); the second tests the student's understanding from mode 1; and the third allows the student to play a game that reinforces the concepts learned. Forty concepts concerning geometrical shapes were covered by the experiment in 26 lessons with 78 questions. A sample of 8 students with different ages, genders and classes in primary school were exposed to this software. The results were promising. The average score of all students for all questions was 92.6%. Many of students had no problems concerning the shape dimensions. Mistakes on specific questions confirm aspects of the conceptual spaces cognitive model. The next stage will be to determine whether mistakes are consistent for different student groups and to determine how the students organise the concepts. The aim will be to see whether teaching and learning can be improved in order to avoid students making mistakes.

Keywords: Conceptual spaces, mathematics learning, concepts, cognitive learning, agent-based models, mathematics concepts.

Reference: Gardenfors, P. (2004). Conceptual spaces as a framework for knowledge representation. Mind and Matter, 2(2), 9-27

Abstract No. 634: Poly-Cationic Antibacterial Formulations

Fatima M. Alzahrani, and Stephen G. Yeates
School of Chemistry, The University of Manchester, UK
fatoomzh@hotmail.com

The involvement of the polymer chemistry and technology in fighting microorganisms came about with the discovery of the ability of charged molecules in solutions as well as cationic charges attached to surfaces to annihilate colonies of bacteria. Biocidal polymer is defined as a polymer having the ability to kill microorganisms, by behaving as a source of sterilizing ions or molecules(Ahmed et al., 2008). At the core of the mode of action in this process, is the electrostatic attraction between the positively charged cationic polymeric material and the negatively charged bacteria cell membrane.(Ikeda et al., (1984) and Bai et al., (2012)). Two different classes of cationic polymers; block and statistic copolymers which

contain poly [2-(methacryloyloxy) ethyl trimethyl ammonium chloride), (DMC) and polymethyl methacrylate, (MMA). Statistical polymers were prepared by conventional one pot free radical polymerization in ethanol while block copolymers by Reversible Addition Fragmentation Chain Transfer, (RAFT). The synthesised polymers characterized using different structural spectroscopic techniques including Aqueous GPC, 1H NMR and IR. Solutions behaviour was investigated by using pyrene fluorescence, surface tension and foam formation. By using plate reader the antibacterial properties via MIC (Minimum Inhibitory Concentration) was investigated for the obtained polymers. Three bacteria strains studied; two gram-negative strains namely; Escherichia Coli K12, and Pseudomonas Aeruginosa and one Gram-positive; Staphylococcus aureus.

Keywords: Poly-cationic, Block polymers, Anti-bacterial Polymers.

Abstract No. 638: Pesticide Preconcentration Uusing a Functionalised Silica Monoliths for Environmental Field Analysis

J.S. Algethami, S.J.Haswell
Department of Chemistry, University of Hull, Hull, HU6 7RX, UK
Jari.algethami@2008.hull.ac.uk

Functionalised silica monoliths represent an attractive method for the extraction and pre-concentration of analytes of environmental import, such as pesticides. This is due to the high internal porosity and surface area that arise from their network structure and flow characteristics. A method of producing and physically characterising silica monoliths with the desirable flow and surface properties, both physical and chemical, has been developed which will lead to new and more efficient extraction, pre-concentration, matrix modification and separation methodology. Monolithic silica rods were prepared using a sol-gel method based on tetramethoxysilane (TMOS) and tri-block copolymer (F127) to produce the silica source and template, respectively. The morphology of the fabricated silica was investigated by both scanning electron microscopy (SEM) and nitrogen sorption isotherm at 77 k. The monolithic silica rod was modified with octadecylsilyl (C18), and the performance of the octadecylated silica monolith was evaluated using the extraction and pre-concentration of eserine as a model compound. The results show that the octadecylated silica monolith was able to achieved a high pre-concentration recovery of eserine 93% and a high extraction recovery for eserine (89–107%) at a different flow rate range (20–800 µl min-1) based on a standard solution (100 µg ml-1). Moreover, the capacity of the silica monolith sorbent, which weighed 78.4 mg, was found to be 17.6 µg eserine mg-1 monolith.

Keywords: Pesticide, Preconcentration, Silica monolith

Abstract No. 656: Metabolic Effects of Future Seasonally Global Climate Change on Costal Marine Invertebrate

Yaser Binnaser & Richard Bevan
Newcastle University
yaser_bin_naser@hotmail.com

Abstract: Climate change is likely to have profound effects on marine animals due to the predicted increases in water temperature and acidity. Many studies have examined the effects of these elevated temperatures and decreased pH at the extreme temperatures expected in the summer season, but few studies have investigated how climate change may affect animals in the winter. In this study, we investigate the effect of both winter and summer temperatures on the metabolic rate of four species of intertidal marine invertebrates: two of the species were calcified (Mytilus edulis and Littorina littorea) and two non-calcified (Actinia equina and Ascidiella aspersa). Following a period of acclimatization during which temperature was gradually increased and pH decreased, animals were exposed to the predicted climatic conditions of 2050 (TR2050) and 2100 (TR2100) for six weeks. At the end of experiments, metabolic rates were measured using a closed-system respirometry. During the experiments, seawater parameters were measured by measuring acidity, temperature, salinity and dissolved oxygen. The results found significantly higher metabolic rates at TR2100 in calcified organisms in winter but not in non-calcified species. In summer, all invertebrate organisms under study had significantly elevated metabolic rates at TR2100 conditions compared with TR2011 except for M.edulis in which there was no significant response. Furthermore, M.edulis, L.littorea and A.aspersa had higher metabolic rates in summer compared with winter in TR2100 although there was no consistent pattern at TR2050 conditions. These results indicate that calcified marine invertebrate are most affected by high temperatures and acidity in winter, while the non-calcified organisms may be more affected in the summer.

Keywords: Climate Change, Marine Invertebrate, Metabolic Rates.

Abstract No. 683: Saudi Women's Experiences, Barriers, and Facilitators When Accessing Breast and Cervical Cancer Screening Services

Karl Atkin, Rob Newton, Mona Kanaan, Nahid Batarfi
Department of Health Sciences, University of York, Departmental Office, 1st Floor, Seebohm Rowntree Building, Heslington, York YO10 5DD
rob.newton@egu.york.ac.uK, nahedbatarfi@hotmail.com

Background: Breast and cervical cancer were the leading common cancer which its mortality can be avoided by early detection, this thesis aimed to explore Saudi women' barriers and facilitators when accessing breast and cervical cancer screening services. Results: Almost 50% of Saudi women in the UK and KSA were knowledgeable. 31 % and 27 % Saudi women in the UK and KSA had a reassuring experience in accessing breast screening services. Similarly, for cervical cancer, reassuring experiences was between 21% (KSA) and 37% (UK). However, fear of having cancer was a barrier among almost 37% of women. The focus groups discussion revealed several individual, social and cultural factors that acted as facilitators and/or barriers to accessing cancer screening services. Conclusion: Lack of awareness and knowing the importance of screening are both marked respectively as barriers and facilitators to/from attending breast and cervical cancer screening service

Keywords; breast cancer, cervical cancer, Saudi, UK, barriers, facilitators, experience.

Abstract No. 697: Resonance Raman Spectroscopy – A Novel Tool for Studying Mechanism of Heme Protein Reactions in Heart Cells

Abdullah Al-Mohammedi, A. J. Hudson, NM. Storey
Department of Physics and Astronomy, University of Leicester, UK
Department of Chemistry, University of Leicester, UK
Department of Cell Physiology and Pharmacology, University of Leicester, UK
ard661@hotmail.com

Resonance Raman spectroscopy (RRS) is an optical method where the inelastic scattering of light is used to investigate the composition and structure of materials. In RRS, the frequency of incident light is equal to the frequency of a molecular absorption band. The vibrational bands of heme are well known. However, it has not been used before to provide physiologically relevant information in terms of the concentration and state of heme proteins in heart cells. Cardiac myocytes are muscle cells responsible for controlling the heart rate. This is the first time that a Raman spectrum for a cardiac myocyte has been recorded using a laser wavelength which is resonant with the Soret band of heme. The Raman spectrum is dominated by the spectral signatures from heme at this excitation wavelength. We have determined the local concentrations of heme-containing proteins in cardiac myocytes. The exact frequencies and intensities of Raman peaks has provided information on the oxidation and spin state of iron, and the presence or absence of small molecules bound to heme. We have observed the time scales for chemical changes to take place in the heart cells by simulating conditions for cardiac stress. This has been done by reduction of oxygen levels, or introduction of other small molecules into the fluid surrounding the heart cell. In these examples, the heme proteins undergo a series of chemical reactions, and the individual steps are revealed in the spectra. The purpose of monitoring heme in heart cells is to understand whether heme plays a role in signalling stress responses in cardiac myocytes. Our approach offers an alternative to recently developed methods for studying the molecular mechanisms of proteins that contain heme as a prosthetic group (i.e. myglobins, haemoglobins, cytochromes) in Cardiac myocytes and red blood cells.

Abstract No. 707: New Band-Gap Measurement Technique for a Half-Metallic Ferromagnet

T. Alhuwaymel[1, 2], M. El-Gomati1, A. Hirohata[1, 3] and J. Sagar[4]
[1]Department of Electronics, The University of York, , UK
[2]National Nanotechnology Center, KACST, Saudi Arabia
[3]PRESTO, Japan Science and Technology Agency, Japan
[4]Department of Physics, The University of York, UK
tfha500@york.ac.uk

Spintronics is a new and active developing field that aims to realise high performance electronic devices. The potential advantages of spintronics are: non-volatile memory, high storage density, high data processing speed and low power consumption. In order to achieve these advantages, there are three key requirements: high spin polarisation, high Curie temperature (Tc) above room temperature (RT) and control of interface structure. Half-metallic ferromagnets (HMFs) can fulfil these requirements due to their ability to exhibit 100% spin polarisation at the Fermi level (EF). The HMFs are new class of materials that have unique band structures; the majority spin channel has a metallic band structure whereas the minority spin channel has a semiconducting band structure with a band gap at EF. In this study, Co-based full-Heusler alloys were used due to good lattice matching with major heterostructures and Tc > RT. The main aim of this study is to develop a new technique to

directly measure the band-gap of the HMFs. Circularly polarised infrared (IR) light was used to excite only minority spins in the Heusler alloys. By controlling the wavelength of the IR light, the excitation energy was able to be matched to the half-metallic band-gap. The IR light introduced to the Co2FeSi thin film at in-plane configuration and the intensity at different wavelengths were measured for the photodetector (background), sample reference (without magnetic field), parallel and antiparallel to the IR incident. The difference between parallel and antiparallel, and the reference suggests the presence of a band-gap in the minority spin. This technique allowed us to characterise the width and distribution of the minority spin band-gap. This technique provides feedback to growth to achieve 100% spin polarisation as a prerequisite for spintronics devices.

Abstract No. 727: The effect of the degree of branching on the bulk properties and the micro environment of hyperbranched polymers

Meshari Alsharif, & Lance Twyman, Department of Chemistry,
University of Sheffield, UK
Maalsharif1@sheffield.ac.uk

The aim of my work is to synthesise hyperbranched polymers for a number of biological applications, including protein mimics, catalysis and light harvesting systems. For many of these applications co-monomers will be required. However, adding co-monomers reduces the overall degree of branching. If only one or two co-mmoners are required then this is not a problem. However, if a number of co-monomers are needed, then the degree of branching will be dramatically reduced. When the degree of branching is very low, the polymer's structure is almost linear, with all branching and controlled structure lost. The specific aim of the project is to determine the limit of co-monomers incorporation, whilst maintaining all of the physical properties and advantage of hyper branched polymers. The poster presents our results which will include the controlled synthesis of narrowly dispersed hyper branched polymers with varying degrees of branching (but fixed molecular weight). The poster will also describe the effect of branching on bulk properties (investigated using viscometer), and their micro environment using core functionalised hyper branched.

Abstract No. 730: Computational Support for Learning of Arabic

Hayat Alrefaie
School of Computer Science, University of Manchester
Manchester, M4 4FE
h-uk@windowslive.com

The aim of this study is to help learners of the Arabic language to correctly learn the Arabic prepositions and temporal marks. This will be conducted through the implementation of a tool that uses a CALL model to support language learners in managing linguistic features like closed class items (CCIs) (Prepositions and Temporal markers). This aspect of Arabic language has been chosen because it represents one of the most difficult areas of the target language for learners and yet has not been investigated in any previous research. We are preparing in the future to providing learners of Arabic language with feedback based on the semantic content of their input to the system. Most previous CALL research has been shown to concentrate on the structural aspects of language teaching and learning, such as morphology and syntax, or semantics aspects. Instead, this research focuses on the area of logical semantics in developing the CALL tool for Arabic, with particular focus on the meaning of English and Arabic prepositions and temporal markers through the use of this system. The majority of recent work in the field of semantics in CALL has focused on the

teaching of English as a foreign language. De Felice and Pulman (2008) have provided a similar tool for the learners who study English as a foreign language, which looks at the closed class words such as determines and prepositions. The current work therefore constitutes a step forward in this regard, but in terms of the Arabic language rather than English.

Keywords: Language learning, CALL tool, NLP, logical form, models, Evaluation.

Abstract No. 735: Zeolite Templated Carbons for Hydrogen Storage

Norah Balahmar and Prof Robert Mokaya,
University Park Nottingham, school of chemistry, UK
Nany20088@hotmail.com

Porous carbon materials have been prepared using nanocasting method using zeolite Y (ZY), zeolite ZSM5 (ZSMS), zeolite 5A (Z5A) and a mix of ZY and ZSM5 at weight ratios of 1:1, 1:2, 2:1 as hard templates and acetonitrile as a carbon precursor via chemical vapour deposition (CVD) at 800 °C and 850 °C. The generated zeolite templated carbons from zeolite Y at 800 °C and 850 °C (denoted asCZY-800 and CZY-850, respectively) were found to exhibit high surface area and large pore volume up to 1818 m2/g and 1.07 cm3/g, respectively. These high surface area carbons exhibit hydrogen uptake of 3 – 4 wt% at -196oC and 20 bar. Samples from a mix of zeolite Y and ZSMS had lower surface area in the range 372-395 m /g and low pore volume 0.42-0.5 cm3/g. The differences in textural properties could be related to the pore size of the zeolite templates, with larger pore zeolites favoring greater replication of zeolite-like ordering in the carbons and thus higher surface area and pore volume. The main aim of this project work was to assess the effect of pore size of zeolite templates (zeolite Y, ZSM5, different ratios of zeolite Y and zeolite ZSM5 and zeolite 5A) on zeolite template carbons. Furthermore, the resultant carbons were then characterised by XRD, TGA and nitrogen sorption. Finally, hydrogen uptake capacity was determined. The use of zeolite Y as the template generated carbon materials with high surface areas and the large pore volume of up to 1818 m /g and 1.07 cm3 /g, respectively. Templated carbons which were prepared using ZSM5 and a mix of zeolite Y and ZSM5; CZSM5-800, CZY-CZSM5(1-1)-850 showed lower surface areas and the lowest hydrogen uptake. Carbon CZY-800 exhibited much greater hydrogen uptake of up to 4 wt% (at 20 bar and -196 oC) as compared to other templated carbons. This is due to a high surface area and large pore volume. Moreover, hydrogen uptake for all the prepared carbons was found to be reversible.

Keywords: Zeolite templated carbons ZTCs , hard templates , zeolite , chemical vapour deposition (CVD) , hydrogen uptake .

Abstract No. 737: Novel polyoxometalate–phosphazene aggregates and their use as catalysts for biphasic oxidation with hydrogen peroxide

R. Yahya, E.F. Kozhevnikova, I.V. Kozhevnikov*

Nanosized metal-oxygen cluster anions – polyoxometalates (POMs) – form a class of compounds unique in its structural variety and functional versatility. These compounds, have found applications in various disciplines, of which catalysis is by far the most important [1]. In search for highly active catalysts for environmentally benign biphasic oxidations with hydrogen peroxide we have investigated aggregates comprising Keggin type polyanions and lipophilic cyclophosphazene cations [2]. Methodology: Experimental details on the preparation and structural characterization (single crystal X-ray analysis) of POM–phosphazene aggregates and their testing as catalysts for oxidative desulfurization of dibenzothiophene (DBT) with H2O2 in biphasic systems are given elsewhere [2]. Results we found that POM–RPN aggregates are highly active catalysts for DBT oxidation with H2O2 in a biphasic system, e.g. toluene-water, yielding DBT sulfone as the sole product. The POM–RPN aggregates can be introduced in the reaction system as pre-synthesized compounds or POM and RPN can simply be added separately to form the active catalyst in situ. Catalyst activity was found to increase with the size of the R group in line with increasing phase-transfer efficiency of RPN: iPr < iBu < Bz. The activity also increased with the [BzPN]/[POM] molar ratio, levelling off at a ratio of 6:1 .The catalysts could be recovered and reused.Conclusions In conclusion, we have synthesized and structurally characterised novel POM–phosphazene salt aggregates and demonstrated their high efficiency as amphiphilic catalysts for environmentally benign oxidations with H2O2 in biphasic systems.

Keywords: polyoxometalates, phosphazenes, hydrogen peroxide, desulfurization

References

[1] I.V. Kozhevnikov, Catalysis by Polyoxometalates, Wiley, Chichester, 2002.
[2] M. Craven, R. Yahya, E.F. Kozhevnikova, R. Boomishankar, C. M. Robertson, A.Steiner, I.V. Kozhevnikov, Chem. Comm.

Abstract No. 746: Transcriptome Analysis of Wheat Triticum aestivum L. in Response to the Interaction between Sitobion avenae (Biotic) and Salt (Abiotic) Stresses

Thana K. M. Khan, Martin Edwards, Anne M Borland
& Angharad M R Gatehouse
School of Biology, Newcastle University
. thana.khan@ncl.ac.uk

Interactions between salt stress and aphid Sitobion avenae infestation on wheat Triticum aestivum L. was investigated at the molecular level using Affymetrix Wheat genome microarrays. Wheat line 122-1 was characterized as tolerant to salt and accumulated high levels of sodium in leaves. Line 122-1 also exhibited moderate levels of aphid resistance both in the presence and absence of salt. Wheat plants were exposed to different stress treatments: (i) salt stress at 160 mM NaCl; (ii) aphid infestation at levels of 20 aphids/plant; (iii) Dual stress (salt treatment followed by aphid feeding at two time points 6 h and 24 h). Microarray data were processed and analysed using Robin (BioConductor GUI) and expression patterns displayed using Mapman and Pageman software. Global changes in wheat gene expression in response to the combination of stress treatments were compared and numbers and functional categories of differentially expressed genes were identified. The response of line 122-1 to aphid infestation was significantly greater than the response to either salt alone or the dual stress. Furthermore, 3430 and 3732 genes in common were up-regulated under all treatments at 6 h and 24 h respectively. The identification of common gene functions may reveal genes that have a putative role in the cross-talk between biotic and abiotic stress. Several genes that

showed significant up-regulation in response to biotic/abiotic stresses (fold change from 0.5 to ≥ 1based on a log2 values) were identified as stress responsive (SR) genes. For example, aphid feeding was shown to significantly up-regulate expression of genes assigned to jasmonic acid metabolism, and down-regulate genes involved in abscisic acid biosynthesis. This study demonstrated that the presence of salt alters wheat responses to aphid feeding. It represents the first work employing microarrays to investigate the molecular mechanisms underlying wheat responses to multiple stress conditions (salt and aphids).

Keywords: Wheat Triticum aestivum. Aphid Sitobion avenae. Affymetrix GeneChip. Biotic and abiotic interaction. Salt tolerance. MapMan analysis. Aphid resistance. Salt stress Aphid infestation. Stress responsive genes. Cross-talk.

Abstract No. 747: Synthesis and Investigation of Rod-Shaped Mesogens Functionalized with Ethylenoxy Chains

F. Z. Al-Qahtany, G. H. Mehl
Department of Chemistry, University of Hull, Hull HU6 7RX, UK
faleh_505@hotmail.com

Most liquid crystals are organic substances which can be encouraged to show liquid crystal phase behaviour by two different approaches, either by changing the temperature or the concentration of a solvent. Those obtained by changing the temperature are known as thermotropic liquid crystals, and those resulting from a concentration change in solvent are termed lyotropic liquid crystals. Liquid crystalline phase behaviour of ethylenoxy group functionalized molecules has in the main been associated with lyotropic liquid crystalline phase behaviour. For thermotropic systems it has been connected to the investigations of LC crown-ethers and for the investigation of complex perforated lamellar super-structures. Surprisingly not much work has been reported on the investigation of calamitic mesogens consisting of benzoic acid aromatic esters with the terminal chains bearing oligo-ethylenoxy groups. Thus such systems were explored, especially as these materials can combine thermotropic phase behaviour with some solubility in water, giving rise to the potential of chromonic properties. In this report we will describe the results of our synthetic efforts and of the chemical characterisation of the materials and the investigation of the liquid crystal properties using optical polarizing microscopy (OPM), Nuclear magnetic resonance (1H NMR) and differential scanning calorimetry (DSC). Additionally we report our results on the qualitative miscibility studies of these molecules with water, based on OPM experiments.

Abstract No. 749: Structural Characterisation of Three Novel Poly-Aryl Compounds

Moayad M. Khashoqji, Dr Robin Pritchard & Dr John Gardiner
moayad.khashoqji@postgrad.manchester.ac.uk

This project presents the structural characterisation of the three illustrated novel poly-aryl compounds, which have potential applications as stereospecific ligands or as starting materials for synthesising graphene-related structures. The identification of isomers as steric congestion increases is an important aim. Such information would help synthetic chemists devise high-yield reactions with products that require minimal purification. As the primary characterisation technique is single-crystal X-ray diffraction, it was necessary to grow single-crystal of these compounds, which proved a challenge. 13C and 1H-NMR spectroscopy were used as the secondary techniques in order to confirm sample purity. In order to further understand the measured molecular geometry similar structures were sought in the Cambridge Crystallographic Database and their structural details compared.The main conformation parameters that describe the above poly-aryl compounds are the torsion angle of the peripheral rings relative to the central one. It would be anticipated that alkene conjugation would dictate that the most stable torsion angles would be zero or 90o. The measured values were in the range of 3 to 16o except for one, which was about 84o, which is an excepted. Despite extensive intra and intermolecular interactions the C≡C-C angle remained close to being linear in all the structures, falling in the range 175 to 179o.

Keywords: Poly-aryl compounds, Crystallisation, Single-Crystal X-ray Diffraction, Nuclear Magnetic Resonance (NMR), Cambridge Crystallographic Database (CSD).
Software are used; SHELX97, Olex2, ConQuest, and Mercury.

Abstract No. 750: Synthesis and Characterization of Components for New Hexaryl Aromatics and Polyphenylene Dendrimers

Jafar Alkabli, Xiao Xiao and John M. Gardiner
School of Chemistry and Manchester Institute of Biotechnology, University of Manchester, Manchester, M1 7DN.
Jejo.333@hotmail.com

This project is directed towards new precursors of tetraphenyl cyclopentadienones (CPDs), alkyne derivatives and derived novel hexaphenylbenzenes (HPBs) as approaches to functionalized polyphenylene- related dendrimers. The synthetic approaches using aldol condensation, Sonogashira coupling and Diels-Alder reactions to assembly the substrates and thence rapidly assemble the polyaryl targets, with work involving a range of newoptimisationsof the chemistry for theseprocesses. The target polyphenylene dendrimers can be constructed by using either divergent or convergent methods and in this project work will explore initially divergent routes to linked polyarlys, including those with differing levels of conformational restriction. A variety of polyphenylene dendrimers will be synthesised in this project and their differing properties evaluated. These include investigating effects of changing the electronics of functional groups (eg including fluorine or other electron-withdrawing groups), but also of steric effects on molecular rotation. These property of differences are intended to result in novel materials with the aim of being able to engineer in new valuable characteristics, relevant to new materials development.

Keywords: Service-Oriented Architectures, process calculi, formal modelling languages.

Abstract No. 788: e-Government Security Approach: Biometric Identity-Based Cryptography for e-Government Enironment

Dania Aljeaid and Xiaoqi Ma
School of Science and Technology Nottingham Trent University, Nottingham, UK
xiaoqi.ma@ntu.ac.uk

Government information is a vital asset that must be kept in trusted environment and efficiently managed by authorised parties. Even though e-Government provides a number of advantages, it also introduces a range of new security risks. Sharing confidential and top-secret information in a secure manner among government sectors tend to be the main element that government agencies look for. Thus, developing the effective methodology is essential and it is the key factor for e-Government success. The proposed e-Government scheme is an enhanced combination of He et al and Li-Hwang schemes, which utilised both identity-based encryption and biometric technology. This new scheme can effectively improve the security in authentication systems, which provides a reliable identity with a high degree of assurance. The expected outcome of this research is to design a secure system that supports a hybrid cryptosystem scheme for e-Government environment.

Keywords: e-Government identity-based cryptosystem; biometrics; elliptic curve cryptography; mutual authentication.

Abstract No. 790: Alterations in Puma protein expression regulate sensitivity to chemotherapy drugs in Three dimensional (3D) multi-cellular tumour spheroids

Ibrahim Omar Barnawi
Reading ,UK
Avcc20@gmail.com

Most chemotherapy drugs such as cisplatin, doxorubicin, gemcitabine, vincristine and temozolomide work through the induction of apoptosis in tumour cells. Mutations in apoptotic pathways, notably p53 and Bcl-2 family protein, are common in cancer and associated with increased resistance to apoptosis and therefore to chemotherapy. We have compared the sensitivity of two cell types, A172 human glioblastoma cells and MDA-MB-231 human breast cancer cells, for their sensitivity to the chemotherapy drugs cisplatin, doxorubicin, gemcitabine, vincristine and temozolomide. We have then determined the effect of growing these cells as two-dimensional (2D) monolayers or as three-dimensional (3D) multi-cellular spheroids on their sensitivity to these drugs and correlated changes in apoptotic sensitivity with changes in the expression profile of members of the Bcl-2 family of proteins. We identify in both cell lines that growing the cells as spheroids significantly enhanced their resistance to apoptosis induced by each of the chemotherapy drugs when compared to growing the cells as monolayers. In many cases cells in the tumour spheroids became completely resistant to apoptosis. We also found that growing cells in 3D culture by embedding them in Matrigel also increased their apoptosis resistance to chemotherapy drugs, although not to the same extent as when the cells were grown in multi-cellular spheroids. By western Blot, we found that growing cells in spheroids led to significant changes in the expression of the Bcl-2 family of proteins, including increases in expression of Bcl-2 and Bik and decreases in expression of Mcl-1 and Puma. In conclusion tumour cells grown in spheroids have altered expression of Bcl-2 molecules which may account for their increased resistance to.

Abstract No. 809: the Usage of Plagiarism Detection Tools and Prevention Approaches in Saudi Universities Evaluating

Reemiah ALotaibi
In Information Management, Metropolitan University, UK
Reemiah77@hotmail.com

The plagiarism issue is very challenging for academic institutions worldwide. With the wide spread of the Internet and the availability of online sources, students are more tempted to plagiarise. In the developed countries, academic institutions use a variety of methods and approaches to fight this problem. Leeds Metropolitan University is no exception. In other parts of the world, especially the developing countries, the issue of plagiarism is even more severe, especially with the lack of adequate plagiarism fighting strategies. This dissertation evaluated the experience of Al-Imam Muhammad Ibn Saud Islamic University (AMSIU), located in Riyadh, Kingdom of Saudi Arabia, in fighting the plagiarism issue in light of Leeds Metropolitan University's (LMU) experiences in the United Kingdom. To carry out this research, the researcher collected data from staff members and students in both universities. The results of analysing the collected data have shown a wide gap between the experiences of the two universities in fighting the plagiarism issue. While LMU adopts and employs the most recent technologies and prevention approaches to tackle plagiarism, AMSIU lacks both technologies and prevention approaches. The results have also shown that the lack of adequate prevention approaches and detection tools has been reflected in the percentage of plagiarisers among AMSIU students, where around a third admitted committing this offence in comparison to around 10% of LMU students. Based on these results, a few suggestions were recommended to be adopted by AMSIU in order to overcome this problem.

Keywords: Evaluation; Plagiarism Detection Tools; Prevention; Saudi Universities; British Universities.

Abstract No. 822: Determination of Acrylamide In Saudi Infants Food By Using Lc-Ms

M. A. Thaiban*, L. J. Marshall, C. Orfila And M. J. Holmes
School of Food Science and Nutrition, University of Leeds, UK
*Food Science and Nutrition Department, King Abdulaziz University, KSA.
ml08mat@leeds.ac.uk

Acrylamide C3H5NO (prop-2-enamide) a potential carcinogen, is found in a wide range of food products that are rich in carbohydrate, have low water content and which have undergone a high temperature processes (e.g. deep frying and roasting). In the diet, its primary contributors are cereal-based products, potato-products and coffee. The estimation of Tolerable Daily Intake (TDI) for neurotoxicity and cancer from acrylamide are 40.0 and 2.6 µg/kg/day respectively. The WHO and FAO estimated the average exposure of acrylamide in infants to be 6.0 µg/kg bw/day for the 98th percentile consumer. Currently, no estimate is available for the Saudi infant population[1, 2]. Primarily, Saudi infants consume breads, potato chips, breakfast and infant cereals, biscuits and popcorn, all of which contain varying amounts of acrylamide due to processing conditions and chemical structure. Samples of these foods were purchased from different Saudi retailers and analysed by liquid chromatography-mass spectrometry (LC-MS) to determine the levels of acrylamide present. The results will used to determine the exposure of acrylamide due to consumption of these foods in the 4-20 month age group.
Keywords: Acrylamide; LC-MS; Dietary Exposure.

Abstract No. 841: Betweenness Centrality Measures for Dynamic Networks

Ahmad Alsayed & Des Higham
Department of Mathematics and Statistics, University of Strathclyde, UK
almtar350@gmail.com

Many emerging network data sets are time dependent. In this poster, we propose new temporal and nodal betweenness measures for such dynamic networks. They are defined by extending the classical concept of betweenness in static networks to the case of transient edges. The new measures quantify which nodes and which time points are the important in terms of network perturbation. We finish with examples showing the new two measures applied to real data.

Abstract No. 851: Towards the Mimicking Properties of the Naturally Enteroochelin for Use in Biological Systems

Abeer Bukhari,
School of Chemistry, University of Manchester

Transition metals play a fundamental role in the regulation of chemical processes within biological system; intracellular concentration transition metals that have important consequences in the onset of a variety of disease states such as neurodegenerative diseases. In this poster we present our initial findings into the development of a robust, generic, approach to the synthesis of macrocyclic, synthetic receptors which are able to sense, either in vitro or in vivo, the presence of transition metals. Methodology The work presented in this poster details the synthesis of macrocyclic templates which are derived from the cyclotrimerisation of L-serine derivatives. Introduction of a novel metal chelating residue, based upon a 2,3-dihydroxtbenzenesulfonamide moiety are discussed. Derivatisation of a pre-formed macrocylic core, derived from an L-serine trimer, proves to be the most economical method for the synthesis of the desired siderophores. During the synthesis of 2,3-dihydroxy-5,6-dimethylsulfonylchloride, a key intermediate for the assembly of the siderophore, we encountered a number of hitherto unknown reactions. Namely, the dimerisation of 4,5-dimethyl-6-chlorosulphonyl-1,2-benzoquinone affords a product which can exist in two tautomeric forms. The structures of the two isomeric products (which differ merely by the locus of a hydrogen atom) were unequivocally established by X-ray crystallography. This observation provides a very rare example of 1,2-diketo-desmotropy. Similarly, attempted sulfonylation of serine methyl ester derivative afforded a 4,1,2-benzoxathiazine derivative via a novel rearrangement process. Benzo-1,2-quinone dimers also serve as useful platforms for further derivatisation, an aspect of our work which will also be presented in the poster.Conclusion We have developed a modular approach to the synthesis of novel sulphonamide-containing siderophores. In these investigations we observed a number of novel reactions of benzoquinone dimers and 2,3-dihyroxybenzenesufonamides which many have application in medicinal chemistry

Abstract No. 873: Genome relationship in Crocus sativus and its wild relatives

Nauf Alsayaid, Emanuele Ranieri, Trude Schwarzacher and J.S. (Pat) Heslop-Harrison,
University of Leicester, Department of Biology, Leicester, LE1 7RH, UK.
na172@le.ac.uk, phh4@le.ac.uk

Little is known about the origin of saffron (Crocus sativus L.) or genetic diversity in the species. Is it possible to resynthesize the species to increase diversity, or breed saffron for better quality or higher yields? Saffron is a sterile triploid (2n=3x=24, having three sets of chromosomes), so can only be propagated vegetatively. We used a range of markers (11 IRAP, 11 EST-SSR and 4 SNP) to amplify nuclear DNA from 41 accessions of 21 representative species of the genus Crocus to identify candidate ancestors and examine genetic diversity in saffron. The IRAPs marker revealed extensive polymorphisms among the species analysed. However, almost no polymorphism was seen between the saffron accessions, although accessions of sexual Crocus species showed extensive polymorphisms. This result supports the single origin of saffron crocus with subsequent clonal propagation. IRAPs and nucleotide sequencing data of EST-SSR and SNP markers indicated that C. sativus clusters with other species in the series Crocus within the genus, showing the taxonomic integrity of the series. These results also suggested that among the 21 species of the series, C. pallassii, C. cartwrightianus, C. hardiaticus and C. oreocreticus were the closest to C. sativus. Sequencing results of a SNP marker (ATPs) and meiotic analysis provides new insights of the allotriploid nature of saffron with two more closely related genomes and a third less similar. Preliminary results with fluorescent in situ hybridization (FISH) using genomic DNA from candidate species supports our molecular marker results.

Abstract No. 880: Metabolic Engineering Approaches to Improve Photosynthetic Efficiency in Crops

Saqer Sultan Alotaibi
The University of Essex, UK
Saqer-20@hotmail.com

It has been shown that there are significant improvements in yielding crops associated with enhanced photosynthetic plants efficiency. The process of photosynthesis is known to be a significant component in determining the productivity of crops; therefore, it provides an unexploited opportunity in the research toward increasing the yields of crop plants. The photosynthetic process consists of two associated stages that are known commonly as the light reaction and the Calvin cycle. The Calvin cycle is the major pathway of carbon fixation in higher plants, occurring in the chloroplast's stroma and having a significant function in the metabolism of plants. Three stages have been distinguished in the Calvin cycle: carboxylation, reduction and a regenerative stage. The sedoheptulose 1,7-bisphosphatase (SBPase), and fructose 1,6-bisphosphate aldolase (aldolase) enzymes were identified as exhibiting high efficiency flux control over carbon fixation and on photosynthesis, compared with other enzymes within the cycle. Furthermore, the photorespiratiory enzyme glycine decarboxylase (GDCH) has been shown as a significant factor that plays a considerable role in controlling the Calvin cycle as well as the flow of carbon through the processes of both photosynthesis and photorespiration. Consequently, the three Brachypodium distachyon SBPase, FBPaldolase, and GDCH genes have been significant targets for genetic engineering studies to improve plant photosynthesis as well as enhancing crops yields.

Abstract No. 881: Communities of Arbuscular Mycorrhizal Fungi in Salt Marsh Habitats: Diversity, Structure, and Ecosystem Function

Ahmad Khuzaim Alzahrani
University of Essex
ahka1517@hotmail.com

The relationship between ecosystem functioning and the biodiversity of microorganisms is a central focus of recent ecological studies, and arbuscular mycorrhizal (AM) fungi are considered to play a key role in this relationship. The arbuscular mycorrhiza association with two third of terrestrial plants makes it one of the most common symbiosis on earth. Although the AM fungi have been shown to be important in nutrient cycling, soil stability and enhancing plant growth, much of the information we have on them comes from a small sample of woodland and grassland habitats. Subsequently, the mechanisms regulating the diversity and community structure of AM fungi remains poorly studied across many habitats. This is particular true for salt marshes, which are a key conservation priority habitat in many countries including the UK. Using the latest next generation sequencing technologies for quantifying the diversity of AM fungi, this work will examine the community ecology of AM fungi across salt marsh habitats and relate this to local environmental variables and sediment nutrient status. In addition, by linking with other datasets from the same sites, it will also examine the role of AM fungi in ecosystem functioning. Early result show a range of local sediment conditions likely to be influencing AM fungal diversity. Whereas, future work will build on this and offer a detail assessment of the spatio-temporal diversity of AM fungi in salt marsh habitats

Abstract No. 886: Sporopllenin: Imaging and Spectroscopy

Fatimah Alkhatib
Inorganic Chemistry
moon_evening@hotmail.com

The aim of this research project was to determine the nature of the interactions of metal complexes and salts with sporopollenin and other naturally occurring spore exines. These natural materials can interact with the inorganic compounds via the formation of coordination bonds and can impart unusual properties particularly those related to the oxidation state stabilization. This makes them ideal materials for investigation as they can be used in a wide variety of applications including catalysis, imaging and biological delivery. The first transition metals Iron, copper, nickel, cobalt and manganese were used and a selection of spectroscopic techniques characterised the loading and coordination interactions including: IR, Raman, ICP-OES, UV-Vis. and Dionex Ion Chromatography. Loadings of 5-15 mg g-1 were observed for 0.5 mmol (metal): 100mg (sporopollenin). For copper and nickel there was an increase in the metal loading using 2.5 mmol: 100 mg, but in the case of cobalt there was no significant increase. It is also, good to understand that UV-Vis spectra have been obtained from metal containing bleached sporopollenin samples. The spectra display the characteristic features of copper chloride, cobalt chloride and nickel chloride. In addition, the copper chloride spectra appear to be dependent on both the concentration and the metal salt used. IR spectroscopy revealed the presence of aliphatic chains and hydroxyls, aliphatic carbons, carbonyls, unsaturation and other groups. For copper acetate there was a significant difference in the spectrum indicating the presence of bound acetate. Regarding the entire work that was conducted during the project, one can observe many positive aspects with respect to the interaction of inorganic metal complexes with sporopollenin form L. clavatum.

Sporopollenin samples from different extraction were used, but the main emphasis was on the white/pale coloured sporopollenin particles obtained by bleaching with sodium hypochlorite.

Abstract No. 889: Synthesis And Investigation Of Dimeric Liquid Crystal Molecules Show Nematic-Nematic Phase Transition

Eman Mohammed Al-Luhaybi
Chemistry, Nanotechnology, Organic

A nematic-nematic phase transition is one of the amazing properties which were noticed in the investigations of liquid crystals. Such transition can be seen in the behaviour of a cyanobiphenyl type liquid crystal dimer which has a positive dielectric anisotropy. In fact, many kinds of liquid crystal architecture, such as bent core, polymer and other architectures of liquid crystal dimer showed a nematic-nematic phase transition which is now known as N-Nx. Surprisingly not much work has been reported on the investigation of the Nx phase behaviour. Thus such systems were explored, especially as these materials shows nematic-nematic phase transition on both cooling and heating, giving rise to the potential properties. In this report we will describe the results of our synthetic efforts and of the chemical characterisation of the materials and the investigation of the liquid crystal properties using optical polarizing microscopy (OPM), Nuclear magnetic resonance (1H NMR).

Keywords: Liquid crystal, Dimer, Nematic, Chemistry, synthesis, Nanomaterial.

Abstract No. 895: Factors that Enhance the Ability of Pseudomonas Aeruginosa to Resist the Action of Antibiotics

Wafa Almatrood*, Dr. Glyn Hobbs, Dr. Helen Smalley and Dr. Katie Evans
*School of Pharmacy and Biomolecular Sciences, Liverpool John Moores University, Byrom Street, Liverpool L3 3AF.Tel: 01512312343,
W.A.Al-Matrood@2011.ljmu.ac.uk.

P. aeruginosa is an opportunistic pathogenic bacterium, which has clinically become the most prevalent bacterial pathogen in nosocomial infections, due to the fact that it is capable of resisting the effect of a wide range of antimicrobial agents. Several factors have been identified as having a significant influence on the capacity of P. aeruginosa to resist the antibacterial action. The susceptibility of bacteria against the antibiotics is modulated by factors such as temperature and inoculum density which change drug efficacy. This study has aimed to evaluate the consequence of different temperature and inoculums density on the susceptibility of P. aeruginosa to the minimum inhibitory concentrations (MIC) of the antimicrobial agents. In the present study, P. aeruginosa strain PA01 was subjected to the action of aminoglycoside and polymyxins E agents at different concentrations. The effect of different inoculum density and temperature on the action of two antibiotics, namely, tobramycin and colistin, was determined. This study set out to develop an in vitro experiment to examine the impact of inoculum density and temperature on the effect of the antibiotics against P.aeruginosa. Experiments were carried out to establish the organism's MIC to the antibiotics. It has been observed that temperature and inoculum density clearly affected the outcome of the susceptibility of P. aeruginosa to the antibiotics. The results of the tests conducted during this study revealed that both factors, incubation at low temperature and high inoculation density increased the measured MICs values of the antimicrobial agents against P. aeruginosa. These observations indicated that a number of factors employed in susceptibility tests can contribute to change the MIC values.

Abstract No. 912: Classification of Biomedical Data Using Spatial Features

Wafa Almohri[1, 2], Charles Taylor [1], Robert G Aykroyd[1], Darren Treanor[3] and Heike Grabsch[3]
[1] Department of Statistics, University of Leeds
[2] Taibah Universities
[3] Leeds Teaching Hospitals NHS Trust
ml10waja@leeds.ac.uk

Histopathological analysis of tumour samples is the standard way to diagnose and characterise cancer. However, histopathological diagnoses are subjective and descriptive, making comparison of patterns or spatial features difficult. Stereological methods such as spot counting provide quantification of tumour characteristics which can be used to compare tumour structure and composition. This work concerns characterization of stereologically derived data from histopathological samples of gastric cancer. Quantified stereological data was provided by pathologists reviewing histopathological images of cancer. This data contained classification at 300 individual points in the images on a regular grid of locations, indicating the feature identified immediately under that point for example tumour cells, tissue surrounding tumour cells (stroma), or blood vessels print (in this poster just binary class will presented). Spatial pattern analysis is a technique aiming to identify whether there are patterns within images, for example it could be grouping of tissue that can be cased helping to select best treatment. Many spatial statistics can be used including Geary's C and Moran's I. These statistics are a tool which measures spatial autocorrelation based on both feature locations and feature values simultaneously; however the p-values of some spatial statistics could be unreliable. In this work we have investigated the distribution of Moran's I spatial statistic and it has been confirmed that a reliable p-value can be obtained based on normal approximation. This has been investigated using simulations. An indication of usage of this statistic is given in the application of biomedical images.

Keywords: Classification; Moran's I statistic; spatial analysis; biomedical images.

Abstract No. 930: Açai a Superfood?

Randah Miqbil Alqurashi, D. Commane, I. Rowland. Department of Food and Nutritional Sciences, School of Chemistry, Food and Pharmacy,
University of Reading.
nutrition2012@live.com

Açai, pulp is a commonly consumed food native to the Amazon basin which has recently found its way to the European market. It is prepared from the fruit of the Amazonian Euterpe oleracea Mart, tree and has traditionally been used in folk medicine by native communities in Brazil. The fruit is reported to be rich in phenolic compounds, which have a potent anti-oxidant capacity and which may have other biological activities. Whilst there are relatively few studies into the potential health benefits of açai, however researchers have noted a particularly high antioxidant capacity for açai pulp relative to other plant based foods. There remains however a relative lack of well validated scientific information on the potential health benefits of açai consumption. The aim of the present study was to investigate the stability of the properties polyphenols in açai berry using an in vitro model that simulates provide data on the relative potential bioavailability of different polyphenolic compounds content in açai berry. The procedure was performed as described from the method of McDougall(1). The method briefly consists of two steps, freeze-dried açai was intitally digested by pepsin/HCl (pH 2) for 2 h at 37°C (gastric digestion) followed by digested with panceratin and bile salts 3h at 37°C (pH 7) (small intestine condition). Phenolic acid ,

anthocyaiann compounds (HPLC analysis) , total phenolic (Folin-Cicalteu assay) , total flavnoids content (aluminium chloride assay) and antioxidant capacity (FRAP) were analyzed for freeze-dried açai extract and açai after in vitro digestion

Keywords: Acai, Health benefits, polyphenols, flavonoids.

Abstract No. 936: Tabu Memory Based Approach to Balance Genetic And local Searches in Multiobjective Memetic Algorithm

Ahmad Alhindi
Computer Science, University of Essex
phdahmad@gmail.com

Hybrid multi-objective evolutionary algorithms (MOEAs) and local search methods have received considerable interest in the field of multi-objective optimization. These methods are generally defined as multi-objective memetic algorithms (MOMAs), and a wide variety of these algorithms have been proposed in the literature with successful applications. The design and implementation of MOMAs create several issues regarding the implementation of local search. An important issue is related to maintaining good balance between genetic search and local search, i.e., a wise allocation of available computation time between the two. A lack of appropriate balance is often likely to degrade the MOMAs. This paper intends to study the use of Tabu memory, and analyse its effect on the balance between genetic search and local search in a decomposition based MOMA algorithm, which is a hybrid between MOEA/D and GLS. Experimental studies on the 0/1 multi-objective knapsack problem have demonstrated that the ability of the proposed approach to strike a balance between genetic and local searches in MOEA/D with GLS.

Keywords: Multiobjective Optimization, Decomposition, Guided Local Search, EvolutionaryAlgorithms, Pareto Optimality, Hybridization, Tabu memory.

Abstract No. 945: Executable Hybrid Systems using Interval Temporal logic

Bader Alouffi
De montfort univeristy , Leicester, UK
bader@dmu.ac.uk

The explosive growth of embedded electronics is bringing information and control systems of increasing complexity to every aspect of our lives. The most challenging designs are safety-critical systems, such as transportation systems (e.g., airplanes, cars, and trains), industrial plants and health care monitoring. The difficulties reside in accommodating constraints both on functionality and implementation. The correct behaviour must be guaranteed under diverse states of the environment and potential failures. However, traditional models of information systems do not interface well to the continuous evolving nature of the environment in which these systems operate. Thus, in practice, different mathematical representations have to be mixed to analyze the overall behaviour of the system. **Hybrid systems** are a particular class of mixed models that focus on the combination of discrete and continuous subsystems. There is a wealth of tools and languages that have been proposed over the years to handle hybrid systems. In our work we will use the **Interval Temporal logic [ITL], which** is an established formalism for reasoning about such a phenomena. The **Duration Calculus [DC]** extend ITL to real-time, i.e. hybrid systems. A methodology in this work starts with a formal specification for hybrid systems for both discrete and continuous changes. The time model underlying our logic is a sequence of

phases and in each phase the variable change in a right continuous fashion in form of a SPline. Although is in essence a discrete logic, i.e. the discrete points are the phases there is a continuous element to it. Then, we model the formal specification of the hybrid systems into an executable subset of ITL called Tempura for the discrete changes. As a result of the fact that Tempura executes only discrete formula, therefore MATLAB will be used to model the continuous changes in the Hybrid system on our approach.

Keywords: temporal logic , hybrid Systems, computer science.

Abstract No. 955: Covalent Organic Frameworks for Biological Entrapment

Raz#bcv anAlshgari
School of Chemistry, University of Nottingham, Nottingham, Nottinghamshire,UK
pcxra2@nottingham.ac.uk

Covalent organic frameworks (COFs) are a new class of porous crystalline materials constructed from organic units linked by covalent bonds of small, light atoms (C-C, C-B, and B-O). COFs possess many unique advantages such as low density, large surface areas and high thermal stability. These advantages have offered the COF materials with superior potentials in advanced applications such as gas storage, catalysis, and separations. The major aim is to focus on the synthesis of a boron-COF compound via three synthetic procedures. The preparation of this compound requires the synthesis of the precursor 2,3,6,7,10,11-hexahydroxytriphenylene (HHTP). HHTP was synthesised via two routes. The first route, The trimerisation reaction of veratrol in the presence of iron(III) chloride gives 2,3,6,7,10,11-hexamethoxytriphenylene which was subjected to a demethylation reaction using boron tribromide to give HHTP. The second route is the oxidative synthesis of HHTP by using hypervalent iodine reagent. HHTP was characterised by mass spectroscopy and 13C and 1H NMRs. Three different routes were performed in sealed tubes at 160 °C for two days to obtain the boron-COF. The first route, HHTP reacted with trimethoxyborate in the presence of triethylamine as a base. The second route, HHTP reacted with sodium borohydride in the presence of triethylamine. The third route, HHTP reacted with boric acid in the presence of triethylamine. In conclusion, HHTP is successfully synthesised via two routes. Although the second route is straightforward, the yield (15%) is lower than the first route (47%). A novel boron-COF compound is successfully synthesised in a sealed tube. The most obvious extension of this work would be to characterise boron-COF using solid state NMR and powder XRD.

Abstract No. 959: Generating an Arabic Sentiment Corpus from Social Media

Samah Alhazmi,
School of Computer Science, University of Manchester
alhazmis@cs.man.ac.uk

In any text mining research – opinion mining in our case – data has an important role to play as a starting point to allow the categorising of different data types. Several studies have been carried out into opinion mining and sentiment analysis using product and movie reviews as their datasets, in English and Arabic. For the purposes of our research, we wished to generate a new annotated corpus for Arabic sentiment analysis, and decided to gather data from Arabic social media in the domain of technology blogs. The nature of Arabic technology blogs provides several challenges for natural language processing, such as: the use of a foreign language – English in our case – for names of e.g., technologies, companies or software, the use of transliterations into Arabic, and the difficulty of detecting opinions and sentiments expressed to show users' opinions towards these technologies and companies. As a first stage of generating our corpus, 2,350 sentences within 160 different Arabic blog posts were gathered for annotation.. A set of annotation guidelines was developed and three native speakers of Arabic were trained as annotators. Annotators were asked to annotate named entities (companies, technologies, products, systems), where these were written in English, transliterated into Arabic or written in Arabic. They also annotated facts and sentiment-bearing words, and annotated sentences for overall opinion. Interannotator agreement (IAA) was calculated. IAA generally showed substantial agreement in named entity recognition (Kappa 0.86) and information extraction (Kappa 0.77) tasks. However, results for sentiment tasks were lower (Kappa 0.45), compared to other studies which have reported Kappa 0.7-0.8. Analysis of results showed that disagreement arose in distinguishing facts and opinions, thus a further cycle of annotation is being undertaken following refinement of annotation guidelines and further training of annotators.

Abstract No. 970: Late Quaternary Environmental Changes in Al-Madinah Province, Western Saudi Arabia: Initial Evidences

Ghizayel Ragaullah Almuhammadi
Physical geography, University of Leicester, United Kingdom
drd1411@hotmail.com

Since a large part of Saudi Arabia has not been studied in relation to environmental changes occurring in the past (McLaren et al., 2009), our understanding of the palaeoenvironments in the Kingdom of Saudi Arabia remains very limited. Regarding the west of the Kingdom, where Al-Madinah is located our understanding of the environmental changes in the past is considered completely lacking. Therefore, studying the palaeoenvironments in this province was required. In the east of Al-Madinah province, there are different types of deposits and landforms preserved from the late Quaternary period, which reflect environmental changes as is the state in the Wadi AL Hinakiyah which contains sediments within its terraces. The aims of this study is to reconstruct the palaeoenvironmental changes through studying the sediment sequences preserved in these terraces to increase the understanding of the environmental changes in the west of Saudi Arabia and link this with other studies which are conducted on the surrounding areas. To achieve that, Samples were collected from the wadi terraces and a number of analysis techniques are being used to determine the properties of sediments, which are (Particle size analysis, Munsell soil colour charts and Optically stimulated luminescence (OSL) dating).

Poster: Health & Social Studies

(Short Abstract only)

Abstract No. 9: The role of feedback in unfamiliar face identification

Hamood Matar Alenezi
University Of Kent, UK
ha229@kent.ac.uk

Face matching refers to the process by which an observer has to decide if two simultaneous presentations of a face, such as a pair of photographs, belong to the same person or different people. This task can be surprisingly difficult when different pictures of unfamiliar faces, which are unknown to an observer prior to the task, are shown. Considering this difficulty, a question that arises is why observers continue to make errors in this task. A possible explanation is that we rarely receive feedback on our accuracy in the identification of unfamiliar people in real life. In this study, we therefore sought to examine the role of feedback in face matching directly, to determine if this could improve performance. In a series of six experiments, observers were either given feedback on their face-matching performance or not. To determine whether any feedback effects generalize, performance was then assessed with faces that had been seen previously with or without feedback, and for completely new faces. The results show that feedback can prevent a decline in face matching accuracy, whereby observers find it increasingly difficult to tell different facial identities apart over the course of a face-matching task when no feedback is given. However, the specific type of feedback that is administered is crucial for maintaining face-matching accuracy. The implications of these findings are discussed.

Abstract No. 18: Exploring the Influence of Time-Activity Patterns on Personal Exposure to PM2.5 in Different Microenvironments in Al Jubail Industrial City, Saudi Arabia

Mr Salem AlBalawi[1], Susan Hodgson[2], Anil Namdeo[3] & Tanja Pless-Mulloli[1]
[1] Institute of Health & Society, Medical School, Newcastle University, UK
[2] MRC-HPA Centre for Environment and Health, Imperial College London, UK
[3] Transport Operations Research Group, Newcastle University, UK
salem.albalawi@ncl.ac.uk

Introduction: Many epidemiological studies use outdoor concentrations of air pollutants as a proxy for personal exposure. However, exposure will result not only to these outdoor concentrations but to the concentrations in the different microenvironments in which a person spends time. In recent years technology has improved such that personal monitoring of indoor and outdoor micro environments is possible. While there is a growing literature on time activity patterns and micro-environment exposures for populations in the USA and Europe, little research on this topic has been carried out in the Middle East. Aims: This study aims to explore the influence of Time-Activity Patterns on personal exposure to PM2.5 in different microenvironments and to estimate exposure error introduced by using fixed-site monitoring stations as proxy for personal exposure in Al Jubail, an Industrial City in Saudi Arabia. Method: 28 students aged between 16-18 years old were recruited and asked to record their detailed movements on a time-activity diary, at 15 minute intervals, over 24 hours and to carry a small backpack containing a personal air monitor (SidePak AM510), to measure personal exposure to PM2.5, as well as a GPS device to help identify microenvironments, including travelling, outdoors, at school, at home, and inside other locations. Results: The majority of total time spent was indoors (88.7%) similar to figures reported in EU and North America studies. Indoor away from home microenvironments (shops, restaurants & gyms) had the highest PM2.5 concentrations (86 µg/m3) followed by transport (car, bus, taxi) (65 ug/m3) and outdoor away from home (park, beach) (52 µg/m3). Lowest PM2.5

concentrations were found indoors at school and home (29 μg/m3) and (36 μg/m3) respectively. All microenvironment categories exceed the reference concentration (25 μg/m3) of WHO air quality guideline. Conclusion: The time activity patterns and microenvironment PM concentrations in the Middle East are not well characterised. While there appear to be similarities between time activity patterns in this small population sample from the Middle East and Europe/USA, the exposure levels in this industrial city appear very high.

Abstract No. 71: The Role of Primed Similarity of Ethnicity Group and Age on Action Understanding and Imitation: Investigating Mirror Neurons in Saudi Children with ASD

Eiman Alismail *, Heather Ferguson
School of Psychology, University of Kent, UK
eha3@kent.ac.uk

Mirror Neuron Theory' is a brain process model which is based on a direct-matching model, that encodes the motor features, emotions, mental states, and the goal of observed actions onto the observers own motor system. Mirror neuron abnormalities and Autism Spectrum Disorder ASD have been empirically associated as they are alleged to represent the neural basis of deficits in social competence, language acquisition and imitative learning in ASD. Neurophysiological evidences nonetheless appear to validate the enhanced activity of mirror neuron when utilizing a familiar agent (person), during social interaction with ASD. Similar evidence suggested great influence of the individual's own culture, compared to other cultures on modulating the mirror neuron during social tasks; however, this has never been conducted on an ASD group. Other behavioural data showed that the use of typically developing peers as models in a social intervention setting with ASD was advocated for its significant outcomes, but the impact of age familiarity on modulating mirror neurons in ASD children was not directly investigated. This EEG study investigates the role of primed similarity of ethnicity group and age in facilitating action understanding and imitation in Saudi children with ASD, compared to a control group. In these two experiments we investigate the effect of observing a person from a familiar age group, and familiar ethnicity group, performing familiar actions, on the capacity of understanding and imitation of others' actions. Participants watched videos of people performing communicative gestures, crossing familiarity of the person's age (child/adult), or familiarity of the person's ethnicity (Saudi/European), with familiarity of the action (meaningful/meaningless). Processing social stimuli was indexed by mirror neuron activity, evidenced by Mu (8-12Hz) and Low beta (13-20Hz) desynchronization over the sensorimotor cortex. Behavioural performance was recorded through the imitation stage for off-line analyses. EEG results are discussed and supported by behavioural analyses.

Abstract No. 89: Formulation and Process Development of Oral Disintegrating Tablets (ODTs): A Systematic Investigation into the Role of Microcrystalline Cellulose (MCC) Using Direct Compression.

Hamad Alyami, Ali Al-khattawi, Afzal R. Mohammed
Aston Pharmacy School, Aston University, Birmingham, UK
almokhles123@hotmail.com

The last decade, has brought increased demand for oral disintegrating tablets (ODTs), and the field has become a fast growing area in the pharmaceutical industry because of the problem of dysphagia in paediatric and geriatric patients. The aim of this study was to formulate ODT with low disintegrating time by using different concentrations of microcrystalline cellulose (MCC). The main objective of this study was to investigate the feasibility of incorporating therapeutic doses of active drugs, such as, theophylline and ibuprofen, in ODTs based on MCC and mannitol as diluents at various compression pressures. The hardness, friability, and disintegration time, tablet index, and porosity, for each ratio was determined. Weight, diameter, thickness, volume, bulk density and true density were determined as well. Data groups were compared using one- way analysis of variance (ANOVA) and the significant differences were determined. It was found that at 2 tonnes pressure the tablet index (TI) was highest, as the higher the value of tablet index, the higher the hardness and lower is disintegration time. Results obtained from preparation of MCC (2%, 5%, 10%, 15%, and 30%), mannitol and 0.5% magnesium stearate showed that at 30% MCC, tablet index was highest with 15.7 seconds disintegration time and 94 Newton hardness. The next stage of the experimental set- up was to investigate the feasibility of delivering therapeutic doses of ibuprofen (insoluble drug) and theophylline (water soluble drug). The results showed that optimum formulation of ibuprofen ODT at a dose of 200 mg was achieved at 1.5 tonnes in the presence of 30% MCC. Based on experimental data, it was evident that concentration of MCC plays a major role in the formulation of ODTs.

Abstract No. 101: A study of the properties of silicon hydride based columns in relation to metabolite profiling.

Sami Bawazeer1, Saud Bawazeer2, Gavin Blackburn1, Tong Zhang1, David G Watson1
1Strathclyde Institute of Pharmacy and Biomedical Sciences, Glasgow, UK
2Umm Al Qura University, Makkah, Saudi Arabia
saud.bawazeer@hotmail.co.uk

In comparison with silica gel the properties of silicon hydride are very different with regard to chromatographic retention. In silicon hydride most of the surface silanol groups have been replaced by with Si-H. In addition the basic Si-H surface may be modified by hydrosilation where the Si-H bond is reacted with a terminal alkene in the presence of a platinum catalyst. In the current study three silicon hydride columns, Silica C (which has no modifying ligands on the Si-H surface), Phenyl Hydride and UDC Cholesterol, were studied for their ability to retain standard mixtures containing 80 standards and for their properties with regard to profiling the urinary metabolome. The columns offer a mixed retention mode having both reversed phase properties and hydrophilic interaction like properties. The two sequential sets of conditions provided conditions favourable to the retention of polar and non-polar compounds respectively. The Silica C column was most retentive for polar compounds and the phenyl column was the least retentive. Even relatively non-polar compounds such as pantothenic acid were more strongly retained in the Silica C column in HILIC mode with the alkyl chains on the surfaces of the Phenyl Hydride and UDC Cholesterol columns reducing the interaction with the Si-H surface. The columns provided coverage 4-500 metabolites in

urine. The Silica C column provided best performance in HILIC mode whereas as the Phenyl Hydride column offered good selectivity in reversed phase mode for steroid glucuronide conjugates and xenobiotics. The current efforts focus on optimising a the mobile phase modifiers to provide an optimum range of capacity factors for a wide range of metabolite types as well as trying to understand the exact mechanism for retention on this interesting family of chromatography columns.

Abstract No.113: Urogenital Function in Morbidly Obese Men Following Bariatric Surgery

Maha Aleid[1, 2], Jason George[2], Asif Muneer[2], Majid Hashemi[2], Selim Cellek[1]
(1) Translational Medicine, Cranfield Health, Cranfield University, UK
(2) Surgical Specialties, University College Hospital, UK
pharm180sa@hotmail.com

Objective: Bariatric surgery promotes weight loss by changing the digestive system's anatomy, and therefore limiting the amount of food that can be eaten and digested. Obesity is a complex psycho-social and endocrine disorder that may change urinary and erectile function independently. The aim of this study is to understand the effects of bariatric surgery on urogenital function. Design: This is a prospective study investigating the urogenital function in obese men aged > 30 years with a Body Mass Index (BMI) of >35 kg/m2 who undergo bariatric surgery. The assessment of urogenital function is performed using two questionnaires: International Index of Erectile Function (IIEF) and International Prostate Symptom Score (IPSS). The questionnaires are requested to be completed by the patients preoperatively and again four weeks, three months and six months after the surgery. The influence of bariatric surgery on urogenital function and BMI will be analysed using statistical modelling. Results: We have so far recruited 23 patients and 43.5% of them have reached 3 months post-op follow up. The preliminary results from these patients will be presented. Expected outcome: Successful completion of the study will examine for the first time the short-term effect of bariatric surgery on urogenital function in morbidly obese men and will investigate the relationship between urogenital function, insulin resistance and obesity.

Abstract No. 117: Effect of exercise duration and intensity on energy intake in healthy sedentary women

Ghalia Shamlan, M Denise Robertson, Adam Collins.
Department of Nutritional science, Faculty of Health and Medical Sciences, University of Surrey, Guildford, UK
G.shamlan@surrey.ac.uk

Appetite control (i.e. control of energy intake) is important for weight maintenance. Exercise contributes to the most variable component of energy expenditure but its impact is beyond the energy cost of exercise including physiological, behavioural, and appetite effects. Exercise is known to acutely influence effect appetite but evidence as to the independent effect of intensity is lacking. This study investigated the role of exercise intensity on appetite, energy intake (EI), appetite related hormones, fat utilisation and subjective measures of appetite. One hour after a standardised breakfast, 15 healthy normal- weight volunteers subjects undertook either 8 repeated 60 second bouts of cycling at 95% VO2 max (high intensity) or 30 minutes of continuous cycling, at a fixed cadence, equivalent to 50% of the participant's VO2 max (low intensity) in a randomised crossover design. Glucose, insulin, triacylglycerol (TAG), nonsaturated fatty acids (NEFAs) and glucagon-like peptide-1 (GLP-

1) were measured fasted, postprandial, and pre and post exercise. Satiety was assessed Subjectively throughout the study using visual analogue scales. Ad libitum intake of a pasta meal was measured at the end (3-h post-breakfast). No significant effect of exercise was observed on the ad libitum meal or 24 hour energy intake post-exercise. Hunger scores were significantly decreased following high intensity (HI) only. No significant differences in glucose, insulin and TAG between both intensities were observed. HI significantly increased fat oxidation compared to low intensity (LI) at 15 minutes post-exercise with a significant difference in NEFAs level. No significant differences were observed in energy intake of fat for 2 days post-exercise between two intensities. In conclusion, there are mechanisms and consequences of exercise in short and long-term appetite control; however, these mechanisms warrant further explanation. These results support the need for future research in to the role of in regulation energy balance, especially for obese people.

Keywords: Appetite, Exercise, Food intake, Energy Expenditure.

Abstract No. 125: The Effect of Caffeine on Perceived Exertion and Oxygen Uptake During Sub- Maximal Arm Cranking Exercise in Humans

Fahad R. Alslouli , & Ronald H Baxendale ,
[1] King Fahad Security College, Saudi Arabia, Riyadh, School of Life Science, The University, Glasgow, Scotlan, UK
fsl444@gmail.com

Caffeine's metabolic and performance effects have been widely reported. However, caffeine's effects on affective states during exercise are unknown. Therefore, the aim of this study is to investigate the effects of caffeine on the perception of effort and fatigue during prolonged upper limb exercise. A randomised double blind placebo controlled crossover design was used to compare the effects of caffeine at 7.5 mg/kg and a placebo of starch at the same dose. The caffeine was consumed in gelatine capsules 45 minutes before the start of the exercise test. Fifteen Healthy young males performed 20 min of arm exercise at an intensity equivalent to 90% of individual lactate threshold, determined from a standard ramp-incremental exercise protocol. Physiological as well as rates of perceived exertion using Borg (0-10) RPE scale and Visual Analogue Scales (VAS) were assessed during the last 20 seconds of each 5 minutes of the test and during three stages of post exercise. A 2-way repeated measures ANOVA was used to test the differences between the caffeine and the placebo responses. Caffeine ingestion produced no significant effect on RPE, (VAS), blood lactate concentration, peak oxygen uptake or peak minute ventilation. However, heart rate (HR) levels (mean +/- SD) were significantly higher after caffeine consumption than after placebo use at 15 min: (143.7) +/-(16.1) (b•min-1) vs (134) +/-(15) (b•min-1), at 20 min: (149) +/- (16.4) (b•min-1) vs (136.5 +/- 15.4) (b•min-1). Our findings indicated that except for the significant differences in HR responses, no noticeable variations were found in gas exchange, blood lactate or RPE responses between caffeine and placebo arm exercise trials.

Abstract No. 134: Overview of Home Health Care Program in Saudi Arabia

Soltan Jaber Algamdi
Public health and medical research, Salford university
soltanjaber@hotmail.com

The program of Home Health Care (HHC) is an integrated services program, which is composed from a series of interrelated health care procedures. The major function of the HHC program is to provide healthcare for individuals and families in their homes. Generally, home health care services are new service to the Saudi context. In the past, the focus of health activities was directed to hospital-based services. In addition to which the majority of health professionals including doctors and nurses are expatriates, thus the healthcare services delivered in Saudi Arabia need more evaluation so that decision makers may judge the extent to which the new services are successful? This issue generates a lot of contemporary challenges including many aspects within home health care. For instance, the growing in the pervasiveness of chronic diseases, caducity of inhabitants, and hospital expenditure, transmission of infections risks and other matters, where such factors threaten the patient's comfort and satisfaction level. It is true that home health care in Saudi Arabia is in its early stages, and in general programs which exist are based only on hospitals. On the other hand, what makes home health care featured within Saudi Arabia distinctive are the inimitable cultural and religious considerations. To date the number of patients in home health care program (HHC) is more than 20,000 from the time when it was introduced. Since the middle of the twentieth century Saudi Arabia has completed remarkable steps in order to improve the healthcare infrastructure. In view of the fact that there is a need for specialized health care employees in home health care there will need to be preparation for home health care be included in the student, graduate, and ongoing education of general practitioners as well as more research and development in such segments. Within the previous phase, a set of educational institutes and research enterprises and several home health care centers have been founded. Added to that, more training programs are taking place in the development of HHC workforces. The Saudi practice makes it apparent that with strong economic support as well as scientific research, it should be possible to put up advanced facilities as well as services, and fill up them with a diverse and highly skilled workforce able to provide home health care and clinical outcomes at a high level of quality and patient satisfaction. The real challenge revolves around the possibility of making the system turn out to be well-organized, effective, and sustainable.

Abstract No. 249: The Relationship of Workplace Bullying and Nurses' Intentions to Leave Organisations

Wisam Essam Kaifi
School of nursing, midwifery & social work, University of Salford, Salford, UK
wkaifi@yahoo.com

Workplace bullying is a significant and provocative issue in the nursing profession. This topic has been researched in different countries for many years but there is limited research conducted in the Middle East, especially in Saudi Arabia. Nursing in Saudi Arabia is in its infancy period and so it is important to discuss this issue and increase nurses' awareness in order to maintain the well being of the current Saudi workforce. Looking at a recent literature Vessy et al. (2009) describe this behaviour in the workplace as a "silent killer" because it is hidden and invisible. Moreover, the effects of workplace bullying when it appears are so severe. The purpose of this study is to contribute to the literature on identifying and understanding bullying behaviour. This processed by selecting critically evaluated

quantitative studies in this systematic review to examine the negative effect of bullying on nurse turnover or intention to leave. Then, the rest of the study will be supported by including a key paper from a qualitative study to compare different healthcare context dealing and managing with this issue effectively. However, the results shows clear significant relationship, understanding this problem will contribute in the future of the status of the Saudi nurses in a Saudi health care setting. The implication of this study will contribute in motivating the newly hired nurses to enter the workforce. Finally, this review could contribute to the process of initiating a policy or guidelines in the Saudi context to prevent this behaviour and thereby maintain the current workforce.

Keyword: workplace bullying, nursing, and intention to leave.

Abstract No. 268: Protecting the Human Tear Film from a Dry Climate Using Hp-guar Tear Supplement

Ali Abusharha, Ian Pearce
Department of Vision Sciences, Glasgow Caledonian University, Glasgow, UK
ali.ksu9@gmail.com

Purpose: This study aims to assess the ability of two different treatments techniques to manage tear film disruption that results from exposure to a low relative humidity (RH). Method: Two environmental conditions (40%RH/21ºC and 5%RH /21ºC) were created using a controlled environmental chamber. At 5% RH Systane eye drop was instilled in two different modalities, Protection and Relief. At protection visit the drop was instilled before the exposure, while in relief technique, subjects were exposed to low RH for 15 minutes, and then the Systane drop was instilled. Ocular surface temperature (OST), evaporation rate, lipid layer thickness (LLT), noninvasive tear breaks up time (NITBUT), tear production, osmolarity and ocular comfort were assessed in normal and dry environmental conditions with the use of Systane in two different treatment modalities. Result: All tear film parameters (except OST) were significantly affected by the exposure to low RH. The use of Systane in both techniques resulted in improvement in NITBUT and ocular comfort during exposure to 5%RH ($p<0.05$).Tear osmolarity ($p=0.01$) and LLT ($p=0.018$) were improved in protection technique while in the relief method tear production was increased significantly ($p=0.01$) in compare to 5%. Conclusion: Both treatment mechanisms were shown to be effective. It was apparent that using Systane for protection was superior to relief for osmolarity and lipid layer thickness. Therefore, for maximum benefit patient should be advised to use Systane prior to exposure to dry condition, such as this found in commercial aircraft.

Abstract No. 291: Sustainable Storm water Management for Urban Areas in Saudi Arabia

Ali Alahmari, Sue Tapsell, Christophe Viavattene, Simon McCarthy
Flood Hazard Research Centre, Middlesex University, United Kingdom
A.Alahmari@mdx.ac.uk

Flood risk management and water management have grown in importance over recent decades, driven by climatic changes coinciding with urbanization. Although Saudi Arabia is located within an environment characterised by dry climatic conditions, some Saudi cities have been exposed to short durations of heavy rainfall resulting in sudden surface water flooding. This has had a significant impact, including the destruction of infrastructure, resulting in human, material and economic losses. Key issues that might be contributing to the emergence of this issue in Saudi could be the rapid development of cities and

urbanisation; the lack of a storm-water drainage network system covering urban areas; and certain rules and regulations which exist regarding the mechanism of dealing with rainwater and induction to control the path of the water. It is uncertain if the full range of possible flood management measures is being considered in Saudi and the reasons behind this both at a professional and public level. This research will undertake qualitative and quantitative social research in two Saudi cities affected by continued flood events. In the context of wider flood risk management measures the research will investigate the potential of adopting various types of Sustainable Urban Drainage Systems (SUDS) for urban areas in Saudi Arabia. Through the views of stakeholders the SUDS techniques will be explored to reveal their physical appropriateness and the governance and social contexts that might enable their consideration in Saudi. Indirectly the study also explores issues surrounding undertaking social research in Saudi Arabia.

Abstract No.301: Assessment of the Effect of Cinnamon Supplement on the Glycaemic Index of a Starch Rich Food

Tahany Saleh Aldayel
University of Surrey, UK
Umwateen@hotmail.com

Many traditional medicinal herbs have been used for the treatment of diabetes mellitus (DM) especially in developing countries(1). Cinnamon contains many active compounds such as the procyanidins, which may improve glucose metabolism and insulin sensitivity(2,3). The aim of this study was to determine if the ingestion of Cinnamomum cassia (C. cassia) supplements, just before the consumption of a carbohydrate-rich food, could reduce starch hydrolysis and therefore affect the glycaemic response in vivo. A cinnamon supplement (GOOD'N NATURAL® C. cassia) was used. New capsules (Vcaps®capsules) were filled with cinnamon so that the placebo and cinnamon capsules appeared identical. The cinnamon dose used was 1 g. Each participant consumed each test food on two separate occasions after an overnight fast. The cinnamon or placebo capsules were ingested with water (100 ml) 15 min, prior to the test food (cornflakes). Then, a portion of cornflakes containing 25 g of available carbohydrate was served to participants with water (150 ml). On the three other occasions, participants consumed the control food (glucose drink), which was 25 g of glucose in 250 ml of water. Capillary blood samples were collected after an overnight fast (-15 min), after which time participants were asked to ingest either the cinnamon or placebo capsules (time 0 min). Further blood samples were taken at 15, 30, 45, 60, 90 and 120 min. No significant differences ($p>0.05$) were seen in glycaemic response at the different time periods, or in the incremental area under the curve between C. cassia and placebo. Furthermore, cinnamon had no significant effect ($p>0.05$) on fasting plasma glucose levels compared to placebo. Further research is currently underway to investigate the health benefits of cinnamon at higher doses.

Abstract No. 334: The Prevalence of Physical Activity and Sedentary Behaviours in Saudi Arabian Youth: Rural versus Urban Variations

Anwar Al-Nuaim
Faculty of Physical Education, King Faisal University, Al-Ahsa, Saudi Arabi
anwer181@hotmail.com

Introduction: Generally, only a limited number of studies have attempted to explore active and sedentary behaviours of young people living in Saudi Arabia. Moreover, this is particularly the case with regard to studying differences between diverse Saudi communities due to socioeconomic status and geographical locations. The aims of this study were: a) to explore the lifestyle of young people living in the Eastern Province of Saudi Arabia; b) to investigate differences due to gender, age, school type and geographical location. Methods: A total of 1270 youth (15–19 years) from different geographical locations (i.e., urban, rural farm, and rural desert "Bedouin") volunteered to participate in this study. They completed a self-report questionnaire that contained 47 items relating to patterns of physical activity (PA), sedentary activity, and eating habits. The questionnaire allows the calculation of total energy expenditure in metabolic equivalent (MET-min) values per week. Body mass index and waist circumference measurements were recorded, and weight status was classified according to International Obesity Task Force criteria. Results: Significant differences in the PA levels and weight status of youth were evident with regard to gender, geographical areas and type of school. Youth living in rural desert were less physically active than those living in urban ($P = 0.023$) or rural farm environments ($P = 0.001$). Also, youth living in rural desert had a higher BMI than those living in urban ($P = 0.004$). Additionally, PA levels appeared to decline with age with males being more active than females throughout all groups of youth regardless of socioeconomic background or geographical location. Conclusions: The findings of this study provide an insight into the severity of the prevalence of obesity and inactivity in Saudi Arabian youth. Whilst inactivity, sedentary behaviour and obesity were prevalent throughout all Saudi youth, poor health and lifestyle habits were particularly evident in the rural desert and female populations.

Abstract No. 374: Social Anxiety and Quality of Life in Adolescents

Saleh Alkhathami[1], Hossein Kaviani[2] and Emma Short[3]
[1]Institute of Applied Social Research, University of Bedfordshire
[2]Department of Psychology, University of Bedfordshire
[3]Department of Psychology, University of Bedfordshire
ssm6617@hotmail.com

The objective of this research is to examine how social anxiety and maintenance of quality of life are associated in adolescents in one 'Eastern' and one 'Western' country, namely the United Kingdom and Saudi Arabia. We first examined validity and reliability of Arabic versions of the scales used in this research. It was hypothesised that social anxiety and QOL are moderated by other factors such as social interaction, cognition, culture, gender and educational level. Method: Study method conducted 'translation and back-translation' methodology to provide Arabic versions of six scales, variously on social anxiety (including different aspects), QOL, and individualism-collectivism, from English into Arabic. Moreover, a pilot study was carried out to examine applicability of the scales in target population. A sample of adolescent students completed the questionnaires. Results: The Arabic versions of instruments proved to have good reliabilities, convergent validity, and indicate high values of internal consistency. Besides, results exhibited that the relationship between social anxiety and QOL was partially moderated by other variables such as cognitive, social interaction and

cultural correlates. Conclusion: Psychometric properties of the instruments provide support for the application of all instruments among the Arabic-speaking adolescent population. To our knowledge, this study is the first account to report acceptable psychometric properties these measures in target population.

Keywords: Social anxiety, social phobia, quality of life, collectivism and individualism.

Abstract No. 398: Effectiveness of exercise therapy for patellofemoral pain: a systematic review

Mazen Mohammed Alkasem
University of Salford, UK
m.m.alkasem@edu.salford.ac.uk

Introduction: Patellofemoral pain syndrome (PFPS) is a musculoskeletal condition presenting with anterior knee pain or pain behind the patella (retropatellar pain) which frequently seen in sport, physiotherapy and orthopedic clinics (Collins et al. 2010). It is a commonly occurring amongst athletes and non-athletes with incidence estimates of 60% within the athletic population and 25% with in general population. Exercise therapy considers one of the most physiotherapy interventions of PFPS (Herrington et.al 2006 & Taunton et.al, 2002). Objective: to investigate the efficacy of therapeutic exercise on patients with PFPS. Methods: A systematic review of randomised control trials (RCTs) and clinic trials to identify whether exercises are effective or not in the treatment of patients with patellofemoral pain syndrome. Study Selection: Criteria for inclusion of studies that exclusively recruited patients diagnosed and treated with patellofemoral pain syndrome or anterior knee pain and outcome measures were specific to pain reduction and knee function. Data Extraction: PEDro has been utilized to identify and review literature. Twenty RCTs studies reviewed from 2004 to 2013 with an average of PEDro score of 6.11/10 In terms of methodological quality for Eighteen RCTs studies, 50% have moderate evidence, none of the RCTs have strong evidence and just two studies have insufficient evidence. None of the RCTs have blinded subjects and therapists but 94.4% of the studies were randomly allocated the subjects. Exercise therapy is effective on improving function of knee joint and reducing pain at short term and long term for patients with patellofemoral pain syndrome.

Keywords: The key words used were: “patellofemoral pain syndrome” OR “anterior knee pain” AND “treatment” OR “exercise therapy” OR “intervention” OR “rehabilitation” OR “strength”.

Abstract No. 413; Enhancing social behaviours regarding the reuse of waste packaging

Shaima Badahdah
ba_bader1@hotmail.com

Social aspects play an important role in enhancing the reuse of waste packaging. This paper aims to propose an integrated household waste management model based on a system dynamics (SD) model and focus on social factors that increase behaviour intentions. This paper provides important new findings about the different social attitudes and actions that lead to minimise waste packaging volume by enhancing the reuse of waste packaging. This paper selects a quantitative approach SD method that offers a means by which to highlight the dynamics and interrelationships among the different social factors in reusing waste packaging. The objectives of this paper are: (i) to study the effectiveness of improving social factors on behaviour intention to reuse waste; (ii) to investigate the behavioural intentions of people regarding the reuse of waste. This paper analyses experimental data that provide a

useful insight about the model which in future can be referenced by policy makers at the local and national levels in order to improve solid waste management systems. Furthermore, the model exhibits a platform for debate on the potential and system consequences of various structural and policy for developing solid waste management system.

Keywords: Social behaviours, waste packaging, Jeddah

Abstract No. 450: The Effects of Listening on Halance Control

Mohammad Alshamrani, Ruth Brooke, Nick Thyer
School of Healthcare, Faculty of Medicine and Health, University of Leeds, Leeds, United Kingdom
hcmaa@leeds.ac.uk

Regulating balance is a complex process which involves the somatosensory, the visual and the vestibular systems and controlled by the brain. Recently other influences on balance have been reported, namely: attention and sound. The primary aim of this study is to investigate the effects of an auditory task on balance using a dual-task paradigm. 14 normal volunteers were asked to complete two balance tasks: normal stance with eyes open and Romberg stance with eyes closed with and without a concurrent auditory task. Balance performance was measured using a force plate and the centre of pressure was computed. This preliminary data revealed increased body sway for both balance tasks in the presence of a concurrent auditory task compared to their baselines in the M-L direction but not in the A-P direction. The deterioration in balance performance in the dual task conditions is explained by theories that assume competition for cognitive resources.

Keywords: Balance Control, Dual-tasking, Attention, Hearing Impairment.

Abstract No. 520: The Consistency of Kinematic, Kinetic, and Ground Reaction Force Variables Collected During Running and Cutting Manoeuvres

Alenezi, F, S.; Herrington, L, C.; Jones, P, A., & Jones, R, K.
School of Health Sciences, University of Salford, UK

Abnormal biomechanics during sports activities can lead to increased joint-reaction forces, an increased valgus angle and increased load at the knee. The majority of studies that assess lower-limb biomechanics commonly use 3D motion analysis techniques, which allow clinicians and researchers to quantify all three planes of joint motion during complex tasks. The purpose of this study, however, was to compare the within-day and between-days reliability of discrete kinematic, kinetic and ground reaction force (GRF) data for the knee joint collected during running and changing direction tasks. Sixteen uninjured recreational athletes, 8 males and 8 females, took part in three testing sessions. Their mean +/- standard deviation age, height and mass was 26.2 ± 5.1years, 1.67 ± 7.1 m, 67.1 ± 10.5 kg, respectively. Each participant underwent two sessions on the same day and another session one week later. A ten-camera motion analysis system (Qualisys, sampled at 240 Hz) and a force platform (AMTI, sampled at 1200 Hz) embedded into the floor, was used to collect kinematic and kinetic data during the support phase. For the running trials, subjects were required to touch the force platform with their right leg while running along a 10 m runway. For the cutting task, they were required to contact the force platform and immediately turn 90° to the left and run 3 metres in that direction. Approach speeds for both tasks were required to fall between 3.5 and 5.5 m•s-1. ICCs were lower as compared to within-day ICCs. Specifically, 7 of 12 between-day measures fell below an ICC value of 0.75 compared to 2 of

12 within-day measures. Transverse plane ICCs ranged from 0.40 to 0.80, whereas frontal & sagittal planes ranged from 0.42 to 97. GRF data were more reliable within day than between days as compared to kinematic and kinetic data. These kinds of investigations should be performed before undertaking studies which involve repeated measurements of the same participant over time.

Keywords: running, biomechanics, 3d analysis, changing direction

Abstract No. 531: Surveying current health promotion activity and perceptions of the obesity problem in Jeddah, Saudi Arabia

Samihah H. Altuwairg,
Swansea University
sht1966@gmail.com

This study is a part of a doctoral project, which aimed to find out parents' thoughts and knowledge about healthy and unhealthy food, child weight, perceptions of obesity activity levels, and thoughts on what should be done in schools. The data were taken from questionnaire which included those concerning to knowledge, opinions, feelings, attitudes, beliefs and values regarding healthy eating or physical activity. This study represents an attempt to identify parents' attitudes and perceptions toward healthy eating habits and current health promotion to prevent childhood obesity. A survey was given to 1000 parents from different social and economic classes in Jeddah, Saudi Arabia. Approximately 400 of them were filled. The majority of parents believed strategies to promote healthy weight should start early in a child's life. All parents think that the school must pay attention to gain children healthy eating habit. About 91 % of parents agreed to make lifestyle changes to help their children gain healthy weight. Almost all of parents find that childhood obesity a very serious problem. More than half parents think that their child has normal weight, in contrast, about 12% of think that their children are overweight or obese.

Keywords: health promotion activity, Obesity problem, Jeddah.

Abstract No. 541: Assessing the quality of life for Saudi patients with aphasia after stroke

Adel Fahad Aljadaan
Institute of Neurosciences, Newcastle University
adelj911@yahoo.com

Background: In recent years, Health Related Quality of life (HRQoL) measures have been used increasingly to evaluate the effectiveness of services or intervention programs. For people with chronic disabilities, such as aphasia, there is a lack of HRQoL measures which are needed for their rehabilitation programs. The literature reveals that there are a few studies of the abroad Quality of life (QoL) or the specific HRQoL in Arabic and Islamic culture in general and on people with aphasia (PWA).in particular. Also no single study of QoL for Saudi PWA was found. Aims: This study aims to explore factors that affect HRQoL for Saudi PWA after stroke including issues which are specific to Saudi society such as cultural and religious issues. Also it aims to develop an assessment tool for QoL for Saudi PWA after stroke, which is examined to be valid and reliable; furthermore, to explore the possible predictors of QoL for those PWA. Methods: Current study is a cross-sectional study using mixed method approach. There were three phases of this study involving developing the questionnaire, piloted it, then applying it in the main study twice on 54 Saudi PWA. Data

analyses were performed including factor and regression analysis. Finally applying the short questionnaire resulted on 21 Saudi PWA. Results: interestingly the factor of religious activities and duties was dropped as a result of the analysis. The main factors of QoL for Saudi PWA were physical and daily life activities, communication and social and family relationships. The assessment tool is proven to valid and reliable. The significant predictors of QoL for those patients were age, severity, social and economic status, companion and educational level. Conclusions: More studies are needed in this field with PWA. The religious factor may be important in the patient's life but not affecting their QoL.

Abstract No. 617: Why Some Contact Lens Care Solutions are More Comfortable?

Raied Fagehi, Alan Tomlinson, Velitchko Manahilov.
Department of Vision Sciences, Glasgow Caledonian University, Glasgow, UK
Raaied1@gmail.com

Purpose: To investigate the wetting of a soft contact lens (SCL) after storage in various multipurpose solutions (MPS) (compared to wetting with the pack solution), to assess its effect on eye symptoms. Methods: Ten SCL wearers (age range 26.6± 6.3 yrs) were included in this study. A Doane interferometer captured images of the pre-lens tear film on a single type of SCL, ACUVUE OASYS (Johnson & Johnson). The SCL wettability was measured after storage in the pack solution or one of five MPS: Opti-Free EverMoist and Express (Alcon), COMPLETE MPS (AMO), ReNu and Biotrue (Bausch & Lomb). The wettability was measured after 15 min (time A) and 8 hours (time B) of wear of the lens by each subject. Four previously described parameters of wettability were assessed: onset latency (OL), the time to first break-up; drying duration (DD), the duration of drying after first break-up; the maximum speed of drying (MS); and the time to reach this maximum speed (PL).* The OSDI questionnaire was completed by the subjects, at each visit, to evaluate the subjective response to the solutions. Results: There was no significant difference between CL wetting measured after storage in the MPS compared to the pack solution for all four wetting variables (Friedman test, $P>0.05$). However, storage of the lens in some MPSs showed more sustained wetting after 8 hours wear, with similar values at (A) and (B); for OL, ReNu and Complete; for DD and MS Biotrue, Express and Complete; and for PL ReNu, Express and Complete. The OSDI questionnaire showed less discomfort after 8 hours wear (at B) with storage in all the MPSs compared to the pack solution ($p< 0.02$). Conclusions: The effect of all MPS on the initial wetting of a SCL (compared to that with the pack solution) was limited. However, the ability to sustain wetting of a SCL over 8 hours of wear was better with Biotrue, Opti-Free Express and Complete. The wetting parameter of drying duration gave the closest objective measure to subjective responses to lens wear.

Abstract No. 629: Reducing Vulnerability Factors to Disasters in Riyadh Province

Saud Alshehri *, Yacine Rezgui, Haijiang Li
School of Engineering, Cardiff University, Cardiff, United Kingdom
saudss@hotmail.com

Natural disasters, some of which are becoming even more frequent, have affected Saudi Arabia a number of times in the past few years. The aim of this study is to investigate the factors that can help to prepare a readiness strategy for the management of these disasters. This will help to create strategy on community level that will have a greater capability to recover from the negative impacts of the disaster. The method used for the collection of data for this study is to employ a survey. The region of focus is Riyadh Province and a total of 414 responses were collected with this questionnaire in duration of two months starting from 5/

2012. The results of the research indicate that numerous factors such as faith, education level and willingness are necessary of disaster risk reduction. The research data is limited amongst people having the email facility; therefore people without email services are not included.

Keywords: Riyadh Province, Disasters, Risk reduction factors.

Abstract No. 662: Assessment of factors that promote or inhibit the implementation of nurse-led model of chronic care in Kuwait

Muna Abdulmohsen Alshammari
Faculty of Health Sciences University of Southampton, UK
alshammari_manga@yahoo.com

Introduction: The prevalence of chronically ill patients in Kuwait is on the rise, which has led the Medical Outpatients' Departments in Kuwait hospitals to become overcrowded. Whereas some of these patients need the input of a physician, a trained nurse could effectively manage some of these cases. There are already models of chronic care that have a significant role in the provision of care for patients with chronic diseases, some of which are led by nurses. Nurses in Kuwait have the knowledge and skills necessary for the provision of care for patients who also need to become able to self-manage their conditions. Aims: This research will investigate promoters and/or inhibitors for the implementation of such a model of chronic care in Kuwait. It will explore views of higher-level personnel in the Ministry of Health, senior nursing staff, and physicians in relation to the application of the model. Methods: A qualitative research will be conducted in two-stages by approaching different methods of analysis. Thirty-six semi-structured one-to-one interviews will be conducted in six general hospitals in Kuwait with a sample of seniors and administrative personnel and healthcare providers in the Ministry of Health. Results: The analysis will identify the different views and perceptions toward the model to be applied. These opinions are going to be considered as promoters or inhibitors of implementation of the proposed model. These factors are also going to be analysed and interpret in the light of theory of implementation. Conclusion: Chronically ill patients need a focused care that is individualised in order to achieve better health outcomes. Models of chronic care have shown significant progression in health of patients with chronic conditions especially those led by nurses. The proposed model will face some obstacles, but also will face some facilitators that will either enable the model or hinder its application.

Abstract No. 702: Interventions use during the second stage of labour: An exploration of what affects their use in Jeddah, Saudi Arabia

Roa Altaweli
City University London, United Kingdom
roa.altaweli.1@city.ac.uk

The increase in medical intervention has had a significant influence over the last century in western countries, and such practices continue to increase despite efforts to encourage normal childbirth. The aim of this project is to explore the use of interventions during the second stage of labour among healthcare professionals in Jeddah, Saudi Arabia and determine what factors may be influencing their use. It builds on the findings of my Master's dissertation, which identified a high rate of routine interventions during labour and birth. To fulfil this aim, the research includes data from an exploratory qualitative study, conducted using an ethnographic approach. Data collection methods included participant observations of 19 labours and births and semi-structured interviews with 29 healthcare professionals

comprising 10 obstetricians, 12 midwives 6 nurses and 1 nurse-midwife from two government hospitals in Jeddah. In addition, the hospital labour and delivery ward policies and guidelines from those hospitals were also collected. Data were collected between October 2011 and September 2012, after seeking ethical approval from City University London and from each of the hospitals involved in the study. Qualitative data analysis software (QDAS) (Atlas.ti 7) was used for the data analysis. Key findings to be discussed includes the use of continuous Electronic Foetal Monitoring (EFM), bladder catheterisation, intravenous infusion, companionship, episiotomy practice, lithotomy position, mobility, duration of second stage of labour, directed pushing and instrumental delivery. This study intends to add the body of literature which aims to explain the way in which healthcare professionals practice. This study will have specific implications for healthcare professionals, policy makers and managers of maternity services, which will help them, understand the reason behind the use of interventions during the second stage of labour which will raise their awareness to their labour ward practices, with the potential outcome of improving women's care.

Abstract No. 768: How are Familial Relationships Changing Between Saudi Family Members and What is the Impact of the Internet?

Asma Alolyan
Institute of Health and Social Change, Manchester Metropolitan University, UK
Asma.alolyan@stu.mmu.ac.uk

The global spread of technology, and, in particular, the Internet has had a major impact on how we communicate and the breadth and type of those interactions. However, there are potential negative consequences too. Some of the concerns are about heavy usage and how this might lead individuals to neglect their face to face interaction leading to problems with forming and maintaining social relationships. Many studies on this topic remain inconclusive with researchers indicating very different findings. The second problem is that the use of the internet by young people in non-Western societies (traditional societies) may increase the extent to which they absorb new social concepts and norms which may lead to inter-family conflicts and the breaking-up of traditional social systems. This study seeks to explore the above issues in a Saudi Arabian context. Quantitative data was collected from 300 individuals (aged from 18 to 28) who were students randomly selected from two universities: KSU and PNU; and from various high schools. Qualitative data was obtained from a second group drawn from the parents of the first group (aged 28 years and above). Preliminary results of questionnaire indicate that time spent on the Internet was not predictive of negative impact on individual's relationship with their family /society nor was it predictive of depression, anxiety, or social isolation. However, the questionnaire results indicate that there is relationship between gender, marital status, and occupation and the number of hours per day they spend on the internet.

Abstract No. 779: Effect of Vitamin D3 Supplementation on Markers of Glycaemia and Oxidative Stress in Saudi Women with Poorly-Controlled Type 2 Diabetes Mellitus

Alaa Hatim Qadhi, Nessar Ahmed, Emma Derbyshire
Manchester Metropolitan University, Manchester, UK
a.h.qadhi@gmail.com

Background: Pancreatic beta cells express vitamin D receptors as well as expressing the vitamin-D3–activating-enzyme (1-alpha-hydroxylase). Thus vitamin D supplementation could play a practical role in reducing comorbidity in type 2 diabetics by heightening insulin sensitivity. The answer from intervention studies has been mixed so far. Among the Saudi population, vitamin D deficiency and obesity are prevalent (Al-Daghri et al., 2012). Thus it is the ideal population to study to determine whether vitamin D3 supplementation can reduce parameters of glycaemia and oxidative stress in T2DM. Study design: This double-blind randomized controlled study will recruit approximately 120 female patients with poorly-controlled type 2 diabetes mellitus T2DM (defined as a fasting glucose despite treatment) from a hospital outpatients in Saudi Arabia and randomly allocate them to either placebo, 50µg D3, 100µg D3 intervention groups. Anthropometric data and blood will be collected at baseline and at 16 weeks. Methods/techniques: Blood serum will be measured for glycated haemoglobin, insulin, fasting glucose, total cholesterol, LDL, HDL and serum 25(OH)D. All serum measurements will be analysed in an automated electrochemiluminescence assay. Oxidative stress biomarkers will include F2-isoprostanes, malandialdehyde and total antioxidant levels, which will be measured using High Peformance Liquid Chromatography. AGEs will be measured using an AGE reader. Typical vitamin D intake will be assessed using 24-hour Food Recall. The outcome will be analysed using the Mann-Whitney test. Conclusions: Ultimately it is hoped that the study will determine if vitamin D supplementation has a role in reducing glucose levels and reactive oxygen species in type 2 diabetes mellitus in practice and whether there is a dose-dependent relationship.

Abstract No. 783: Factors Contributing to Nursing Errors in Saudi Arabia

Maram Ahmed Banakhar
University of Manchester, UK
Mbanakher@yahoo.com

BACKGROUND: Globally there has been growing concern regarding medical oriented errors arising in clinical practice; however, little is known about nursing errors, particularly within a Saudi Arabian context. This study highlights how and why nursing errors occurred in one healthcare organisation in Saudi Arabia. METHODS: A qualitative case study was carried out in a teaching hospital in Saudi Arabia. The data were generatd following a retrospective review of six-months worth of incident report documentation supported by ndividual and focus group interviews undertaken with nurses, doctors, nurse managers and quality department staff to generate a multi-perspectival review of the case. RESULTS: Analysis of the data revealed that nurses, doctors, nurse managers and quality staff all perceived diverse factors contributed to nursing errors. For example, impaired communication, failure to follow hospital policy, presence of a blame culture and lack of feedback following reported incidents were seen as key organizational factors leading to nursing errors. In relations to environmental factors: errors commonly occurred when nurses were distracted, had heavier than normal workloads or were required to extend their nursing role. Morover, dilatory behavior from doctors were also identified by nurses and managers alike as a source of additional stress leading to the manifestation of nursing errors. CONCLUSIONS: Organizational, environmental and personal factors contribute to nursing

errors the analysis of which can be used as the basis for finding new solutions to help improve nursing and healthcare practice in Saudi Arabia.

Abstract No. 797: Public Health Implication of Novelty Sweets on Children

Ayman Aljawad
jawadayman@yahoo.com

The expansion of the novelty sweets market in the UK has potentially significant public health implications in children and young adults as their high sugar and organic acid content may contribute towards dental caries, dental erosion and obesity. The aims of conducting this study are: 1-To identify the most commonly available novelty sweets, their prices and where they are sold. 2-To assess in vitro the erosive potential of novelty sweets by measuring the pH, neutralisable acidity and tooth surface loss of the ten most commonly available sweets. 3- To assess the sugar content and of the novelty sweets. 4- To assess the sour and sweet sensory taste thresholds. 5-To assess the attitude of shopkeepers towards selling novelty sweets A shortlist of the most popular novelty sweets was identified by undertaking a scoping visits of shops located in close proximity to five schools in Cardiff. In addition, shops in Cardiff city centre and two supermarkets in the central Cardiff area were visited. The pH assessed was using an electronic pH meter, and the neutralisable acidity of the top ten novelty sweets were measured against 0.1M NaOH at room and body temperatures. Erosion test was performed of novelty sweets, orange juice as a positive and negative control groups on human teeth, Conclusion: A wide range of novelty sweets were available within a 10 minute walking distance of secondary schools in the Cardiff area. The prices of novelty sweets were well within the pocket money available to children. The majority of the locations where novelty sweets were sold were accessible to all ages of children. All novelty sweets are acidic with pH lower than 5.5 which is the critical pH value of enamel dissolution.

Abstract No. 831: Initial Hydrodynamic Study on Two Polysaccharide Related Substances: Gum Arabic and Lignin

Qushmua E. Alzahrani[1,3]*, Gary G. Adams[2,3], Tabot M.D. Besong[2,3], Richard B. Gillis[2], Arthur J. Rowe[1], M. Samil Kok[2,4] and Stephen E. Harding[2]
[1]Taif University, Taif, Saudi Arabia
[2]School of Biosciences, Faculty of Sci. NCMH Building, Sutton Bonington, LE12 5RD, UK, [3]Faculty of Medicine and Health Science, School of Health Sciences, University of Nottingham, UK. 4Izzet Baysal University, Bolu, Turkey
qushmua@hotmail.com

Although the complex chemical structures and chemical properties of gum arabic and lignin, as natural polymers, have been widely studied, their physical properties have been not so well understood. The aim of this study was to provide more information about the physical properties of these polysaccharide-related substances: gum arabic and three different commercial types of lignin (Soda, Kraft and Alcell) using dynamic light scattering (DLS), viscometry, analytical ultracentrifugation (AUC) and (for gum arabic only) size exclusion chromatography coupled to multi angle laser light scattering (SEC-MALLS). Gum arabic was studied in aqueous solution at different ionic strength to monitor polyelectrolyte effects. By contrast lignin was studied in dimethyl sulfoxide (DMSO) to overcome solubilisation problems. Surprisingly despite their different macromolecular structure and solvent, the intrinsic viscosities are very similar, between 20-23 ml/g: although the sedimentation behaviour is very different. An early indication of the conformations of both types of molecule is given: the data for gum arabic appears consistent with a flexible coil, and the

extension of the lignin has been estimated using the routine ELLIPS1. The more ionic the sample, the more molecular mass was found. Gum arabic has a random coil, flexible shape which is in ‘’conformation zone D’’ (see i.e. Tombs and Harding, 1998). Gum arabic and all three lignins had approximately the same intrinsic viscosities. All lignin samples (Kraft, Soda, Alcell) have approximately the same shape.

Abstract No. 862: Correlations Between Human Tongue Muscle Strength and Mechanical Properties of Handling and Manipulating Food Bolus

Woroud Abdulrahman Alsanei and Jianshe Chen
The School of Food Science and Nutrition, University of Leeds, UK
j.chen@food.leeds.ac.uk

Foods are complicated systems which not only meet nutritional requirements for human beings but also provide individuals with pleasure. However, increasing the prevalence of dysphagia (swallowing difficulties) and its management are relatively common as the result of illness and subsequent general weakness. However, food and pharmaceutical industries are under growing pressure to design and provide quality food diet for safe consumption by these disadvantaged populations. A combination of critical factors in the individuals’ physiological capabilities of oral food handling (e.g. maximum isometric tongue pressure, muscle strength) and the applied tongue for breaking and compressing food boluses have been recently emphasised to deal with hard foods especially when mastication was impaired due to oral diseases and aging. The physiological capability of individuals in creating oral tongue pressure was conducted using the Iowa Oral Performance Instrument (IOPI) for healthy volunteers with different age and genders. Vege-gel and mashed potato boluses of different concentrations were prepared to be used for Texture Analyser to measure their mechanical strengths and during sensory panel tests. A strong positive correlation was observed between the tongue-palate breaking/compressing pressure and the maximum mechanical strengths of gel and mashed potato samples. A further correlation was confirmed between mechanical strengths of low and high elastic gel and mashed potato samples and individuals’ maximum physiological capability in creating tongue pressure. The texture characteristics of foods have a significant impact on oral processing. Individuals’ with higher isometric tongue-palate pressure possibly possess more oral capabilities in dealing with hard foods. Aging and oral diseases could be the main barriers to enjoy eating and drinking for human beings.

Abstract No. 923: Cell and Molecular Studies of Hereditary Spastic Paraplegia

Hebbah Abdulrazaq Alhammad
Biomedical Science, Genetic Centre, St George's Hospital University of London
hhebbah2013@yahoo.com

Background: Hereditary spastic paraplegia (HSP) is a clinically and genetically highly heterogeneous group of neurodegenerative disorders which are mainly characterised by the presence of lower limb stiffness (spasticity) and weakness. A range of defective subcellular mechanisms have been proposed to underlie HSP including abnormal axonal transport, mitochondrial function and bone morphogenetic protein signalling. Objectives: To learn more about the function of strumpellin, one of molecules mutated in HSP, and investigate whether may possess a mitochondrial role. A second aim is to undertake genetic studies of an autosomal dominant form of HSP (Silver syndrome) by investigating whole exome sequencing data from families with this specific subtype. Methods: DNA sequencing (dideoxy and whole exome sequencing), cell culture and antibody staining of SH-SHY5Y neuroblastoma cells as well as patient fibroblasts, and western blotting were undertaken. Results: Exome sequencing identified a number of novel heterozygous sequence variants in each family involving the same gene (TRANK, BSN, ZAN, ARID3B and CSPG4P5) in at least two families. Unfortunately no co-segregation of these variants with the disease phenotype was noted, excluding them as being causative. Immunoflouresence studies of SHY5Y cell line and patient fibroblasts using strumpellin antibody confirmed an endoplasmic reticulum localisation as the primary subcellular localisation of strümpellin, and suggested that the causative mutation may interfere with endoplasmic reticulum function. Conclusion: Although preliminary immunofluorescence studies of patient cell lines suggest that the strumpelling mutation may interfere ER localisation. Further investigation of the whole exome sequencing data is required to identify the gene for Silver syndrome.

Poster: Medical Sciences

(Short Abstract only)

Abstract No. 15: CD56+CD3+ T Cells in Relation to Infection in Normal Subjects and Kidney Transplant Patients

M. Almehmadi1, S. Heyworth2, A. Hammad2, B. Flanagan1, S. Christmas1
[1]Department of Clinical Infection, Microbiology and Immunology, Institution of Infection and Global Health, University of Liverpool
[2]Renal Transplant Unit, Royal Liverpool University Hospital.

Background: CD56+CD3+ cells are a small subset of T cells of unknown function but with cytotoxic capacity following activation in vitro. In preliminary work, we found that levels were higher in normal subjects positive for cytomegalovirus (CMV) than in CMV negative subjects. Kidney transplant patients are particularly prone to reactivation of CMV infection which, as well as causing acute disease, may play a role in triggering the rejection process. Aims: This work aims to investigate the role of CD56+CD3+ T cells and their response to CMV and other pathogens, and their possible role in triggering the immune system toward the transplanted organ. Material and Methods: Phenotypic studies of memory and activation markers of CD56+CD3+ in normal CMV+ and CMV- subjects will be done to investigate the lineage of these cells by FACS analysis and whether they are increased in CMV infection. Functional analysis, consisting of the response of these cells to stimulation with mitogen, bacterial and viral antigens will be tested by measuring cytokine production and cell proliferation (CFSE labelling). Any differences in numbers, phenotype or function in transplant patients with or without CMV infection will be sought. Results and Conclusion: CD56+CD3+ cells are found to be higher in both healthy and post-transplant patients the same as has been found in the preliminary study. Several markers such as CD8, CD4, NKG2C and CD45RO were significantly found to be higher in CMV+ than CMV-. Moreover, CD161, CD28, CD62L and CD127 were significantly found to be lower in CMV + than CMV -. When cytokines production were compared between CMV+ and CMV- donors, IFN-γ and TNF α are significantly produced more in CD3+CD56+ cells from CMV+ than CMV-.

Abstract No. 24: Post- Transcriptional Regulation of "Silenced" Telomeric Genes

Amany ALqosaibi, Sarah Sharp, Agnieszka Maslowska and Edward J. Louis
Centre for Genetics and Genomics, Queen's Medical Centre,
University of Nottingham, UK

Post-transcriptional regulation of gene expression plays critical roles in cellular processes. We are interested in post-transcriptional regulation of telomeric genes in Saccharomyces cerevisiae and its role in apparent TPE (telomere position effect). We assessed transcriptional and protein level changes associated with loss of YKU, BRE1, DOT1 and SET1 in strains marked with a URA3-GFP reporter inserted near the core X element of a silenced end. Protein levels were assessed by growth on 5-fluoroorotic acid (5-FOA) media and florescence while mRNA levels were measured by quantitative RT-PCR to determine if the effects were transcriptional or post-transcription. Our results showed that yku∆ exhibited low transcription of the URA3 reporter, no different from the wild type repressed state in contrast to the 5-FOA and FACS assays showing an increase in protein. This indicates that the role of YKU is also not transcriptional but must be a post-transcriptional. We see the same in BRE1, DOT1 and SET1 deletions. We are dissecting the mechanisms of this post-transcriptional effect on telomeric URA3 expression with molecular and genetic analysis.

Abstract No. 26: Crosstalk Between Oestrogen (E) and Insulin-Like Growth Factor (IGF) Signalling Pathways in Breast Cancer

Yousef Mohammed Hawsawi
King Faisal Specialist Hospital & Research Centre, Jeddah, Saudi Arabia
Leeds Institute of Molecular Medicine, St. James`s University Hospital, Faculty of Medicine and Health, University of Leeds, UK
hawsa33@hotmail.com

Oestrogen dependant breast tumours can escape anti-oestrogen therapeutic strategies. This may occur by E-independent activation of oestrogen receptors (ERs: ERα and ERβ) by other growth factors. Insulin-like growth factors (IGFs) are potent mitogens for breast epithelial cells and evidence suggests that IGFs may activate ERα in an E independent manner to provide a mitogenic stimulus (see Fig 1). However the significance of the ERβ isoform in the regulation of breast cancer cell physiology is increasingly recognised. As ERβ may act as a tumour suppressor to regulate the activity of ERα it is important to investigate the potential effects of growth factor on the expression and activity of this ER isoform. We investigated the expression of IGF axis genes and ERα and β in parental and tamoxifen-resistant (TamR) MCF-7 cells, using RT-PCR. ERα was expressed at a much higher level than ERβ in both cell lines. Furthermore, IGFBP-2, -4 and -5, along with IGF-IR and IGF-2R, were the most abundantly expressed members of the IGF axis. IGFBP-1,-3 and -6 were expressed at very low levels. With respect to TamR cells, we found that IGFBP-5 was down-regulated, while IGFBP-2 was up-regulated. We confirmed changes in IGFBP-5 and IGFBP-2 expression by using enzyme-linked immunosorbent assay to measure IGFBP-5 and IGFBP-2 secreted in conditioned medium. In conclusion, IGFBP-5 and IGFPB-2 emerged as potentially fruitful novel target proteins with regard to BCa anti-oestrogen therapy.

Abstract No. 28: Clinical Audit of Children With NeurodisaBilitiesWho Underwent Oesophageal pH and Impedance Monitoring

Aljeaid R[1], Mellor S[2], Wilson R[2], Singh S[2], Whitehouse WP[1,3]
[1]Department of Paediatric Neurology, [2]Bastow Laboratory, Nottingham Children's Hospital, Nottingham University Hospitals NHS Trust; and [3]School of Clinical Sciences, University of Nottingham; Nottingham UK.
rania_aljeaid@yahoo.com

Introduction: Children with neurodisabilities are at high risk for developing severe chronic gastro-oesophageal reflux (GERD) compared to healthy children. This audit aims to evaluate the current oesophageal pH and impedance service so that good practice will be supported and aspects that can be improved are identified and addressed. **Participants and Methods:** Patients with neurodisability, aged 1<18 years were ascertained retrospectively from pH / impedance request cards at a single, regional children's hospital January 2010 to December 2011. Data was collected from the medical notes, using a standardised data capture sheet, including indications, technique, reporting, and subsequent management. **Results:** 51 patients had a combined pH / impedance monitoring, median duration 23 hours. The commonest indication was recurrent regurgitation and vomiting in 34/51 (67%). 16 patients had developmental delay, 13 cerebral palsy, 12 neurogenetic syndromes, 5 epileptic encephalopathies, 2 neurodegenerative diseases, 1 had metabolic disease and 2 were unclassified. 43/51 (84%) completed 20-48 hours recording, but useful diagnostic information was still obtained from shorter recordings of 3 hours or more. 25/51 (49%) were reported as normal, 19/51 (37%) abnormal, 7/51 (14%) unspecified. Symptoms were captured

in 39/51 (76%), and correlated with reflux in 22/51 (43%). Subsequent management was documented in 47/51 (92%), including referral for surgery in 26/51 (51%) and changes to their medication in 10/51 (20%) as a result of the test. **Conclusion:** This audit demonstrated reasonable case selection for pH / impedance monitoring, test completion, and subsequent use of the results to inform management.

Abstract No. 29: The role of Interleukin -1 Signaling in the Immune Defense and for the Development of T Helper Cells Lineage

Wesam H.Abdulaal, Werner Muller
Immunology group, Faculty of life Sciences, University of Manchester
wesam.abdulaal-2@postgrad.manchester.ac.uk

The function of IL-1 signaling for particular cell types of the immune system is still unclear. In this project we will investigate the role of IL-1 signaling in haematopoietc cells. For this, we will use genetically engineered mice harbouring a conditional IL1- RI fl / fl gene. Breeding regimens underway to create mice whereby the IL-1 receptor has been inactivated specifically in haematopoietic cells IL1- RI fl / fl Vav Cre + . These mice will then be challenged by parasites like T.muris. Following infection, the T helper cell (Th1, Th2 and Th17) response will be measured using a variety of standard approaches such as worm burden, antibody response, cytokine responses and pathology of the mice. The role of IL-1 signalling for Th1 and Th2 responses is currently unknown and will be interesting to study. According to the genotyping PCR we found that the conditional mice mutant IL1- RI fl / fl Vav Cre + was obtained successfully. Moreover, the inactivation of the IL1- RI gene in Hematopoietic stem cell was confirmed by DNA sequencing for IL1-RI delta allele. Moreover, Ribbon diagram of IL-1β bound to the ectodomains of IL-1RI showed that the IL1- RI fl / fl Vav Cre + loss the binding site of IL-1α and /or IL-1β.. In addition, the stimulation of IL1-R1 with LPS or IL1-β cause an increase in the concentration of IL6 and MCP-1 in IL1-RI fl / fl Vav Cre - compare with IL1- RI fl / fl Vav Cre + using ELISA assay. According to these result the IL1-RI gene has been inactivated was confirmed in vitro and the mice ready for the infection experiment.

Keywords: Inflammation; Cytokines; IL-1 ; IL-1α ; IL-1β ; IL1-R I; IL6 ; MCP-1 ; Th1; Th2 and Th17; haematopoietc cells ; T cells , T.muris.

Abstract No. 31: Genetic Diversity of African Isolates of Toxoplasma Gondii

Mohammed H Alruhaili
Environment and Life Science School, Biomedical Science Research Centre
University of Salford, UK

Toxoplasma gondii is intracellular protozoa parasite and has the ability to infect all warm-blooded animals including humans. While the three clonal lineages predominate in North America and Europe, strains from other regions in the world appear to have more diverse genotypes. By analysis of isolates from South America, Asia and Africa by using PCR-RFLP or microsatellite markers and to reveal the majority of these isolates have type I, II or III alleles which are identical to those in the main three lineages. The main aim of this study is to focus on African isolates and investigate their genetic relationship to global strains and the level of variation across multiple loci relative to reference type II and III strains. The study conducted multi-locus nested PCR analysis of Toxoplasma gondii samples collected from Africa, which was applied by using eleven different genetic markers distributed across eight chromosomes and the apicoplast genome “SAG1, 5’-SAG2, 3’-SAG2, Alt.SAG2,

GRA6, L358, BTUB, SAG3, C22-8, C29-2, PK1 and Apico" to increase the resolution and discriminative power in detecting the genetic diversity between isolates. On the analysis shown in this study, however, the level of variation across multiple loci relative to reference type I, type II and III strains, a high level of sequence homology was seen between the African isolates and the reference strains that originate form North America. Although the existence of limited genetic variations between these isolates, these variations are restricted in relation to type II and III reference strains.

Abstract No. 42: The Effects of a Sub-Lethal Neurite Inhibitory Concentration of Chlorpyrifos and Chlorpyrifos Oxon on Cytoskeletal Proteins in Differentiating Mouse N2a Neuroblastoma Cells

Ramya Sindi, Chris Lloyd Mills, Wayne Harris and Alan Hargreaves
Faculty of Applied Medical Sciences, Umm Al-Qura University, Saudi Arabia.
Biomedical Research Centre, Nottingham Trent University, UK
ramiasindi@yahoo.com

The organophosphate insecticide chlorpyrifos (CPF) and its metabolite CPF-oxon are neurodevelopmental toxins, which can cause neurodegenerative effects in animals and humans. Previous studies showed that, at a sub-lethal concentration of 3μM, both agents inhibited neurite outgrowth in differentiating mouse N2a neuroblastoma cells after 4 and 8 h of exposure. The aim of this work was to relate the neurotoxic effects of these compounds to the levels of expression and activities of cytoskeletal proteins and cell signalling pathway. This was achieved by morphological, Western blotting and enzymatic assays of cells induced to differentiate for 20 h prior being exposed to CPF or CPO for 4 or 8 h. N2a cells stained by CFSE showed clear reductions compared to the control in the total number of axon-like processes and small extensions following treatment with both compounds. Western blotting analysis revealed reduced levels of reactivity of N2a lysates with anti-phosphorylated neurofilament heavy chain (p-NFH) antibodies following 8 h treatment with both compounds but no effect on anti-total NFH or anti-tubulin at either time point. Moreover, neither compound affected the activation status of extracellular signal-regulated protein kinase ERK 1/2, which is known to be important in neurite outgrowth and phosphorylation of NFH. However, a significant increase was observed in the level of phosphatase activity in lysates from cells treated with both CPF and CPO after 8 h, which could account for the observed effect on NFH phosphorylation. Neurofilament disruption was also observed in cells stained by indirect immunofluorescence following 4 and 8 h treatment with both compounds, while the microtubule network was apparently unaffected. These data together indicate the ability of CPO and CPF to induce neurotoxic effects via cytoskeletal disruption in differentiating mouse N2a neuroblastoma cell lines.

Keywords: Chlorpyrifos, Chlorpyrifos oxon, neurodevelopmental, toxicity, organophosphate.

Abstract No. 43: Defining Cell Autonomous Roles For Notch Signalling in Definitive Haematopoiesis

Mohammad Hussein Al Khamees
Institute of Genetics, School of Biology, University of Nottingham

Purpose of the study: Haematopoiesis is the process whereby blood cells form in an organism. Haematopoiesis is maintained by self-renewing multipotent haematopoietic stem cells (HSCs) in the adult bone marrow. For more than 50 years, HSCs have been used in bone marrow transplantation for patients with blood system failure to restore normal blood formation. Yet, HSC transplantation has not achieved its full potential due to scarcity of HSCs in bone marrow and shortage of suitable donors. A potential source of patient-matched or patient-specific HSCs are pluripotent stem cells. Despite substantial efforts, HSC derivation from human pluripotent stem cells has not been accomplished. Knowledge about the molecular programming of HSCs during embryogenesis is an important prerequisite for achieving this goal. We study HSC formation in the zebrafish embryo to reveal the molecular programming HSC precursors undergo as they develop from haemogenic endothelium in the ventral wall of the dorsal aorta. Notch signalling plays an essential role in arterial specification, maintenance of vessel integrity and HSCs formation. Our previous data have shown that blocking Notch in different ways has differential effects on expression of endothelial and HSC markers. Methodology: We are using an in-house developed Notch reporter line to measure the level of Notch signalling remaining in the manipulated embryos. We are also using InSitu Hybridization to study expression of Vascular and HSCs marker genes. Results: Our preliminary data reveal that partial down-regulation of the Notch abrogates normal regulation of flt4 and runx1, while only complete elimination of Notch interferes with the efnb2a activation. Conclusion: Notch signalling is required for HSC development form the haemogenic endothelium in a dose dependent manner. Whereas low level of Notch is sufficient for arterial specification, high level of Notch is required for HSCs formation.

Keywords :Haematopoiesis, Notch, HSCs.

Abstract No. 47: The Impact of Ovarian Morphology Scores (Sassone and Kentucky scores) on the Decision to Intervene in the UKCTOCS trial

Rana Hussain ALDahlawi
Medical Physics and clinical engineering department, university hospital of wales, Cardiff University
al-dahlawirh@cardiff.ac.uk

Introduction: The multicentre United Kingdom Collaborative Trial of Ovarian Cancer Screening (UKCTOCS) is the largest randomized trial to study the effect of screening on mortality rates. However, in this trial, researchers were keen to use the risk of malignancy that has been defined by a simple morphological grouping, and did not apply scoring systems that are widely used in their decision making for women to undergo surgery. Aim: To evaluate the impact of ovarian morphology scores (Sassone and Kentucky scores) on the decision to intervene in the UKCTOCS trial. Design:A retrospective, quantitative, observational study as part of a collaborative study in which data from ongoing research by UKCTOCS were used. Methods: The data were taken from ultrasound arm level 2 and divided into two groups, women who had surgical intervention (845) and women who were managed expectantly (1055). Sassone and Kentucky scores were calculated in each group with predetermined cut-off values. The two groups were compared using each ovarian

morphology criteria independently. Main Findings: Sensitivity, specificity, PPV, NPV and accuracy were as follows: Sassone index, 44.4%, 82.7%, 16.4%, 95.1%, 80%; Kentucky score, 62.2%, 48.1%, 6.9%, 95.3%, 48.9%, respectively. The differences between the two groups in the median of the scores were significant ($p < 0.000$) in both scores. The number of ovarian malignancies in women who had complex masses on ultrasound and underwent surgical operation was 7.1%, and the current false positive rate (unnecessary surgery) was 92.9%. Conclusion: There is a wide variation in the surgical intervention rate between UKCTOCS centres. Current ultrasound screening for ovarian cancer appears to give rise to high rates of false positive cases and subsequent unnecessary interventions. Our results confirm that ovarian morphology scores such as Sassone and Kentucky scores could have an effect on the intervention rate in the UKCTOCS.

Abstract No. 49: Regression of prostate tumours following intravenous administration of tumour-targeted gene therapeutic systems

Majed Al Robaian, Ker Chiam Yi, David R. Blatchford, Christine Dufès.
Strathclyde Institute of Pharmacy and Biomedical Scinces

Cancer is a major public health problem worldwide. It is considered a major cause of death around the world. The World Health Organization estimates that 84 million people will die of cancer between 2005 and 2015, and the incidence is expected to increase continuously as the world population ages (Danhier et al., 2010). Prostate cancer pertains to the abnormal proliferation of cells of the prostate gland, resulting in the growth of the epithelial lining and eventual blockage of the urinary tract. To date, there is still no efficacious treatment for patients with advanced prostate cancer with metastases. New treatments are therefore critically needed for these patients. Gene therapy holds great promise for the intravenous treatment of prostate cancer. However, its use is currently limited by the lack of delivery systems able to selectively deliver therapeutic genes to tumours by intravenous administration. In our current study, we demonstrated that new tumour-targeted therapeutic systems recognizing receptors specifically overexpressed on prostate tumours, were able to improve the in vitro therapeutic efficacy on PC-3, DU145 and LNCaP prostate cancer cells when compared to the non-targeted delivery system, by up to 100-fold in LnCaP cells. In vivo, the intravenous administration of the tumour-targeted therapeutic system encoding Tumour Necrosis Factor (TNF) α resulted in tumour suppression for 60% of PC-3 and 50% of DU145 tumours. The dendriplex encoding TRAIL led to tumor suppression of 10% of PC-3 tumors. IL-12 mediated gene therapy resulted in tumor regression of 20% of both types of prostate tumors. By contrast, all the tumors treated with DAB-Tf, naked DNA or left untreated were progressive for both tumor types. The treatment was well tolerated by the animals, with no apparent signs of toxicity. These transferrin-bearing dendriplexes therefore hold great potential as a novel approach for the gene therapy of prostate cancer.

Abstract No.56: Experiences and Attitudes of People with T1 and T2 Diabetes to Exercise

Ahmed Alsabih[1,2], T. Sahota[2] and M.J.Taylor[2]
[1.] College of Medicine, King Saud University, K S.
[2.] Faculty of Health and Life Sciences, De Montfort University, UK

The estimated prevalence of diabetes Type 1(T1D) and 2 (T2D) worldwide for 2011 was 366 million and is expected to affect 552 million people by 2030. A number of factors may have contributed to this increase, including obesity, unhealthy dietary and sedentary lifestyles. Exercise is recommended in the prevention and management of diabetes. Using a questionnaire, we compared T1D and T2D regarding glucose management relative to type and intensity of appropriate exercise. 230 respondents completed the questionnaire, 64% of which were T1D and 36% being T2D. Approximately 65% thought that exercise had a positive effect on their diabetes with 95% of T1D and T2D preferring walking as the main form of exercise. 62% of T1D and 8% of T2D tested their blood glucose (BG) more than four times daily on a non-exercise day. For T1D 57% tested BG more often than usual on an exercise day compared with only 12% of T2D. About 90% did not change the number of insulin injections for an exercise day. Only 23% of T1D did not change the dose, whereas 43% of T2D did and this is weakly dependent in each case on the type of exercise anticipated. Of these, 60% administered their dose following exercise with few interrupting exercise to do so. About 52% of T1D and 20% of T2D had hypoglycaemia up to three times in the previous month, with the major risk period up to 2 hours following the exertion. To mitigate this threat, carbohydrate boosts were more common before exercise than after and again, few disturbed the session for this purpose. Insulin users of both diabetic types understand that to use exercise regimens safely they must monitor their BG and prepare on an individual basis for hypoglycaemia, using BG tests and carbohydrate support but making adjustments to dose a lower priority.

Abstract No. 60: Stem Cell Plasticity and Tumorigenisis: Regulatory Roles of Heparan Sulphate in the Stem Cell Niche

Roua Sami Baty
University of Liverpool
romania@liv.ac.uk

Stem cells have received attention as a system for research and cell-based therapies due to their unique ability for self-renewal. However, concerns have arisen from our current knowledge regarding what permits a safe use of stem cells in tissue engineering strategies. Uncontrolled stem cell expansion is a major cause of cancer and tissue degeneration. Sub-populations of cancer cells have been identified in tumours, leading to the cancer stem cell hypothesis, and the potential to target these cells for effective new anti-cancer therapies. Systems to be studied will include the role of extracellular HS on neuroblastoma cell lines influence on the phenotype of cancer cell lines. This project aims to investigate whether it is possible to regulate cancer cell phenotype by manipulating the stem cell niche via HS glycans. Ultimately, this may lead to development of small molecule therapeutics to reduce cancer cell invasion/metastasis. Proliferation and differentiation assays were assessed on the neuroblastoma cell lines to identify cancer stem cells by using fluorescent activated cell sorting (FACS) analysis, chemical biology (HS saccharide libraries & synthetic compounds), glycoanalysis (glycan purification; HPLC/FPLC, and glycan analysis) were assessed to study the changes in HS molecular phenotype with neuroblastoma cells. We have observed that CD44+ cells were reduced once treated with a low concentration of heparin (10 ng/ml) on

SKNAS cells. Conversely, treatment with a modified (desulphated) heparin, F3 compound, known to have anti-metastatic activity did not show any significant effect on the proportion of CD44+ cells in the SKNAS cells. These results suggest that: a) heparinoid compounds may be effective in reducing the proportion of CSCs in a tumour; b) this effect may have some selectivity for to certain HS structures, since highly sulphated heparin displayed differentially activity compared to a low sulphated heparin derivative.

Abstract No. 81: Investigation of a New Model for Tumor Necrosis Factor 1 (TNFR1) Signaling

Sarah M Albogami
s.m.2010albogami@gmail.com

Background: The tumor necrosis factor (TNF) family of cytokines is involved in orchestrating immunological processes. Their effects are mediated by binding to the cell surface members of the TNF-receptor super-family (TNFRSF). They thus induce the activation of intracellular signaling pathways. Aims: Understand how TNFR1 interact with each other by examining the new model of TNFR1 interaction and investigating the effect of mutations at residues critical to PLAD interactions. Methods: We used the MultiSite Gateway 3-fragment cloning technology to produce five expression clones. The expression clones included full-length constructs of the wild type (WT) and four mutants (K19A, T31A, D49A and D51A). The expression clones were transfected in to the SK-HEp1 cell line. We used flow cytometry to generate the expression profiles of the transfected cells, and we then proceeded to investigate the ability of the mutants to bind TNF-α. Results: We found that both WT and mutants are expressed on the cell surface and observed that K19A and D51A could not bind the latter when compared to the wild type protein. T31A and D49A could clearly bind TNF-α but not to the same extent as that of the wild type (low level of binding). From our results it can be inferred that these mutations prevented the TNFR1 protein from self-associating and in turn, from carrying out PLAD interactions to form trimers. However, the T31A and D49A mutations do not seem to affect the overall three-dimensional structure of the receptor greatly. Conclusions: In conclusion, our results reinforce the possibility that a preferential homotrimer formation of PLAD in the absence of a ligand is favoured.

Abstract No. 106: EMT and the Role of CCL5 in Colon Cancer Tumor-Microenvironment

Hajir Ali Al Saihati
Southampton University Cancer science
alnoris2001@yahoo.com

Background: Epithelial mesenchymal transition (EMT) is a critical trans-differentiation program driving cancer metastasis. Patients showing signs of EMT or presence distant metastasis have poor prognosis. Lack of anti-cancer immune responses is a feature of decreased cancer-associated survival. Thus we hypothesized that the EMT and anti-tumor response should be linked via altered secretion of soluble factors by metastatic cells. Methods: All colorectal cancer (CRC) cell lines were grown in DMEM. The induction of the SIP1 gene in SIP-1 stably transfected DLD-1 cell line was carried out using 2µg/ml doxycycline for three days. EMT status of CRC cell lines was assessed by western blotting and RT-PCR with EMT related markers. Cytokine/chemokine expression was analyzed using RnD systems antibody arrays. Validation of the results has been done using sandwich ELISA as well as Multiplex Bead immunoassays. CCL5 has been cloned, transfected to DLD-1 cells

and analyzed by ELISA. Results: Our results indicate that six of the cell lines are epithelial and three are mesenchymal. Cytokine/chemokine antibody arrays and Multiplex Bead immunoassay showed a significant increase in CCL5 in SIP1 inducible DLD1cells. Our results also showed that the average secreted level of CCL5 from mesenchymal CRC cells is significantly more than epithelial ones (263.2 vs. 67.2 pg/ml, respectively; p=0.042). CCL5 transfected DLD-1 showed an eleven fold increase of secreted CCL5 compare to the non-transfected one. Conclusion: Our data shows that CCL5 is up-regulated by SIP-1 and metastatic CRC cells secrete significantly more CCL5 compared to non-metastatic ones. Increased secretion of CCL5 from metastatic cells could be a crucial regulator of immune infiltrate in CRC. Migration and invasion assays of specific immune cells will be assessed using the CCL5 transfected DLD-1 cell line supernatant. Inhibiting CCL5 in metastatic CRC may have a therapeutic potential.

Abstract No. 108: Comprehensive Study of Intracellular Signalling Pathways and Cellular Homeostasis in the Presence of TRAPS-Associated Mutation

Wesam Abduljabbar, Ola Negm, Nuha Alkhattabi, Paul Radford, Colin Nicholson, Lucy Fairclough, Ian Todd and Paddy Tighe
Nottingham University
wesamjabbar@hotmail.com

Tumour necrosis factor receptor associated periodic syndrome (TRAPS) is a hereditary autoinflammatory periodic fever syndrome. It is associated with autosomal dominant variants in the TNFRSF1A gene, which encodes the TNFR1. The missense (R92Q) polymorphism is the most common variant associated with TRAPS within the Caucasian population. The aim of this study is to comprehensively examine: the intracellular signalling pathways that are affected by the presence of the R92Q variant; the influence of R92Q on signalling homeostasis in the cell; and the cellular response to inflammatory stimuli in the presence of R92Q-TNFR1 in comparison to wild-type (WT) cells. The endothelial cell line (SK-Hep-1) was stably transfected with full-length WT or R92Q TNFRSF1A. The cells were tested for expression of TNFR1 and TLRs. Reverse-phase protein microarray and antibody microarray were applied to examine different signalling molecules and inflammatory cytokines after stimulating the cells with diverse inflammatory stimuli. The results demonstrated a wide range of inflammation-associated pathways and secreted inflammatory cytokines were dysregulated in SK-Hep-1 cells expressing the R92Q-TNFR1 variant. These cells also showed altered responses post-stimulation with TLR- ligands and microbial extractsin comparison to SK-Hep-1 expressing the WT-TNFR1. Interestingly, the data showed that R92Q-TNFR1 expression appears to lead to constitutive up-regulation of a number of signalling pathways, irrespective of stimulation with sources of PAMPs. In conclusion, the inflammatory signalling pathways activated by TRAPS-associated mutation (R92Q) have been elucidated and up-regulated in the mutant more than WT. This finding will be useful for future therapeutic method using specific inhibitors to perform TRAPS treatment.

Abstract No. 115: CLEC-2 Signalling Induces Platelet Procoagulant Response: a New Insight of CLEC-2 Role in Haemostasis and Thrombosis

Mohammed A Alsahli[1,2], Jackie A Appleby[1], Alice Y Pollitt[3], Craig E Hughes[3], Hassan A Hamali[1,4] , Steve P Watson[3], Alison H Goodall[1*]
[1]Department of Cardiovascular Sciences, University of Leicester, UK,
[2]College of Applied Medical Sciences, Qassim University, KSA,
[3]Centre for Cardiovascular Sciences, University of Birmingham, UK
[4]College of Applied Medical Sciences, King Khalid University, KSA.
ahg5@le.ac.uk

Background: The C-type lectin receptor CLEC-2 is a recently described platelet receptor that plays important roles in platelet cross talk and in development. Podoplanin is the natural ligand for CLEC-2 but also can be activated by the snake venom, rhodocytin. CLEC-2 signalling results in Src and Syk-dependent tyrosine kinase signalling and activation of PLCγ2 via a single YxxL hemITAM sequence. Aim: We sought to determine whether signalling through CLEC-2 is capable of generating a procoagulant response in human platelets. Methods: Platelets from healthy consenting donors were stimulated with either rhodocytin or podoplanin, and analyzed by flow cytometry for markers of a procoagulant response (Annexin V binding) and degranulation (P-selectin). Procoagulant phospholipid (PPL) activity was measured by the Calibrated Automated Thrombogram (CAT) assay using peak thrombin (PT) as a measure for PPL activity. Results: Rhodocytin induced Annexin V binding and P-selectin expression in 24±4.9% and 81±4.9% of platelets respectively (n=5). Mouse podoplanin (20µg/ml) also generated platelet Annexin V binding in 26±3.1% of platelets (n=6). In addition, 41±12.4% of platelets became Annexin V positive (n=3) when incubated with human podoplanin-expressing CHO cells. Both rhodocytin and podoplanin induced platelet Annexin V+ve microparticle generation. Rhodocytin-activated platelets showed significant PPL activity in the CAT assay with PT of 356±2 compared to control samples 172±6 (p=0.0019; n=3). Additionally, platelet-derived microparticles generated either by rhodocytin or human podoplanin-expressing CHO cells showed significant increase in PT with 88±1 and 121±4 compared to 17±1 and 33±5 respectively in control samples (p=0.0003 and 0.0024 respectively; n=3). Immunofluorescence studies showed that platelets bound to podoplanin-expressing CHO cells and expressed a procoagulant surface and P-selectin. Conclusion: Signalling in platelets via CLEC-2 induces a procoagulant response in platelets and the generation of procoagulant microparticles. These data suggest novel findings of a procoagulant role for the novel platelet receptor CLEC-2 in haemostasis and thrombosis.

Abstract No. 129: The effect of Cigarette Smoke Extract on Dendritic Cells Generated in Vitro as a Model to Study COPD

Nuha Alkhattabi, Paul Radford, Ian Todd, Paddy Tighe and Lucy Fairclough
University of Nottingham

Chronic obstructive pulmonary disease (COPD) is an airway disorder characterized by airway obstruction that is not fully reversible. The main cause for the development of COPD is cigarette smoking, however not all smokers are susceptible. Immunological response has a major role in the development of this disease. One of the interesting cells that could have an important role in the development of COPD is the dendritic cell (DC). These cells are considered as orchestrators between innate and adaptive immunity and are professional antigen presenting cells. Their role in the development of COPD still not fully understood. In this study, our aim is to establish a non-animal model that could be used to study the effect of cigarette smoke on DCs. Immature DCs were generated from positively selected CD14+

monocytes that were cultured in the presence of IL-4 and GM-CSF and stimulated with either LPS or Poly I:C. In addition, the effect of CSE and nicotine was assessed by protein expression level for DCs cell surface markers using flow cytometry and cytokine secretion using antibody microarray. Moreover, the genetic profile of the cells treated with CSE has been screened using transcriptomic analysis. Our results indicate that both CSE and nicotine don't have any effect on the expression of the chosen screened proteins. On the other hand, the gene profile of DCs stimulated with CSE revealed alterations in a number of genes that could be a key to some interesting proteins that may have relation to COPD. In conclusion, we have established an in vitro system to look at the effect of cigarette smoke on DCs that would be suitable to examine COPD patients' samples.

Abstract No. 133: An Investigation of a Rehabilitation Training Programme to Facilitate the Benefits of Hearing Aid Use for Hearing Impaired Adults in Saudi Arabia

Aseel Alkhamees
University of Surrey
ah_alkhamees@hotmail.com

In 2000 there were 250 million people with hearing impairment worldwide. The trend continued in 2005, when the estimate rose to 278 million people with a disabling hearing impairment worldwide. Saudi Arabia takes third place after Algeria and Iraq with the highest population of deaf people that equals to 100,000. However, it has the highest percentage rate of deaf people in the general population, with a figure of 3.55%. In Saudi Arabia this number is higher because of the frequent practice of consanguineous marriage (marriage between close relatives), increasing the chance of transmitting inherited conditions such as certain types of hearing impairment. The effects of a hearing impairment can impact on an individual's life in many different ways – in terms of their communication skills, their social life, their academic progression and their overall quality of life. The current rehabilitation model available for managing hearing impairment is to use the hearing aid. Research in the USA and Western Europe suggests that a programme of auditory rehabilitation enhances the benefit of the aid. There are no auditory rehabilitation programmes in Saudi Arabia, and no research to investigate this in Arabic-speaking countries, and no investigation of rehabilitation outcomes in Islamic cultures. In the study a rehabilitation programme was developed for adults who suffer from hearing impairment in Saudi Arabia that focused on listening training, education in information and hearing strategies. The results showed that there was statistically significant difference in the participants' performance for those who received an auditory rehabilitation programme than those who did not receive any rehabilitation programme.

Abstract No. 139: The Molecular Characterization of Manganese Homeostasis in the Food-borne Pathogen Campylobacter jejuni

Khalid Al-Maary, Simon Park
Microbial and Cellular Sciences, University of Surrey, UK
K.almaary@surrey.ac.uk

Introduction: Campylobacter jejuni is recognized as a major cause of bacterial food-borne illnesses. Many bacteria have developed mechanisms that enable them to survive in different environments and in particular oxidative stress remains an important challenge to bacteria. The reactive oxygen species formed can cause deleterious effects on bacteria as these can cause damage to proteins, nucleic acids and membranes. However, aerobic bacteria and microaerophilic bacteria (Campylobacter species) possess several enzymes such as superoxide dismutase, to detoxify these active compounds. Manganese has recently been shown to protect certain pathogenic bacteria against oxidative stress, most notably in Neisseria gonorrhoeae. Given this, the aim of this study was to investigate for the first time, the response of different strains of C.jejuni and C.coli to oxidative stress in the absence or presence of manganese. Methods: The survival/growth of various strains of C.jejuni and C.coli in Mueller Hinton containing different concentrations from MnSO4 (50 µM to 1 mM), and in aerobic conditions was assessed using plate counting and the LIVE/DEAD BacLight viability assay. Results: At concentrations of 100µM and 200µM MnSO4 enhanced the survival of all strains whereas 50µM did not. The presence of 100µM and 200µM manganese not only enhanced survival by 0.5-1 log-cycles but also prolonged survival. In the absence of added manganese counts of C. jejuni NCTC 11168 fell to undetectable levels in 110 hours whilst in its presence cells took over 140 hours to reach undetectable levels. At higher concentrations, 500µM and 1mM, manganese was bactericidal and resulted in a decrease in viability of over 6-log cycles. Conclusion: This study for the first time has shown that manganese influences the growth and survival of campylobacters, particularly under aerobic conditions.

Abstract No. 140: Aberrant DNA Methylation and Silencing of Gene Expression: Possible Diagnostic and Therapeutic Applications in Testicular Germ Cell Tumors

Safiah Alhazmi, Dzul Noor, Chris Tan, Jaime Hughes, Claire Wallace, Paul Scotting
School of Life Sciences, University of Nottingham, UK.
safialsafi@yahoo.com

Previous studies have shown evidence of the tight correlation between DNA methylation and gene expression which raises the question whether aberrant DNA methylation could play important roles in the development of cancer by altering gene expression. DNA methylation is one of the most important epigenetic modifications that regulate gene expression during germ cell maturation and embryogenesis. In cancer, aberrant DNA methylation might be involved in alteration of gene expression by silencing of specific tumour suppressor genes or activation of oncogenes. Germ cell tumours (GCTs) are malignant or benign tumours that arise from primordial germ cells which exhibit a molecular mechanism of pluripotiency which is associated with de novo DNA methylation machinery. Studying the DNA methylation profile in germ cell tumours is a useful model for studying the role of methylation in carcinogenesis generally. The purpose of this project is to investigate the role of DNA methylation in tumorigenesis in Testicular Germ Cell Tumours (TGCTs). Following the hypothesis that aberrant DNA methylation affects cells by altering gene expression, we have determined the methylation profile of the genomes of a series GCT cell lines and combined this with analysis of expression microarray data then we detected the dysregulated

genes which might be affected by DNA methylation through comparing these methylation profiles to gene expression before and after treatment with the demethylating agent, 5-Aza-2′-deoxycytidine. We found some genes were stably re-expressed after treatment with 5-aza and there was a significant negative correlation between promoter DNA methylation and gene expression in these genes in four GCTs cell lines. I will go on to investigate the effect of methylation on the biology of these tumour cells by manipulating methylation and expression of these genes. In conclusion, these methylated genes could be used as cancer biomarkers or targets for epigenetic therapy.

Abstract No. 146: Inter-Individual Variation in Theophylline Cclearance in Children

Altamimi M, Sammons H, Choonara I
Academic Division of Child Health, University of Nottingham, UK

Background: Inter-individual variation in pharmacokinetics in children is an area where there has been little research. We wished to determine the extent of inter-individual variation in the clearance of theophylline in paediatric patients of different ages. Methods: A systematic literature review was performed using the following databases; Embase, Medline, Cinahl, International Pharmaceutical Abstracts and the Cochrane Library. Individual data and particularly the minimum and maximum clearance values were extracted from each paper. For those papers where individual data was not given, the approximate range was estimated by calculating + 2SD. Results: A total of 105 papers reporting on 3183 patients met our inclusion criteria. Seventy of these gave ranges for clearance, a further 67 gave standard deviation values and seven papers gave neither the range nor the standard deviation. Inter-individual variation was greatest in critically ill neonates (350 patients) where there was a 1.5-18 fold variation in theophylline clearance (dose: 1-9 mg/kg/hour). There was a 2-15.5 fold variation in critically ill infants (dose: 0.5-28 mg/kg/hour). In contrast, in relatively healthy children (319) in stable asthmatic, there was only a 2-6.5 fold variation (dose: 1-40 mg/kg/hour). Conclusions: Inter-individual variation was greatest in critically ill neonates. The large variation suggests that some critically ill children will be overdosed and others under dosed.

Abstract No. 158: Postmortem Redistribution of Morphine and Morphine-3-Glucuronide in Rabbit Models

Mohammed Albeishy
University of Dundee, Centre for Forensic and Legal Medicine
mymaly18@gmail.com

Opioid overdose is a major cause of premature death all over the world. Deaths related to morphine and heroin abuse were more than any listed drugs therefore, the interpretation of toxicological results of these drugs is important to reach the right decision regarding the cause of death. Postmortem redistribution is known to influence the blood and tissues concentrations of various drugs. A rabbit models was used to elucidate this phenomenon for heroin and its metabolites morphine and morphine-3-glucoronide (M3G). Nine male New Zealand white rabbits were anaesthetised and administered 1mg/kg of diamorphine via the left auricular vein. One hour after the injections, the rabbits were sacrificed. The concentration of morphine and M3G were determined in femoral blood, cardiac blood, vitreous humour, and various tissues (liver, cardiac muscle, bone marrow, lungs, kidneys, abdominal fat and subcutaneous fat). Rabbits were placed into three groups. Group one (n=3) autopsied immediately, group 2 (n=3) autopsied 30 minutes after death and group 3 (n=3) autopsied 24 hours after death. Samples were analysed for morphine and M3G by a validated

liquid chromatography mass spectrometry (LC-MS-MS). Antemortem blood morphine and M3G concentrations were similar across all the rabbits (mean 0.03mg/l median 0.01 range 0.01-0.14mg/l) and (mean 0.31mg/l median 0.29 range 0.10-0.67mg/l) respectively. Morphine and M3G concentration found to be changed with respect to time and site of sampling. Morphine PMR results in rabbits was similar to that in human and therefore, could be used as a model to show the PMR of heroin and its metabolites morphine and M3G in human.

Abstract No.161: Propofol Post-mortem Redistribution in a Rabbit Model

Fahad Almesfir, Dr. Peter Maskell, Dr. L Nitin Seetohul, (Lecturer in Centre for Forensic and Legal Medicine)
(Lecturer in Centre for Forensic and Legal Medicine)
Professor/ Derrick J Pounder (Head of the department)
Centre for Forensic and Legal Medicine, University of Dundee

Propofol is a rapid-acting intravenous hypnotic agent, commonly used as an anaesthetic drug for inducing and maintaining general anaesthesia. Since 1992, abuse of propofol for recreational purpose lead to increase the number of propofol related deaths. However, knowledge about the post-mortem redistribution (PMR) of propofol is still limited; PMR refers to any movement of drugs and chemical poisons after death which commonly given as cardiac: femoral ratio. In this study we examined propofol post-mortem redistribution using 20 rabbits. The twenty rabbits were anesthetised by 3-5% isoflurane and then given 5mg/kg of propofol by the left auricular vein. One hour after administration ante-mortem blood sample was taken via the right auricular vein and the rabbit was euthanized using potassium chloride. The autopsy was performed after the rabbits were divided to five groups according to post-mortem interval, each group containing 4 rabbits. Group 1) Immediately after death; group 2) 30 minutes after death and group 3) 3 hours after death 4) 6 hours after death 5) 24 hours after death. Specimens from femoral blood and cardiac blood, vitreous, lung, right Kidney, heart, liver, and skeletal muscles were taken for analysis by a validated GC/MS method. Propofol was not detected in tissues; however it was detected and quantified in ante-mortem blood, cardiac blood and femoral blood samples. Ante-mortem levels were similar in all rabbits groups. Propofol cardiac blood to femoral blood ratios at intervals of 0, 1/2, 3, 6 and 24 hours post-mortem were 1, 1, 0.71, 0.6 and 0.72 respectively. The average ratio of propofol concentration in our study was close to 1(0.8), giving an indicator that propofol may lack the potential to exhibit post-mortem redistribution.

Abstract No. 165: Sialyl Lewis A and Sialyl Lewis X Antigens Mediate Oral Cancer Cell Binding to Recombinant E-Selectin and TNF-α-Stimulated Endothelial Cells

Alkishi AM[1], Khurram SA[2], Thornhill MH[1] and Murdoch C[1].
[1]Unit of Oral and Maxillofacial Medicine and Surger, University of Sheffield, Sheffield
[2]Unit of Oral and Maxillofacial Pathology, University of Sheffield, UK

Background: Previous studies have shown that the extravasation of different tumour cells during metastasis is sialyl Lewis A/X (sLeA/X)-dependent. The aim of this study was to investigate whether metastatic oral squamous cell carcinoma (OSCC) cells overexpress and employ sLeA/X to adhere to E-selectin on endothelial cells. Materials and methods: Twenty-one matched-pairs of primary and nodal metastatic OSCC tissue sections were evaluated immunohistochemically using anti-sLeA/X monoclonal antibodies (mAbs). q-PCR was performed to measure relative transcript expression of a panel of glycogens potentially involved in sLeA/X synthesis in OSCC cells. sLeA/X cell surface expression was assessed by

flow cytometry and fluorescence immunocytochemistry. sLeA/X involvement in OSCC cell adhesion behaviour was evaluated using static and flow adhesion assays employing recombinant E-selectin (rE-selectin) and TNF-α-stimulated human dermal microvascular endothelial cells (HuDMEC), respectively. Several approaches with a potential to prevent OSCC cell binding to rE-selectin or HuDMEC were tested including the use of anti-sLeA/X mAbs, neuraminidase, fucosidase, IELLQAR®, swainsonine and FUT3 siRNA. Results: Immunohistochemistry analysis showed that sLeA/X expression on primary OSCC correlates with lymph node metastatic but not tumour differentiation status. The metastatic OSCC cells, TR146, displayed higher sLeA/X expression than the non-metastatic OSCC cells, SCC4 and Cal27, and this was at least partially related to fucosyltransferase III (FUT3) up-regulation. Knocking down FUT3 expression in TR146 cells reduced sLeX but not sLeA levels. TR146 cells adhered to rE-selectin and TNF-α-stimulated HuDMEC in significantly greater numbers than SCC4 cells. Attachment of TR146 cells to rE-selectin was significantly reduced following incubation with anti-sLeA/X mAbs, neuraminidase and FUT3 siRNA. Treatment of TR146 cells with neuraminidase also caused a significant decrease in cell adhesion to HuDMEC under hydrodynamic flow conditions. Conclusions: Elevated levels of sLeX in metastatic OSCC cells results from increased FUT3 expression. Metastatic OSCC cell binding to rE-selectin and TNF-α-stimulated HuDMEC is sLeA/X-mediated.

Abstract No. 166: Inhibitory Effect of Garlic Extract on Multi-Drug Resistant Organisms

Ohoud Al-Jefri
King AbdulAziz University
tareem_1@hotmail.com

Multi-drug resistant bacteria have become a major global healthcare problem in the twenty-first century thus an urgent need for products that act on novel molecular targets that circumvent resistance mechanisms, garlic is one of hundreds of plants that are used in traditional medicine as treatment for bacterial infections, In this study, we tried to uncover the effect of different concentrations of local Aqueous Garlic Extract (AGE) on Multi-drug organisms including Escheichia coli " ESBL" , Klebsiella pneumonia " ESBL", Pseudomonas aeruginosa, Acinitobacter spp, MRSA, by disk diffusion and agar well diffusion assay. All tested organisms were inhibited by AGE up to 25% concentration and the activity was a linear function of concentration. At 100% the maximum zone of inhibition was observed against MRSA, a Gram-positive organism and the minimum was against Klebsiella pneumonia "ESBL", a Gram-negative organism. This indicates that AGE has the potential of a broad spectrum of activity against both Gram-positive and Gram-negative bacteria. In conclusion, the results of this study have provided scientific justification for the use of local garlic extract in health products and herbal remedies against multidrug-resistant bacterial infections in kingdom of Saudi Arabia.

Keywords: Multi-drug resistant bacteria, infections, inhibition.

Abstract No.181: Pannexin Expression in Porcine Splenic Artery and Rat Aorta

Alaa Hamed Habib
Nottingham University
A.H.Habib@Hotmail.Com

Pannexins are a newly discovered family of proteins with sequence homology to innexins. The pannexin family consists of Panx1, Panx2 and Panx3. They form channels in cell membranes. In blood vessels it has been shown that Panx1 channels are activated by α-1D adrenocptors to release ATP, which in turn activates purinergic receptors to cause vasoconstriction. This project examined the presence of pannexins in porcine splenic artery and rat aorta Segments of porcine splenic arteries or rat aorta were prepared for isometric tension recordingin oxygenated Krebs solution warmed to 37oC. The presence of Panx1 and Panx2 proteins was studied by Western blotting. Isomeric tension recording techniques were used to generate concentration response to NA, serotonin or U46619. The effects of the Panx1 inhibitor mefloquine (2x10-5) and probenecid (5x10-4M) and the purinergic receptor antagonists suramin (3x10-5, 10-4 M), and PPADS (10-5 M) on agonist-mediated vasoconstriction was assessed. Using western blotting it was shown that Panx1 and Panx2 proteins were present in both PSA and RA. Neither inhibitors of panx1 nor P2 receptor antagonists affected responses to NA in the PSA. The Panx1 inhibitors mefloquine (2x10-5M)and probenecid (5x10-4M2X10-3M) reduced responses to NA in the RA as did the P2 receptor antagonist, PPADS(10-5 M), although suramin (3x10-4M) was without effect. Mefloquine (2x10-5) also attenuated responses to 5-HT and U46619 in the RA. Conclusions: Panx1 and 2, although present in the PSA, are not involved in mediating contraction to NA. In the RA, where the predominant α- adrenoreceptor is the α1D subtype, pannexin inhibitors and PPADs reduced contraction, possibly indicating that pannexin channels are involved in transducing responses to NA via the release of ATP. However, mefloquine also blocked responses to U46619 and 5-HT. This could indicate a non-selective inhibitory effect.

Abstract No, 183: DNA Binding Studies of Fluorinated Active Compounds

Mariam Mojally, Supervisors Dr. George Weaver, Dr. Paul Lucas
Department of chemistry, Loughborough University, UK.
Um-alqura University, Saudi Arabia, Makah
M.Mojally@lboro.ac.uk

Fluorinated heterocyclic compounds have drug like properties and possess a valuable biological activity due to their rigid chemical structures and the high solubility profile. The project involved organic synthesis which include the synthesis of novel fluorinated heterocyclic active compounds which have been synthesized by nucleophilic aromatic substitution of perfluorinated compounds such as pentafluoropyridine, hexafluorobenzene and pentafluorotoluene with carbazole or 1-bromo-2-naphthol. In addition the project involved the study the biological activity of the synthesised compounds by studying their interaction with DNA by thermal melting studies via U.V. absorption at 260 nm using Calf thymus DNA double strand during gradual increasing in the temperature from 50 to 100 . The results showed 1-bromonaphth-2-yl tetrafluoropyrid-4-yl ether had very high activity and bind to DNA more than other compounds possibly by intercalation.

Keywords: Heterocyclic fluorinated compounds, DNA binding, DNA thermal denaturation, DNA drug interaction.

Abstract No. 186: Structure Genomic Studies of Lipoprotein from Mycobacterium Smegmatis for Drug Design.

Feras Moheisen ALmourfi
department of milecular biology and biotechnology, Sheffield university
nooralhoda2004@hotmail.com

Tuberculosis (TB) is considered as an old infectious disease that leads to many fatalities in man. Mycobacterium tuberculosis was discovered as the causative agent of tuberculosis by Robert Koch in 1882. Since then, scientists started the first move in order to developing such tools to prevent the disease. In 1952, effective antibiotics such as isoniazid, streptomycin was developed and helped to made TB overcame and gradually TB cases has declined. Now although there are an effective drugs to treat the majority of TB cases, the disease still one of the deadliest diseases. According to the WHO 2012 TB report, about one-third of the populations are infected with Mtb; TB causes nearly 1.8 million deaths every year. Peculiarly, TB is one of the leaders that cause death among HIV-infected people with weakened immune systems. Perhaps most worrying, new strains of Mtb resistant to most or even all-standard anti-TB drugs are spreading throughout the world, making a treatment is more costly and often impossible. Despite the global prevention of TB, the anti-TB drug research has not developed these years and we urgently need to discover new drugs to overcome TB. The genomic sequence of Mtb has been completed in 1998 that helped to shed light on new pathways as drug targets [1]. As a consequence, we have launched a structural genomics of lipoproteins using the Mycobacterium Smegmatis as model organism for Mycobacterium tuberculosis. The project aims to identify new targets suitable for drug discovery and shed light on their role in the cell. Therefore, all targets were identified by the way they are attached to the cell membrane and put into a pipeline of cloning, over-expression, purification and crystallization for structure determination.

Abstract No.190: Aligned Polymer Scaffolds in Periodontal Tissue Engineering

D. Alotaibi1 *, K. Legerlotz[2], E. Jones[2], G. Riley[2], G. Griffiths1, P.V, Hatton[1], A. Crawford[1]
[1]School of Clinical Dentistry, University of Sheffield, UK,
[2]School of Biological Sciences, University of East Anglia, UK

Introduction: Periodontal disease is characterized by progressive gingival inflammation and degradation of the periodontal ligament and alveolar bone. Periodontal treatments, including guided tissue regeneration, do not always give full tissue regeneration Recently, several studies have investigated the use of tissue engineering to facilitate periodontal tissue regeneration. Much interest has been directed towards the construction of scaffolds which reflect the aligned topographic arrangement of collagen fibres in native periodontal ligament. Mechanical loading is a critical component when engineering load-bearing tissues as appropriate biomechanical cues are essential for extracellular matrix (ECM) organization and alignment. Objectives: The aims were to investigate the effect of fibre alignment of electrospun poly-L-lactic acid (PLLA) mats on the biological response of periodontal ligament fibroblasts (PDLF) and to study static and cyclic tension forces on PDLF gene expression. Methods: Aligned and random PLLA scaffolds were fabricated, seeded with PDLF and cultured for varying periods of time. PDLF gene expression and ECM of the engineered tissues were analysed by quantitative real-time polymerase chain reaction (qPCR), scanning electron microscopy (SEM), and immunohistochemistry. Engineered PDL constructs were subjected to static strains of 0-20% for 3 h in individual, custom-made, loading chambers. PDLF were cultured in collagen gels and subjected to cyclic loading using Flexcell loading system with a dynamic uniaxial strain at 1 Hz for 8-48 h. After loading,

PDLF gene expression was assessed by qPCR. Results: On aligned scaffolds, PDLF were elongated shape and oriented along the long-axis of the fibres and showed a higher matrix deposition. Mechanical strain up regulated Collagen 1, Periostin, IL-6 and scleraxis on aligned-fibre scaffolds. In summary, fibre alignment influenced PDLF phenotype and also modulated PDLF gene expression in response to mechanical strain. Conclusion: In conclusion, appropriate fibre alignment is a desirable feature to consider in the design of scaffolds for periodontal tissue engineering.

Keywords: periodontal fibroblast, mechanical loading, qPCR, tissue enginnered ligament.

Abstract No. 198: Different Calvarial Bones; Frontal, Parietal and Interparietal Contain Different Bone Microenvironments

Osama Al-Amer1, Allan Williams[1], Colby Eaton1 and Peter Croucher[1-2]
[1] Bone Biology Group, Mellanby Centre for Bone Research, Department of Human Metabolism, Medical School, University of Sheffield, UK
[2] Osteoporosis and Bone Biology Programme, Garvan Institute of Medical Research, Sydney, Australia
osama_alhashmi@hotmail.com

Introduction: Multiple myeloma (MM) is a plasma cell malignancy that causes extensive osteolytic bone disease. To support our understanding of MM bone disease, preclinical mouse models have been developed. 5T33 and 5TGM1 are the best characterized and used (Vanderkerken et al., 1997, Dallas et al., 1999). Murine myeloma 5TGM1-GFP tumour was detectable in calvariae between 10-14 days post intravenous inoculation into mice suggesting that these cells home to calvarial BM (Oyajobi et al., 2007). However, this study lacked the imaging capability to study the arrival of single cell numbers in calvarialbone marrow (BM). There are no publications that demonstrate the murine myeloma 5T33MM model can home to calvarial BM in C57BL/KaLwRijHsd mice. Findings: Histological analysis demonstrated significant increases in the bone surface area and BM area in interparietal bones compared to frontal and parietal bones ($p<0.05$). We showed that there was no difference in the percentage of bone surface covered by osteoclasts between frontal parietal and interparietal bones. However, we showed a significant increase in the distribution of osteoblasts in interparietal bones compared to frontal and parietal bones ($p<0.05$). In contrast, the distribution of quiescent bones significantly decreased in interparietal bones compared to frontal and parietal bones ($p<0.05$). This work suggested an increased in the bone formation on the endo-cortical surface of interparietal bones compared to frontal and parietal bones, but this is not significant. Interestingly, we found that myeloma tumour developed only in the interparietal bones. We found that there was a significant increase in the numbers of DiD positive myeloma cells observed in the interparietal BM compared to the frontal and parietal BM after 3 and 21 days ($p<0.05$). Conclusion: These studies provide evidences that micro-anatomical site in the interparietal bone may have unique characteristics to study myeloma colonisation and growth in bone.

Abstract No. 204: NPM Up-Regulates BCL-2 mRNA in NPMc+ AML

H. Qutob, M. Pallis, N. Russell, C. Seedhouse,
Department of Academic Haematology, Factuality of Medicine and Health sciences,
University of Nottingham, UK
hh_qutob@yahoo.com

Nucleophosmin (NPM) is a multi-functional phosphoprotein which shuttles between the nucleolus and the cytoplasm. It participates in many cellular processes including ribosome biogenesis and transport, centrosome duplication, and also contributes to the control of genomic stability. C-terminal mutations in NPM (NPMc+) which cause delocalization of the protein into the cytoplasm occur in 30% of patients with acute myeloid leukaemia and are suggested to have a role in leukemogenesis. NPMc+ AML cases are associated with low expression of CD34 and favourable prognosis. The BCL-2 family of proteins play a role in cancer pathophysiology and resistance to conventional chemotherapy via regulation of the apoptotic pathways. Previously, it has been shown that addition of ATRA increased the chemosensitivity in CD34 negative AML cells due to down regulation of BCL-2. The aim of our study was to investigate the expression of BCL-2 in cells with and without NPM mutations. BCL-2 mRNA was highly expressed in an NPMc+-harbouring cell line (OCI-AML3) compared to other cell lines but the protein levels were not significantly different. In response to ATRA for 72 hours, the BCL-2 mRNA was significantly down-regulated in OCI-AML3 ($p=0.008$) but not in NPM wild-type cells. Furthermore in patient samples BCL2 mRNA down-regulation was seen in 4/6 NPMc+ samples compared to 1/3 NPM-WT samples. In addition, ATRA was shown to induce differentiation and apoptosis in OCI-AML3 cells. Knock-down of total NPM1 or mutant NPM alone in OCI-AML3 showed a significant down-regulation of BCL-2 mRNA ($p=0.025$ and $p=0.049$), while in NPM wild-type cells no effect on the BCL-2 level ($p=0.950$) was found. Our finding confirms that NPMc+ cells are significantly more sensitive to ATRA than wild-type cells and provides evidence to suggest that this may be due to aberrant BCL-2 regulation in mutated cells.

Keywords: Nucleophsmin (NPM), acute myeloid leukaemia (AML), cytoplasmic NPM (NPMc+), B-cell lymphoma 2 (BCL-2), All Trans-Retinoic Acid (ATRA), messenger Ribonucleic acid (mRNA).

Abstract No. 232: Analysis of Sex Steroid Hormones in Models of Cardiovascular Disease

Abdullah MM Faqehi, Natalie ZM Homer, Brian R Walker, Ruth Andrew
The University of Edinburgh, UK
bo-o-od@hotmail.com

Background: Central adiposity is closely linked to the development of metabolic diseases and is a risk factor for cardiovascular disease. Sex hormones influence body fat accumulation and distribution. Sex hormones are synthesised in the gonads under the control of the hypothalamic pituitary gonadal axis but are also interconverted within adipose tissue Hypothesis Sex hormone metabolism in adipose tissue may alter adipose distribution and accumulation Aim To develop assays to measure sex hormones and their metabolites in plasma by Ultra-Performance Liquid Chromatography Mass Spectrometry (UPLC-MS/MS) Development of an Extraction Method An extraction method was developed to allow separation of estrogens and androgens into separate fractions from the same sample, to minimise the volume of sample required. Elution protocols were developed using solid-phase extraction. Estrogens and androgens were recovered efficiently from stripped serum Analysis

of Androgens: Baseline resolution of all analytes was achieved. Limit of detection (LOD) and limit of quantification (LOQ) for androgens were compared favourably to the anticipated biological levels. Analysis of Estrogens: Derivatization reaction conditions were optimised for detection of estrogens with high sensitivity. Baseline resolution of all analytes were achieved. LOD and LOQ for estrogens derivatives were determine and compared favourably to the biological levels Conclusions and Future Work A method has been developed to recover sex steroids efficiently from plasma and detect them by UPLC MS/MS. Quantitation limits of the assays look promising and further validation will be carried out to ensure robust analysis before applying these methods to the investigation of adipose-specific metabolism of sex steroids.

Abstract No. 239: Comprehensive Genotyping for Kell System by Next-generation DNA Sequencing

A.J. Halawani, M. Kiernan, N. Kaushik, A.J. Reynolds, T.E. Madgett and N.D. Avent
Centre for Research in Translational Biomedicine, Plymouth, UK
amr.halawani@live.com

Blood group genotyping (BGG) has emerged as a core technique in transfusion medicine and has impacted on the clinical management of multi-transfused patients. The vast majority of these technical platforms require previous knowledge of the blood group polymorphisms under investigation. Next-generation sequencing (NGS) has emerged as a powerful replacement technology to genotyping single nucleotide polymorphisms (SNP), insertion/deletion (indels) and gene rearrangements. We have used NGS to define Kell alleles by amplification of the entire gene (KEL). DNA was extracted from 20 random blood donor samples. Two primer pairs were designed to amplify the entire KEL gene using long-range polymerase chain reaction (LR-PCR). The sequencing library was constructed by fragmenting the DNA, ligating into barcoded adaptors and size selected using SPRIselect magnetic beads. The sequencing template was then immobilised to sphere particles that clonally amplified using emulsion PCR, emulsion breaking and enrichment for positive sphere particles. Finally, the sequencing reaction was loaded into a chip and sequenced on the Ion Torrent Personal Genome Machine (PGM) that generating million of reads. Data was analysed using integrative genomics viewer (IGV) Version 2.3 and CLC Genomics workbench Version 6.0.4. Data from the serological testing was confirmed by NGS. Two samples were typed serologically as K antigen and four as Kpb and this was confirmed by NGS as an initial genotype as K antigen, Thr193Met (578C>T) and Kpb (Arg281, 841C and 842G). Moreover, one sample was found to be Kpa Arg281Trp (841C>T). All the high prevalence antigens of the Kell blood group system were detected by using such approach. NGS using LR-PCR approach offers a powerful technique enabling users to investigate comprehensive screening of all the Kell antigens. Similar approaches are in progress to define Rh alleles and that will reveal their variants in respect of the hybrid genes.

Abstract No. 242: The Effect of Bovine Serum Albumin on the Inhibition of Angiotensin-1-Converting Enzyme (ACE) and Lipid Oxidation

Wafa Alansari and Nazlin Howell
University of Surrey

Bioactive peptides represent an important source of health promoting food. They have shown several useful properties for human health, including antimicrobial, antioxidant, antihypertensive, antiviral and antitumor activities. Researchers have tried to synthesize bioactive peptides from food to study their properties and applications in various areas. It is been well known that dietary proteins provide a rich source of biologically active peptides. Recently, milk proteins are considered to be the very important source of bioactive peptides and an increasing number of bioactive peptides have been identified in milk protein hydrolysates. Bovine serum albumin (BSA) is a multi-functional carrier protein, present in food products such as meat and milk. In this study, special attention has been given to bioactive peptides derived from bovine serum albumin with antioxidant activities. To achieve this, Bovine serum albumin (BSA) was hydrolyzed using digestive enzyme pepsin. The prepared hydrolysate was fractionated using ultrafiltration membrane cartridges 10, 5 and 2 KDa molecular weight cutoff (MWCO). The fractionated hydrolysates were then investigated for antioxidant activity. Antioxidant activity of the fractionated hydrolysates were evaluated in a linoleic acid emulsion model system using ferric thiocyanate (FTC) and thiobarbituric acid reactive substance (TBARS) methods to monitor the formation of lipid peroxides and malondialdehyde respectively. Tests were performed every 24 hours over a period of six days, using trolox and butylated hydroxyanisole (BHA) as the positive control. The FTC and TBARS assay the results (taken on the day showing highest oxidation) revealed that all fractions had significant antioxidant activity. The 2 KDa fractions exhibited the highest antioxidant activity with 37.8% and 79.96% when using FTC and TBARS respectively.

Abstract No. 243: TRPM2 mediated zinc redistribution mediates H2O2 induced endothelial cell death

Nada Abuarab, Lin-Hua Jiang, Asipu Sivaprasadarao
School of Biomedical Sciences, University of Leeds, UK
ml09n3a@leeds.ac.uk

Oxidative stress plays a central role in the pathogenesis of atherosclerosis by causing vascular cell death. Mechanisms by which H2O2 leads to cell death, however, are unclear. One study reported that Zn2+ released from H2O2 oxidation of metallothioneins is the cause of cell death, while the other suggests that H2O2 activates the TRPM2 channel, resulting in Ca2+ influx and cell death. To address the controversy, we have examined the effect of H2O2 on human umbilical vascular endothelial cells using live cell imaging. Data recorded from "N" number of cells and "n" number of independent experiments are expressed as mean±SEM. P value of <0.05 (Student's t-test) was considered statistically significant. We found that both Ca2+ and Zn2+ are highly enriched in lysosomes. H2O2 treatment increased the cytosolic levels of both ions in most cells. In some cells, however, we found striking redistribution of Zn2+ from lysosomes to mitochondria: There was a decrease in the number of lysosomes with Zn2+ (untreated: 61±6%, n/N=5/82; H2O2 treated: 22±2%, n/N=5/59; P<0.01), with a concomitant rise in the number of mitochondria with Zn2+ (untreated: 15±2%, n/N=5/55; H2O2 treated: 42±5%, n/N=5/40; P<0.01). Inhibition of TRPM2 with PJ34 and 2-aminoethoxydiphenyl borate (2-APB) significantly reduced the H2O2 induced release of Zn2+ into the cytoplasm, as well as its translocation from lysosomes to mitochondria. Transfected HA-tagged TRPM2 channels showed co-localisation with the

lysosomal marker CD63 suggesting that TRPM2 mediates redistribution of Zn2+ from lysosomes to both cytoplasm and mitochondria.

Abstract No. 245: Role of MAP Kinase Phosphatase-2 (MKP-2) in Prostate Cancer

Institute of Pharmacy and Biomedical Science (SIPBS). University of Strathclyde, Glasgow, UK
ssmmnn33@hotmail.com

Background to the project: Prostate cancer is an increasing health care problem in the UK as well as United States. A key regulatory off switch for the (MAPKs) such as ERK, JNK and p38 MAP kinase is the dual specificity phosphatase, DUSP-4 also known as MAP kinase phosphatase-2 (MKP-2). This study was designed to examine the role of MKP-2 expression in the prostate cancer progression and development using two different cell lines, LNCaP androgen Insensitive (AI) and androgen sensitive (AS). Results: In this study Adenovirus MKP-2 (Adv.MKP-2) was used as a tool to study the effect of over-expression of MKP-2 on the kinetics activity of MAPKs in both cancer cell lines. In LNCaP AI and AS Immunofluorescente staining a revealed strictly nuclear expression and of the MKP-2 adenovirus, with more than 90% of the cells infected. Infection of both LnCaP AI and AS cells with Adv.MKP-2 significantly inhibited the phosphorylation of ERK and JNK. The kinetics of cell cycle progression was also examined. In both LNCaP (AS) and (AI) Adv.MKP-2 inhibited cell cycle progression as well as decreased proliferation it self. In vivo, MKP-2 was identified as being predominantly within the nucleus of prostate cancer tissues and also in examining 84 prostate tumours a number of correlates were established including metastases at diagnosis, age, Gleason score and plasma PSA level. These results indicate the potential for MKP-2 to influence cancer cell Progression and development.

Abstract No. 263: Next Generation Sequencing (NGS): a Powerful Tool Providing new Insights Into the Genomic Landscape of Oral Verrucous Carcinomas

Manar Samman[1], Henry Wood[1], Monica Pentenero[2], Alec High[3], Pamela Rabbitts[1].
[1.] Leeds Institute of Cancer and Pathology, University of Leeds, UK.
[2.] Department of Oncology, University of Torino, Italy.
[3.] St. James's University Hospital and Leeds Dental Institute, UK.
m.samman@leeds.ac.uk

Oral verrucous carcinoma (OVC) is a low grade variant of oral squamous cell carcinoma (OSCC). The aetiology of OVC is unknown, and the suggested role of human papillomavirus (HPV) as a causative factor remains contentious. Distinguishing OVC from OSCC is a common problem for pathologists due to the poorly defined diagnostic criteria. The rarity of these lesions also makes them difficult to investigate, so most previous studies have been made on small numbers of cases. The aim of this study is to use NGS copy number (CN) analysis to identify the genomic characteristic features of oral verrucous lesions, including OVC, and oral verrucous hyperplasia (OVH), and compare them with OSCCs, and to analyse those lesions for the presence of HPV. We identified a total of 62 oral verrucous cases: 49 OVCs, and 13 OVHs. DNA was extracted from all FFPE samples and sequenced at a coverage between 2.5% and 13%. Genomic CN karyograms were produced and compared between OVH, OVC and OSCC samples. All samples were analysed for the presence of HPV subtypes and for all known human viruses. Visual inspection of the 62 patient's CN karyograms demonstrated regions of gain and loss along the whole genome in OVC cases. Gain and loss features were minimally found in OVH cases. The analysis of CN aberrations across the entire OVCs data set revealed lower chromosomal instability features in OVCs

when compared to OSCCs. An HPV-16 sequence was detected in one OVH, and an HPV-2 was detected in one OVC out of the 62 cases. We confirm that NGS can be used as a powerful method for detection of HPV subtypes and loads, and provide CN karyograms for FFPE verrucous samples in a single test. Our results indicate that there is no HPV involvement in oral verrucous lesions.

Abstract No. 269: Depletion of the autophagy adaptor OPTN leads to increased osteoclast formation, fusion and survival as well as increased NF-κB activation in vitro

Rami Abdulhadi Obaid, Rheumatology Section, Centre for Molecular Medicine, Institute of Genetics and Molecular Medicine, University of Edinburgh, UK
abolayan77@gmail.com

OPTN encodes a cytoplasmic protein optineurin which has been shown to play a role in autophagy. Recent GWAS studies have shown that variants within OPTN are associated with the risk of Paget's disease of bone, a disease characterized by focal areas of increased bone turnover due to increased osteoclast activity, suggesting a possible role of OPTN in the regulation of bone metabolism.The aim of this study was to investigate the role of optineurin in osteoclast development using in vitro knock-down experiments in primary osteoclast precursor cells derived from mouse bone marrow. We used lentiviral particles expressing either shRNA targeted against the Optn gene or a non-targeting shRNA (-ve control) and Optn knock-down was confirmed (> 70%) using western blot analysis. Optn was expressed during osteoclast formation and its expression significantly increased during later stages of osteoclast development in WT mice. The number of osteoclasts formed from Optn-depleted bone marrow cells was significantly higher compared to non-targeted cells (253±39 vs. 139±41; $P<0.001$). We also found that the number of large osteoclasts (>10 nuclei) was higher in Optn-depleted cells (92±26) compared to non-targeted cells (37±18; $P<0.001$). Furthermore, Osteoclast survival after withdrawal of RANKL was 45% higher in Optn-depleted cells ($P<0.05$). Quantitative assessment of NF-kB activation by reporter assays showed significantly increased NF-kB activity in the Optn-depleted cells at the basal level and 72 hrs after stimulation with RANKL compared to non-depleted cells ($P<0.05$). In conclusion, Optn depletion is associated with increased NF-kB activity leading to enhanced osteoclast formation, size and survival. Our data suggest that OPTN may act as a negative regulator of osteoclast differentiation. This provides a possible mechanism by which variants in OPTN increase susceptibility to Paget's disease of bone but further studies will be required to investigate the role of OPTN in osteoclast biology.

Abstract No. 273: Expression of the B Cell Differentiation Factor BAFF and Chemokine CXCL13 in a Murine Model of Human Respiratory Syncytial Virus infection

Al Turaiki W[1], McFarlane A[2], Fitch P[2], Slupsky JR[3], McNamara PS[1], Schwarze J[2] and Flanagan BF[1].
[1]Department of Women's and Children's Health, Institute of Translational Medicine, University of Liverpool
[2] MRC-Centre for Inflammation Research,University of Edinburgh,UK
[3]Institute of Translational Medicine, University of Liverpool,UK
wael.909@hotmail.com

Background and aims: Production of antibody in the lungs is an essential defense mechanism against respiratory pathogens. However, little is known about the mechanisms of local B cell activation in airway mucosa. Previously, we have demonstrated expression of the B cell differentiation factor, BAFF in human RSV infection. To better understand this process we examined BAFF expression in a murine model of RSV infection and measured expression of the chemokines CXCL13, CCl19 and CCl21 which could influence lymphocyte recruitment. Methods: We measured BAFF, CXCL13, CCL19 and CCL21 expression in homogenised lung tissue from control mice at day 0 and mice challenged with RSV (A2 strain) or control UV-treated RSV at days 1,2,4 or 7 post infection (n=3) by ELISA. Cytokine mRNA and RSV N gene expression were measured by Taqman PCR. Results: BAFF was elevated significantly post RSV infection at day1 (mean1092pg/ml, P=0.07), day2 (1157pg/ml, P=0.01) and day 7(2941 pg/ml, P=0.0001) in comparison to UV treated RSV control on day1 (421pg/ml), day2 (370 pg/ml) and day7 (393pg/ml). BAFF mRNA expression was similarly increased on day 1 (fold increase 2, P=0.03) and day 7(1.7, P=0.02). CXCL13 protein was increased post RSV infection at day 1 (mean762pg/ml, P=0.01), day2 (612pg/ml, P=0.02), and day 7 (388pg/ml, P=0.007) in comparison to control day 1 (374pg/ml), day2 (278pg/ml) and day7 (249pg/ml). CCL19 or CCL21 levels were not increased. Conclusion: RSV infection results in up-regulated BAFF and CXCl13 expression, consistent with a role for CXCL13 in recruiting B cells and BAFF in promoting airway B cell differentiation.

Abstract No. 279: Status Analysis of Tumour Associated Factors in Normotensive and Pre-eclamptic Placentae

Reham Mohammed O Balahmar and Shiva Sivasubramaniam
School of Science and Technology, Nottingham Trent University, UK
odait4@hotmail.com

Tumour and early trophoblast have a sub-population of “stem like cells” (SLC's) which can proliferate to form heterogeneous cell groups (Sounderajan and Rao, 2002; Takao et al, 2011). However, tumour SLCs proliferate during invasion; while trophoblast cells proliferate and then invade. To date, the factors that are responsible for this uncontrolled versus controlled invasions are not fully understood. Potential candidates include gene families such as BIRC-6 [Baculoviral IAP repeat-containing protein-6]; transcription factors like TWIST [a basic helix-loop-helix transcription factor]; to enzymes such as ALDHs [aldehyde dehydrogenases] and AURK [aurora kinases] A, B & C. This study aims to compare the status of these factors in human placentae developed from normal trophoblast invasion (normotensive; NT) and pre-eclamptic (PE) pregnancies, where the invasion is low. It will also analyse the expression patterns of these factors in SLCs derived from transformed placental (TEV-1 and HTR8/sv-neo) and choriocarcinoma (placental tumour; JEG-3 and BeWo) cell lines. The mRNA expressions of these factors were compared in 13 NT and

12PE placentae by quantitative real-time RT-PCR. The results have shown that mRNA expressions of ALDH-3, and AURK C are down-regulated in PE placentae ($P<0.05$; Man Whitney U test), whilst the mRNA expression of AURKC and TWIST were up-regulated. This data indicate that these factors may be involved in trophoblast invasion. Western blot analysis is currently underway to see whether the changes in the mRNA expressions are faithfully shown at protein level. Preliminary in vitro cytotoxicity (MTT) assay to select SLCs using doxorubicin (DOX) has revealed that DOX at high concentrations (above 2000ng) severely reduce the cell viability in all cells up to 96 hours. Therefore DOX at concentrations from (2000 to 8000 ng)will be used to select a stable population of SLCs. Then the status of these factors between parental cells and the SLCs will be compared.

Keywords: Tumour, Stem-like cells, Placenta, pre-eclampsia, mRNA expressions.

Abstract No. 285: Transcriptional Regulation of Ucp1 in Adipcyte Cell Lines

Manal A. Malibary and Michael Lomax

AbstractRecent research has proposed that the changes in energy homeostasis, which lead to the development of obesity, are dependent on the balance between white and brown adipose tissue in the body. White adipose tissue (WAT) stores energy in the form of triacylglycerols and brown adipose tissue (BAT) expends energy due to the function of the BAT-specific uncoupling protein 1 (UCP1). The conversion of WAT to BAT has been demonstrated in rodents so remodeling of WAT to BAT in human offers a potential strategy for the prevention and treatment of obesity. Previous studies have demonstrated that the expression of UCP1 is under the complex control of a number of regulatory signals including cAMP, PPAR agonists, RXR agonists, thyroid hormones, insulin and glucocorticoids. The aim of this study is to establish whether combinatorial regulation is the key to unlocking the brown adipogenic gene expression programme in white adipocytes. Results indicated that RXR agonist, PPARgamma agonist and cAMP agonist act synergistically to induce mouse and human UCP1 expression in mouse cell lines. Future studies will evaluate the relevance of these studies to converting human white to brown adipocytes by using the human white preadipocyte cell line, to establish the optimum combination of brown adipogenic signals and confirming important results using human primary white adipocytes.

Keywords: Obesity, Genes, Adipose Tissue.

Abstract No. 286: Effect of bisphenol A, triclosan and cyclosiloxanes (D3, D4, D5) on suspension growth of MCF-10A immortalised non-transformed human breast epithelial cells.

Abdullah Farasani and Philippa Darbre
School of Biological Sciences, University of Reading, UK
farasani@hotmail.co.uk

The ability of anchorage-dependent epithelial cells to grow under anchorage-independent conditions has long been acknowledged as an in vitro model correlating with transformation in vivo. More recently, growth of MCF-10A immortalised but non-transformed human breast epithelial cells in semi-solid suspension culture has been established as a model system for identifying transforming ability of environmental oestrogenic chemicals. Bisphenol A, triclosan and cyclosiloxanes are all used widely in consumer products to which the human population is exposed and all have been shown to possess oestrogenic properties capable of stimulating monolayer growth of human breast cancer cells in culture. In this study, it has

been found that at concentrations of 10-7M to 10-5M, each of these compounds can also enable growth of MCF-10A cells in semi-solid methocel suspension culture. Over 21 days, only very small colonies of cells grew in the control cultures. Both the number and size of the colonies were increased by the presence of 70nM 17□-oestradiol and increased still further in the presence of bisphenol A, triclosan or cyclosiloxane, demonstrating that exposure to these compounds can induce a transforming phenotype in these cells. Since both bisphenol A and triclosan have been measured in human milk, further investigation is now justified into any potential link between the presence of these chemicals in the human breast and the rising rates of human breast cancer.

Abstract No. 303: The Effects of Organophosphates on Cardiomyocytes

Shatha Felemban
Nottingham Trent University, Nottingham, UK
shatha_gf@hotmail.com

Organophosphates (OPs) are compounds that have been widely used as insecticides and in a variety of applications in agriculture, veterinary medicine and as oil additives. OPs are known to display direct effects in both target and non-target species. They exert their acute toxicity in mammalian systems by acetylcholineesterase inhibition, leading to adverse effects on many organs. Several studies have reported that exposure to OPs may also cause cardiac toxicity, but their mechanisms of action are not well understood. This study aims to determine the effect of the OP phenyl saligenin phosphate (PSP) on the viability of differentiated rat cardiomyocyte H9c2 cells, and to assess the ability of PSP to affect cell signalling pathways associated with apoptosis. Cell growth and cell viability were measured by different techniques. Lactate dehydrogenase (LDH) release was measured as a marker of membrane damage and MTT ((3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazoliumbromide) reduction was used to measure metabolic activity. Both techniques were used to assess the minimum concentration of OPs that produced consistent and predictable levels of cell death. On a molecular level, western blot analysis was used to monitor several protein kinases which are implicated in cell death, differentiation and survival, such as, ERK1/2, PKB, p38, and JNK. The results indicated that 25μM PSP produced cardiotoxicity and that this effect was associated with in the activation (phosphorylation) of PI3K/AKT and JNK signalling pathways and the induction of apoptosis by activation of caspase-3.

Abstract No. 310: Integrative Genomic and Epi-Genomic Analyses Reveal Clinically Relevant Long Noncoding RNAs in Hypoxic Breast Cancer.

Hani Choudhry[1, 2, 3]
[1] Faculty of Science, King Abdulaziz University, Saudi Arabia
[2] The Wellcome Trust Centre for Human Genetics, University of Oxford,UK
[3] Department of Oncology, University of Oxford, UK

Physiological and transcriptional responses to hypoxia are central to the pathogenesis of both ischemic and proliferative diseases, including many types of cancer. Today, pan-genome analyses of these pathways have focussed on protein-coding genes and the role of non-coding RNAs in this response in largely uncharacterized. In this study, we investigated the hypoxia transcription landscape, PolII activity , hypoxia inducible factor (HIF) binding sites and histone markers (H3K4me3 and H3K4me1) of an ER positive breast cancer cell line [MCF7] grown in hypoxia (1%, O2) and normoxia using next generation of ribosomal depleted RNA, poly A+ RNA, small RNA and ChIP sequencing. We identified globe differences in

the response to hypoxia for different classes of RNA like protein coding genes and long non-coding RNA (lncRNA), such as MALAT1 and NEAT1, that ware up-regulated in hypoxia are associated with HIF binding and are down-regulated by suppression of HIF, indicating direct regulation of the non-coding as well as the coding transcriptome. We describe a number of hypoxia-regulated non-annotated RNA species, including several that are antisense to hypoxia regulated protein-coding RNAs. Transcriptional regulation by HIF is frequently associated with release of promoter paused RNApol2 that is pre-bound to promoters that are already accessible in normoxia. Expression of four hypoxically induced lncRNAs are analysed in 1000 breast tumours and found to be associated with poor survival and clinicopathological features of breast cancer. Our findings extend knowledge of the hypoxic transcriptional response into the spectrum of non-coding transcripts. We demonstrate that HIF can transcriptionally activate lncRNAs in addition to coding transcripts and link these to clinicopathological features. These HIF-regulated non-coding transcripts have the potential to act as new biomarkers for breast cancer as well as potentially novel therapeutic targets.

Keywords: Genomics, Breast Cancer, Non-coding, Next generation sequencing, Biomarker.

Abstract No. 312: A Novel Transglutaminase 2 Inhibitors Isolated from Natural Sources Against Celiac Disease

Maha Abdulrahman Aldubayan, Philip Bonner
Nottingham Trent University
mayd65@yahoo.com

Transglutaminases are calcium dependent enzymes which have been found to play a role in various disease states in human tissue. In coeliac disease transglutaminase-2 (TG2; EC 2.3.2.13) has been shown to deamidate glutamine residues on wheat gliadin peptides which then initiate an auto immune response leading to the debilitating symptoms of the disease. Currently, the only effective treatment of coeliac disease is to restrict coeliac sufferers to a gluten free diet. Various ex vivo studies with cell lines from different human disease conditions have revealed that transglutaminase inhibitors can be very effective therapeutic targets for treating debilitating conditions. The aim of the research was to isolate transglutaminase inhibitors from a variety of natural sources which may be useful in combating some of the above mentioned life threatening disease states of human beings. This study successfully identified two peptides from milk with potent inhibitory properties against both guniea pig liver TG2 and human recombinant TG2 (IC50 in the low nM range). It was important to further characterise these inhibitors in order to suggest their potential to be used as therapeutic targets against CD. Therefore these inhibitors were characterised using Human colon adenocarcinoma (HT29) cell line to observe the effect of isolated TG2 inhibitors on in situ TG2 activity. The cells were biotinylated using biotin X-cadaverine and the biotinylated target proteins in treated HT29 cells were captured with CaptAvidin beads and subjected to SDS-PAGE and Western blotting. In addition, the florescent assay confirmed the TG2 inhibitory characteristic of the identified peptides as treatment of HT29 cell lines with these inhibitors induced significant inhibition of TG2 activity. The TG2 inhibitors were able to inhibit the intracellular TG2 substrates protein in situ.

Keywords: Transglutaminase 2, inhibitors, activity.

Abstract No. 315: Investigating RNA editing in the pathogenesis of Amyotrophic Lateral Sclerosis

Authors: Khayria Alsomali, Dr. Julie Simpson and Dr. Paul Heath.
Sheffield Institute for Translational Neuroscience, University of Sheffield

Background: The susceptibility of motor neurons to injury in amyotrophic lateral sclerosis (ALS) may result from excitotoxicity and subsequent dysregulation of intracellular calcium homeostasis. Post-transcriptional editing of the AMPA glutamate receptor (GluR) subunit(s) may alter the calcium ion permeability of the receptor pore, leading to neurodegeneration. Objectives:The aims of the study are (i) to investigate GluR RNA editing in ALS compared to non-neurological controls, and (ii) to characterise TDP43 and p62 expression in ALS. Methodology:RNA extraction and cDNA preparation followed by amplification of cDNA by PCR was used to generate amplified GluR2, GluR5 and GluR6. These products were digested to produce cuts in the internal site of GluR mRNA and differentiate edited from non- edited GluR, and analysed by agarose gel electrophoresis and using the Agilent Bioanalyser. TDP-43 and p62 expression was assessed by immunohistochemistry. Results:GluR2 was fully edited in all motor cortex of ALS cases and controls. GluR5 was 83% edited in motor cortex of ALS cases and 82% edited in controls. Whereas, GluR6 editing in motor cortex was 88% and 91% in the ALS cases compared to 75% and 62% in controls, respectively. GluR2 was 100% edited in the motor neurons isolated by LCM. Phosphorylated TDP-43+ and p62+ skein-like bodies and compact inclusions were detected in C9ORF72/ALS positive cases and C9ORF72/ALS negative cases whereas no immunoreactivity was detected in the control healthy subjects. Conclusions: Our data on whole tissue sections suggests that GluR2 receptor of motor cortex in both sALS and control individuals is fully edited whereas partial editing has been identified in GluR5 and GluR6 receptors. Full editing of GluR2 in dissected motor neurons isolated by LCM was confirmed. Motor neurons in ALS cases, both C9ORF72+ and C9ORF72- expressed pathogenic inclusions of phosphorylated TDP-43 and p62, which are a hallmark for ALS.

Abstract No. 337: Dicarbonyl Stress and the Glyoxalase System in Periodontal Ligament Fibroblasts in vitro

Amal Ashour, Paul J Thornalley and Naila Rabbani
Warwick Medical School, University of Warwick, University Hospital, U.K.
a.a.d.ashour@warwick.ac.uk

Periodontal ligament (PDL) inflammation or periodontitis is a common disease characterized by gradual destruction of connective tissue fibres that attach a tooth to the alveolar bone. Diabetes and inflammation enhances periodontal bone loss through enhanced resorption and diminished bone formation. PDL fibroblast attachment and function to type 1 collagen is impaired by methylglyoxal (MG) modification in vitro. Glyoxalase 1 (Glo1) is the main enzyme catalysing the metabolism of MG in PDL fibroblasts. it is hypothesised that increased PDL detachment and dysfunction by MG may occur in biochemical dysfunction in hyperglycaemia and by increased exposure to exogenous MG by ingestion of high MG content food and beverages. The aim of this study was to evaluate the effects of low and high glucose concentrations and exogenous MG on the glyoxalase system in human periodontal ligament fibroblasts (hPDLFs) in vitro. Primary hPDLFs were cultured for three days with high glucose (25 mM) and low (8 mM) glucose to mimic hyperglycaemic conditions. Glo1 activity was determined by measuring the initial rate of formation of S-D-lactoyl-glutathione from the hemithioacetal substrate formed non-enzymatically from methylglyoxal and reduced glutathione (GSH).The reaction is followed spectrophotometrically at 240 nm; $\Delta\varepsilon 240 = 2.86$

mM−1 cm−1. D-glucose consumption and D-lactate formation were determined using end-point enzymatic assay spectrophotometrically at 340 nm and (λexcitation 340 and λemission 460 nm) respectively. Dicarbonyl content and protein damage markers of medium and cell protein were determined by stable isotopic dilution analysis using LC-MS/MS. There was a 49% decrease of glyoxalase 1 activity ($p<0.0001$) in hPDLFs incubated in high glucose compared to control. The flux of MG formation, as judged by increase in D-lactate, was increased 42% ($P<0.01$). To conclude, the exposure of PDL cells to high glucose down regulate Glo1 which may increase MG glycation to collagen and playing a role in PDL dysfunction.

Abstract No. 342: Deficiency in Gle1, an MRNA Export Mediator, Inhibits Schwann Cell Development in the Zebrafish Embryo

Nimah I. Alsomali, Adil Seytanoglu, Chiara F. Valori , H. Rosemary Kim , Ke Ning , Tennore Ramesh, Basil Sharrack, Jonathan D. Wood, Mimoun Azzouz
Neuroscience (SITraN),University of Sheffield,Academic Translational Neuroscience (SITraN)University of Sheffield, UK
mdp10nia@sheffield.ac.uk

GLE1 mutations are associated with Lethal Congenital Contracture Syndrome 1 (LCCS1), a severe autosomal recessive fetal motor neuron disease. The gene encodes a highly conserved protein with an essential role in mRNA export. The mechanism linking Gle1 function to motor neuron degeneration in the human syndrome has not been elucidated, but increasing evidence implicates abnormal RNA processing as a key event in the pathogenesis of several motor neuron diseases. We have found that homozygous gle1-/- mutant Zebrafish model various aspects of LCCS, displaying severe developmental abnormalities and embryonic lethality. These studies revealed a prominent defect in Schwann cell development, thereby suggesting that Schwann cell deficits may be a key factor undermining motor neuron survival in LCCS1. These findings are of great relevance and could bring future insight in the role of myelinating glial cells in the growing number of motor neuron diseases linked to RNA processing defects.

Keywords: Gle1, Motor neuron degenration, Zebrafish model, LCCS1, Mrna.

Abstract No. 349: Genotyping by Sequencing for Kell Blood Group System by Next-generation DNA Sequencing

A.J. Halawani, M. Kiernan, N. Kaushik, A.J. Reynolds, T.E. Madgett and N.D. Avent
School of Biomedical Sciences, Plymouth University, UK
amr.halawani@live.com

K antigen (KEL1), from the Kell blood group system, is a clinically significant antigen involved in haemolytic transfusion reactions (HTRs) and haemolytic disease of the foetus and newborn (HDFN). Blood group genotyping (BGG) has emerged as a core technique in transfusion medicine and has impacted on the clinical management of multi-transfused patients. Next-generation sequencing (NGS) has emerged as a powerful replacement technology to the current genotyping platforms. It provides high-throughput sequencing to screen many donors in a single run whilst remaining cost-effective. DNA was extracted from 20 random blood donor samples. Two primer pairs were designed to amplify the entire KEL gene using long-range polymerase chain reaction (LR-PCR). The sequencing library was constructed by fragmenting the DNA, ligating into barcoded adaptors and size selected using SPRIselect magnetic beads. The sequencing template was then immobilised to sphere

particles that clonally amplified using emulsion PCR, emulsion breaking and enrichment for positive sphere particles. Finally, the sequencing reaction was loaded into a chip and sequenced on the Ion Torrent Personal Genome Machine (PGM) that generating million of reads. Data was analysed using integrative genomics viewer (IGV) Version 2.3 and CLC Genomics workbench Version 6.0.4. Data from the serological testing was confirmed by NGS. Two samples were typed serologically as K antigen and four as Kpb and this was confirmed by NGS as an initial genotype as K antigen, Thr193Met (578C>T) and Kpb (Arg281, 841C and 842G). Moreover, one sample was found to be Kpa Arg281Trp (841C>T). All the high prevalence antigens of the Kell blood group system were detected by using such approach. NGS using LR-PCR approach offers a powerful technique enabling users to investigate comprehensive screening of all the Kell antigens. Similar approaches are in progress to define Rh alleles and that will reveal their variants in respect of the hybrid genes.

Keywords: Next-generation Sequencing, Blood Group Genotyping, Kell Blood Group.

Abstract No. 350: Therapeutic Strategies for Spinal Muscular Atrophy

Aziza AL-Rafiah*, Evangelia Karyka, Ke Ning, Mimoun Azzouz
Sheffield Institute for Translational Neuroscience University of Sheffield

Background: Motor neuron diseases are devastating neurological disorders. Spinal muscular atrophy (SMA) is caused by mutations in the survival motor neuron gene1 (SMN1) leading to reduced SMN protein level. SMN protein plays a crucial role in mRNA splicing and β-actin mRNA transport along the axons, therefore its deficiency causes axonal defects in motor neurons. The actin-binding protein Plastin 3 (PLS3) has been reported as a modifier for SMA. Recently, it was shown that the overexpression of the PLS3 gene improved axonal outgrowth in SMN-deficient motor neurons of SMA Zebrafish and mouse embryos in vitro. Aims: Our specific aims are to: i) evaluate the neuroprotective effect of PLS3 in in vitro models of SMA (NSC34 and purified motor neurons(MNs); ii) undertake efficacy pre-clinical proof-of-concept using adeno-associated vector serotype 9 (AAV9) encoding PLS3 in SMNΔ7 mouse model of SMA. Method: A lentiviral vector (LV) expressing human PLS3 was generated.LV-PLS3 virus has been produced ,titred and validated in NSC34 cells and MNs using western blot and immunofluorescence. AAV9 expressing PLS3 has been designed for in vivo proof-of-concept study. Results: Our in vitro preliminary data revealed that transduction of NSC34 cells with LV-PLS3 vector led to strong expression of PLS3 in these cells. Transduction of MNs in vitro with LV-PLS3 restored axon length in smn-deficient MNs. The oxidation stress levels were measured using (DCF) dye after inducing oxidative stress with serum withdrawal. Cell survival of NSC34 cells was assessed by 3-(4,5-dimethyl thiazol-2-yl) assay. The cells transduced with the lentiviruses expressing PLS3 gene. The data showed no effect of PLS3 gene on neuroprotection properties compared to control cells. Conclusions: Both LV and AAV9 vectors were validated and are functional. LV-PLS3 is being tested in in vitro models of SMA. Gene therapy approach using AAV9 encoding PLS3 is being therefore evaluated in SMNΔ7 mouse model of SMA.

Abstract No. 354: Role of Bcl-2 Family Proteins in Mediating CD40-Induced Drug Resistance in Chronic Lymphocytic Leukaemia (CLL)

Khalid Ben Naheet
Haematology / Cancer studies / University of Liverpool, UK
k.naheet@liverpool.ac.uk

Chronic lymphocytic leukaemia (CLL) is incurable malignancy characterised by the clonal expansion of mature B cells that are resistant to cell death. Fludarabine, an analogue of purine, forms the backbone of most CLL treatment regimens by virtue of its relatively specific cytotoxicity. Despite its therapeutic importance in CLL, resistance to fludarabine therapy remains a major clinical problem. One major mechanism of fludarabine resistance is thought to be the leukemic microenvironment, such as the lymph node. Here, cytoprotective interactions are largely mediated by the interactions between B-cell CD40 and CD154 on the surface of T cells. Such interactions can alter the expression levels and interacting partners of Bcl-2 family proteins that help mediate fludarabine-induced CLL cell death. In the present study we show that the treatment of resting CLL cells with fludarabine results in an upregulation of Puma expression and a concomitant increase in cell death. By immunoprecipitation Puma or Bcl-2 we show that these two Bcl-2 family members are coupled in resting CLL cells. Furthermore, siRNA knockdown of Puma abrogates fludarabine-induced cell death in resting CLL cells suggesting Puma may help induce fludarabine killing by binding and inhibiting anti-apototic Bcl-2. however, when we mimick the CLL cell microenvironment by culturing CLL cells with CD154-expressing mouse fibroblasts Puma no longer binds to Bcl-2 and fludarabine-induced cell death is inhibited. Taken together, these finding suggest that fludarabine-induced killing of resting CLL cells results from the indirect activation of cell death by upregulated Puma/Bcl-2 complexes and that fludarabine resistance when cultured on CD154-expressing fibroblasts may result from a failure of such activation to occur.

Abstract No. 363: Regulation of Prostaglandin Receptor Expression in Human Monocytic Cells Following Inflammatory Activation

Alaa Kashmiry, Rothwelle Tate and Dino Rotondo

Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, 161 Cathedral Street, Glasgow G4 0RE Inflammatory cells such as monocytes can be activated by bacteria via toll-like receptors leading to the release of pro-inflammatory cytokines, particularly tumour necrosis factor-α (TNF-α) and interleukin-1 (IL-1β) which sequentially induce prostaglandin (PG) production. It has been shown that PGs especially PGE2 and PGD2 can suppress the production of cytokines by negative-feedback regulation. There are multiple receptor subtypes for these PGs and it is uncertain which subtypes are specifically involved in the suppression of cytokine production. Therefore, the aim of the present study was to ascertain the expression profile of these receptors following activation of monocytic cells in the presence of lipopolysaccharide (LPS) and the PGs. Monocytes were isolated from Human blood (obtained from the Scottish National Blood Transfusion Service) and compared to the human monocytic cell line THP-1 which was grown continuously. Levels of TNF- α / IL-1β in plasma (or cell supernatants) were measured by ELISA. The expression of prostaglandin receptor genes (PTGER2, PTGER4, PTGDR1 and PTGDR2) were determined by PCR.LPS increased TNF- α / IL-1β levels in both blood and THP-1 cells. The LPS-stimulated levels of cytokines were suppressed by PGE2, PGD2. Expression of the PTGER2, PTGER4, PTGDR1 and PTGDR2 genes were enhanced by LPS and inhibited by PGE2 and PGD2 in both monocytes and THP-1 cells. This indicates that prostaglandins such

as PGE2 and PGD2 can limit the amount of cytokines (TNF- α / IL-1β) release in response to LPS and that this may occur via control of the expression of PGE2 and PGD2 receptor genes.

Abstract No. 364: Mild Heat Shock Can Stimulate Osteoblast Pproliferation and Mineralization Following the Treatment with Bisphosphonates.

Alqhtani NR, Salih V, Meghji S.
UCL Eastman Dental Institute, UK

Bisphosphonates are analogues of pyrophosphate. They have been used to treat bone diseases characterized by excessive bone resorption such as osteoporosis and malignant bone diseases.It is well known that bisphosponatesinhabit bone resorption by interfering with osteoclasts activity(1). Osteoblasts mediate many of the osteoclast functions including ofosteoclast formation and activity. We have previously shown that physiological stresses such as changes in pH or oxygen tension can affect osteoblasts(2;3). Preliminary work in our laboratory has shown that mild heat shock (42oC) for 5 minutes stimulate osteoblast proliferationand differentiation. Osteoblastic cell line; MC3T3 cells were treated with 15µM and 25µM of Alendronate and Pamidronateand incubated for 72 hours at 37oC. After that medium was changed and cells were exposed to 42oC for 5 minutes and then incubated for 7days. We assayed for cells proliferation using methylene blue proliferation assay and for the mineralization using Alizarin red S. staining. Preliminary results show that mild heat shock can reverse the action of bisphosphonate by stimulation osteoblasts proliferation and mineralization. These experiments show that mild heat shock may modulate bone turnover by stimulating proliferation and mineralization following the treatment of bisphosphonate drug.

Abstract No. 367: Ticagrelor and Dipyridamole Potentiate Adenosine-Induced Stimulation of Neutrophil Chemotaxis in the Presence of Erythrocytes

Khalaf F. Alsharif, Heather M. Judge, Victoria C. Ridger. Robert F. Storey
Sheffield University

Introduction: Ticagrelor is a dual inhibitor of platelet P2Y12 receptors and cellular adenosine reuptake. Ticagrelor was shown to reduce mortality in patients following acute coronary syndromes compared to clopidogrel in the PLATO study and the mechanisms underlying this mortality reduction are unclear. A post hoc analysis of PLATO suggests that ticagrelor may reduce susceptibility to pulmonary infection compared to clopidogrel therapy, raising the possibility of differential effects of the drugs on host defence. We therefore studied whether adenosine reuptake inhibition by ticagrelor as well as another adenosine reuptake inhibitor, dipyridamole, might influence leukocyte function. Cangrelor, like ticagrelor, is a reversibly-binding P2Y12 receptor inhibitor but belongs to a different chemical class that is not known to inhibit adenosine reuptake and was therefore used as a control. Methods: Neutrophils and erythrocytes were isolated from healthy volunteers using Histopaque ficoll gradient centrifugation. The effects of ticagrelor, dipyridamole and cangrelor on IL-8-stimulated neutrophil chemotaxis were determined over 30 minutes in the presence or absence of i) erythrocytes and/or ii) adenosine 10 nM. Results: Adenosine 10 nM caused a significant increase in neutrophil chemotaxis ($P < 0.01$). Erythrocytes attenuated the effects of adenosine on neutrophil chemotaxis in the presence of cangrelor or control whereas ticagrelor and dipyridamole both preserved this effect of adenosine in the presence of erythrocytes (both $P < 0.01$). Conclusion: Inhibition of adenosine reuptake by ticagrelor and dipyridamole leads to potentiation of the effects of adenosine on neutrophil chemotaxis in the presence of erythrocytes. This represents a potential mechanism by which ticagrelor could influence host defence against bacterial lung infection.

Abstract No. 368: The Utility of the 96-Well Plate Based Whole Blood Assay for Platelet Aggregation to Assess the Effects of Antiplatelet Agents

Mohammad Algahtani[1], Natalia Dovlatova[1], Marie Lordkipanidzé[2], Jane May[1], Steve P Watson[2] and Sue Fox[1]
[1]Cardiovascular Medicine, University of Nottingham, UK
[2]Birmingham Platelet Group, University of Birmingham, UK
godmah86@hotmail.com

Background: Platelet function testing to assess the efficacy of antiplatelet drugs is increasingly being used. We have developed a 96-well plate-based assay to assess platelet aggregation in whole blood and investigated its sensitivity to platelet inhibition by aspirin and P2Y12 receptor antagonists in vitro and ex vivo. Methods: Platelet aggregation was assessed in whole blood obtained from healthy volunteers (n=10) and incubated with aspirin and/or cangrelor and in blood samples obtained from patients after acute coronary syndrome (ACS) receiving dual antiplatelet therapy with aspirin and either clopidogrel (n=14) or prasugrel (n=14). 46 µl of whole blood was added to each well in the 96-well plates coated with 4 µl of arachidonic acid (AA, 0.03 - 1mM), ADP (0.3 - 30µM), collagen (0.1 - 10µg/ml) and TRAP (0.1 - 10µM), or vehicle; the plate was shaken for 5 min at 1000 rpm at 37ºC and a fixative solution (Platelet Solutions, Nottingham) was applied to stop platelet aggregation and stabilize samples for up to 9 days. Aggregation was assessed by flow cytometry as a decrease in the number of single platelets. Results: Aspirin inhibition of platelet response to AA was dose dependent at concentrations <0.5mM. However, at 1mM of AA considerable aggregation was observed, which probably resulted from the lysis of red cells and release of ADP, as this aggregation was inhibited by cangrelor. P2Y12 antagonists both in vitro and ex vivo induced profound inhibition of ADP-induced aggregation. As expected in ACS patients this effect was significantly more pronounced in patients receiving prasugrel as compared to clopidogrel (p=0.007). Collagen- and TRAP-induced aggregation were also impaired to a different extent. Conclusion: This study suggests that this 96-well plate-based whole blood aggregation assay could be used to assess platelet function and the effect of commonly used antiplatelet agents both in vitro and ex vivo.

Abstract No. 372: Correlation Between ICDAS and ERK Histological Classification System Applied to Micro-CT Images of Occlusal Surfaces

T.S.M. ALJamaana, P. Andersonb, D.N.J. Rickettsa
[a] Dundee Dental School, University of Dundee,
[b] Institute of Dentistry, Queen Mary University of London, UK.
jamaan73@hotmail.com

ICDAS is a reproducible and accurate visual caries diagnosis/detection system. The ERK Histological criteria were originally developed for use with standard histological preparations (Ekstrand et al 1997. Caries Research; 31:224-231). Micro-CT is a 3D non-destructive imaging system which can be used to visualise the extent of lesion penetration. The overall aim of this study was to establish the use of Micro-CT as a gold standard for the validation of ICDAS. In this particular study, the aim was to investigate the use of ERK to classify the extent of lesion penetration as visualised in Micro-CT imaging and to compare with ICDAS examination scores of the same teeth. Fourteen extracted teeth were selected with varying appearance from sound to non-cavitated lesions on the occlusal surface. Three trained examiners independently examined one to two investigation sites per tooth (n=18) according to the ICDAS criteria (www.ICDAS.org). This was repeated at a second sitting. Teeth were scanned using a desktop µCT 40 Scanco system with an isotropic resolution of 20 µm.

Reconstructed images were imported into ImageJ, and two examiners evaluated lesions depths if present using the ERK criteria. Consensus ERK scores were used as the "gold standard". From the Micro-CT images 3 sites gave a score 0, 3 scored 1, 8 scored 2, and 4 scored 3. The relationship between ICDAS scores and the histological depth determined from the Micro-CT images were moderate – strong (rs = 0.481, 0.605, 0.668, $p < 0.05$). Inter-examiner reproducibility for ICDAS was fair - moderate (unweighted kappa = 0.25-0.8; mean = 0.45), while intra-examiner reproducibility was substantial (unweighted kappa = 0.68-0.8; mean=0.72). In conclusion, application of subjective histological criteria to Micro-CT images acts as an acceptable "gold standard" for the ICDAS system on occlusal surfaces.

Keywords: occlusal, caries, Micro-CT.

Abstract No. 387: Generation of A Virus-like Particle Vaccine Candidate for HIV Using Fowlpox Virus 9 (FPV9) Recombinant Vector Carrying Simian Immunodeficiency Virus (SIVmac239) Sequences

Alsafi R.[1], Chikkana-Gowda CP.[1], Vallely P.[1] and Blanchard T.[1, 2]
[1]Microbiology and Virology Unit, University of Manchester, UK.
[2]Department of Infectious Diseases, North Manchester General Hospital, UK

HIV infection is still posing a global threat and a major challenge to health care system. At the end of 2010, it was estimated that around 34 million people were living with HIV worldwide, and there is still no safe and effective vaccine to prevent HIV infection. Hence, this study is aimed to develop an HIV vaccine, but by studying a related simian immunodeficiency virus of macaques, SIVmac239 strain. In this study, we are using a highly attenuated host range-restricted fowlpox strain, FPV9, to express different SIVmac239 proteins. Recombinant FPV9 has been safely administered to humans with no ill effects, and is shown to generate specific and potent immune responses to the target recombinant proteins. Methods: Multiple FPV9 transfer plasmids encoding various SIVmac239 proteins were successfully designed, constructed and verified by restriction enzyme (RE) digestion. In these FPV9 transfer plasmids, we employed a transient dominant-colour selection (TDS) strategy to facilitate the screening of the positive FPV9 recombinants. The insertion of SIVmac239 sequences into the FPV9 genome at the targeted locations was carried out using standard homologous recombination technique in primary chick embryo fibroblasts (pCEFs). The expression of β-galactosidase marker gene was used as a screening tool to confirm the construction of recombinant FPV9. Results and Conclusions: Recombinant FPV9 carrying the Env and Rev regions of SIVmac239 were generated and the positive recombinants were screened by the detection of β-galactosidase gene expression. With further several rounds of plaque purification a pure recombinant has been isolated and subsequent elimination of the non-essential marker gene and plasmid sequences are in progress. We will report results of the confirmation PCR assay demonstrating insertion of Env and Rev encoding sequences.

Abstract No. 396: Counterfeit and Substandard Medicines in Canada: a Retrospective Review of Drug Recalls (2005–2011)

Tariq Almuzaini, Helen Sammons and Imti Choonara
Academic Division of Child Health, University of Nottingham,
Derbyshire Children's Hospital, Derby, UK
mzxta@exmail.nottingham.ac.uk

Objective: To determine the extent of counterfeit and substandard medicines in Canada. Methods: A search for drug recalls relating to defective medicinal products through the website of Health Canada between 2005 and 2011. Results: There were 397 defective medicines of which 395 were substandard. The two most frequent problems were stability (121 incidents) and contamination issues (85 incidents). Tablet formulations (145 incidents) were the formulation most frequently affected. There were two counterfeit medicines reported over the seven year period. The number of defective medicines reported by Health Canada increased from 42 in 2005 to 98 in 2011. Conclusions: Substandard medicines are a significant problem in Canada. Their incidence appears to be increasing and they have resulted in a significant number of recalled medicines. Most of the failures were related to stability issues, raising the need to investigate the root causes and force stringent preventative measures to be implemented by manufacturers.

Abstract No. 408: Regulation of Adipocytes in Polycystic Ovarian Syndrome Patients

Alshammari G.1, Khan R.2, Brameld J1. and Lomax M.A1.
shammrigh@hotmail.com
[1] School of Bioscience, University of Nottingham, UK
[2] School of Medicine & Health Sciences, University of Nottingham,UK

Polycestic ovarian syndrome (PCOS) is defined as a complex genetic condition and endocrine disorder. Prevalence of PCOS is around 7% to 20% of premenpausal female. Human adipocytes cell line (SGBS) were used to investigate the effect of different doses of steroid hormones on differentiated adipocytes. RNA was extracted, cDNA synthesised and mRNA quantified using standard qRTPCR. The results show that free testosterone and estradiol at physiological doses do not alter expression of PPARγ, CEBPα, and adiponectin in differentiated adipocytes. Expression of resistin, IL-6, and TNFα was very low in SGBS and not altered by sex steroids. Future work need to conducted on human primary cell line Cells.

Abstract No. 412: The Association of Homozygote T Allele of Rs2943641 Polymorphism near of IRS1 Gene in the Susceptibility to Autism

Ghaliah Obaid Alnefaie
University of Glasgow

Autism disorder is a neuro-developmental disorder, it is heterogeneous with multiple genes defects that can lead to autism. The incidence has increased from 1980 to 1990, 5/10,000 to 37/10,000 respectively. The increase in the frequency has led to huge studies being carried out in this field. The main causes and the pathway of the disease is as yet unclear. However, several reports have been documented that indicate that CNVs and single genes disorders which are involved in multiple pathways have a role in the development of autism. The main genes that are associated with ASD are involved in mTOR/PI3K pathway. MTOR/PI3K pathway is responsible for the growth rate and pruning of cellular-synapse. Therefore, increase the activity of this pathway due to mutations in the upstream or downstream of the pathway it may cause ASD to develop. The aim of this dissertation is to

present a new aspect by indicating the association of homozygote T allele of rs2943641 polymorphism in IRS1 that is involved in the PI3K pathway and increase the susceptibility to ASD. The effect of homozygote T allele of rs2943641 has been previously reported as increasing the expression of IRS1. Increase in the expression leads to an increase in the phosphorylation of PI3K that may hyper-activate the pathway. An allelic discrimination assay was suggested to determine the most common allelic variation of rs2943641 in autistic patients in Saudi Arabia. If the result indicates an association between the T allele of rs2943641 and ASD, a new aspect in the genetic causes for autism will have been added.

Abstract No. 432: Study on Genomic Instability in Chronic Lymphocytic Leukaemia

Faris J. Tayeb, Andrew R. Pettitt, Ross Sibson, Ke Lin, Gillian G. Johnson
Department of Molecular and Clinical Cancer Medicine (Haematology), University of Liverpool, UK
ftayeb90@liv.ac.uk

Chronic lymphocytic leukaemia (CLL) is the most common leukaemia in the West countries, occurring mainly in the elderly (1). As a hallmark in malignancies, genomic instability is a characteristic of almost all human cancer, it can present as microsatellite instability and base-pair mutation, with changes in chromosomal structure and number being the most visible type. In hereditary cancer, it is believed that genomic instability is caused from mutations in DNA repair genes (2), unlike sporadic caner (as CLL), the molecular mechanisms underlying genomic instability still unclear. Despite lacking unique recurrent genomic aberrations, genomic instability exists obviously in CLL, and is characterized by serial chromosomal alterations including deletions at 6q21, 11q22-23, 13q14, 17p13, and trisomy 12 (3). Clearly, understanding the molecular basis of the genomic instability in CLL, especially the roles of abnormalities of DNA repair, is among the most attractive research activities. However, investigation in this field has long been hampered, largely due to the resting status in cell cycle of CLL cells which made it particularly difficult in genetic studies using conventional methods. In particular, it is unclear whether there is any underlying damage to the DNA repair genes, the nature of which could help to explain particular clinical phenotypes. This may now be addressed through the advent of recently invented next-generation sequencing (NGS), a powerful technique which can identify any forms of genomic aberrations in target genes or in the whole genome of resting cells (4-8). To utilize this approach, the study is initially using DNA from CLL cells of ten cases which will undergo deep sequencing to examine up to 189 genes involving in the DNA repair pathways in parallel with whole-genome paired-end sequencing to detect large structural rearrangements. Comparison of both results will allow identifying candidate DNA repair genes related to the genomic instability in CLL.

Keyword: Chronic lymphocytic leukemia, DNA repair, Next generation sequencing, Genomic instability.

Abstract No. 444: Anti-Hepatitis C Virus E2 Peptides using Phage Display Technology

Abdulrahim R Hakami, Richard A Urbanowicz, Patrick C McClure, Jonathan K Ball, Alexander W Tarr
Virology, Queens Medical Centre, The University of Nottingham, UK
nixah@nottingham.ac.uk

Introduction: Phage display (Ph.D.) technology is a powerful tool for displaying random peptide sequences on the bacteriophage coat protein. These peptides can be selected using a biopanning technique in which the filamentous M13 bacteriophage library is enriched by iterative rounds of selection using the target/ligand of interest to yield phage expressing peptides showing specific binding to the target molecule. Aim: The aim of this study is to identify peptides capable of high affinity binding to the Hepatitis C Virus (HCV) E2 glycoprotein through biopanning using a variety of random peptide phage display libraries and then investigate their potential to inhibit HCV entry. Results: 24 phage clones were selected after the second round of biopanning. The selected phage clones displaying a 12-mer peptide (Ph.D.-12) have shown cross-reactivity to HCV E2 glycoprotein using enzyme immunoassay. Different phage clones exhibited different binding ability, suggesting that the selected peptide sequences have varied biochemical properties. Some of the phage clones were also able to neutralise entry of lentivirus pseudoparticles supplemented with HCV E1E2 by more than 40%. P 2.12 recombinant phage has shown a statistically significant result in suppressing HCVpp entry compared to its inhibitory effect on vesicular stomatitis virus (VSV) as a control ($P < 0.05$). A consensus key among the peptides was obtained from peptide sequence alignment (CLUSTAL W). Conclusion: These results suggest that phage display technology might be a successful approach to select specific peptide inhibitors to HCV infection. Further studies are underway to identify the regions of E2 targeted by these phage peptides and also assess possible synergy with other peptides and neutralising antibodies, as well as possible escape mechanisms.

Abstract No. 446: Is Megalin Phosphorylation the Reason for Kidney Damage in Myeloma?

Dalia Mohammed Alammari
University of Leicester
dma11@le.ac.uk

Cancer is a leading cause of disease worldwide. According to the World Health Organization nearly14% of deaths is attributable to cancer and among these Multiple Myeloma (MM) comes second in the top five cancer deaths in Saudi Arabia. MM is a tumorous deregulation of antibody producing, normally end differentiated plasma B cells in the bone marrow,which leads to an increase in circulating levels of Light Chain (LC) from 500mg up to 100,000mg per day.This in turn leads to an increased burden on the kidney to reabsorb this protein, affecting in particular the proximal tubules. Therefore, MM has a direct effect on the kidney function. In fact, renal failure is complication affecting about a third of patients with myeloma. Proteinuria describes the pathological excess of plasma proteins in the urine (> 0.01g/100ml) and, is a hallmark of progressive renal dysfunction. The reason for this is that the normal reabsorption capacity of the kidney is exceeded. Reabsorption of proteins have utilises specialised uptake receptors. Megalin is one such PTEC receptor that binds proteins and mediates their uptake. In proteinuric nephropathy the cytoplasmic tail of megalin (MegCT) is phosphorylated. The project pursues the hypothesis that protein mediated renal toxicity comes from the interaction between proteins in the urine and megalin on the PTECs. This is tested by studying intracellular signalling through phosphorylation of

MegCT. Antibodies directed against specific activation sites of the intracellular portion of megalin were raised in rabbit and used in Western blotting of stimulated HK2 cells (human PTECs). Our results show that megalin readily phosphorylates after exposure of HK2 cells to a pathological concentration of protein. Potentially this uncovered mechanism may be attractive for drug development to benefit patients with kidney failure and as such may save lives.

Abstract No. 451: Seroimmunity Profile, Associated Knowledge and Concerns of Hepatitis B, Varicella and Measles Infections Among New Employees Recruited in Saudi National Guard

Majid Althaqafy, Richard McNally, Shahaduz Zaman, Mark Pearce
Newcastle University, UK

Hepatitis B virus (HBV), varicella and measles are all vaccine-preventable diseases that are easily transmitted in healthcare facilities as well as military facilities [1,2].The mortality and morbidity associated with these infections can be serious [1]. In addition, the high cost of controlling transmission and restriction outbreaks is a significant economic burden [2].Vaccines against HBV, varicella and measles are all highly effective in reducing the incidence of these diseases and preventing outbreaks [1]. Despite deliberate efforts provided by the health sectors for prevention and control of communicable diseases in Saudi Arabia, vaccine preventable diseases such as HBV, measles and varicella are still considered as the most common reported infectious diseases among adults [2].The purpose of this study to explore the epidemiological pattern, sero-immunity and associated knowledge, concern, on HBV, varicella and measles infections among new employees in Saudi National Guard; and to explore barriers of vaccine compliance and perception of particular disease preventive measures among the health care providers, military soldiers and the clients. The tools of study are secondary data of blood sampling: routine HbsAg, HBcAb, anti-HBs, IgM and IgG antibodies, self-administrated questionnaire, focus group discussion, and in depth interview. To conclude, the focus of this study is expected to contribute in planning for prevention and control of these diseases and improving vaccine compliance.

Abstract No. 452: Measurement of Dose Enhancement Close to High Atomic Number Media Through Use of Optical Fibre Thermoluminescence Dosimeters

Amani I. Alalawi[1, 2], M.A.Barry [3], R.P. Hugtenburg[4], A.Nisbet[2, 3],
Khalid S. Alzimami[1, 5], D.A.Bradley[1]
[1]Department of Physics, University of Surrey, UK
[2]Physics Department, Umm AL-Qura University, Saudi Arabia
[3]Department of Medical Physics, , St Luke's Cancer Centre The Royal Surrey County Hospital (RSCH) NHS Trust, Guildford, UK
[4]Department of Medical Physics and Clinical Engineering, Abertawe Bro Morgannwg UHB and School of Medicine, Swansea University, UK
[5]Department of Radiological Sciences, King Saud University, Saudi Arabia
A.Alalawi@surrey.ac.uk

Many techniques have been investigated in seeking to achieve the primary aim of radiotherapy, namely of maximising the delivery of ionising radiation to the target volume while minimising dose to the surrounding normal tissue. The main aim of this project is to establish a new way to maximize the dose to the target and minimize it for the surrounded tissue using gold I nano scale to promote photoelectron generation using commercially available silica-based fibres and a Gulmay x-ray set operating at 250 kVp. Selected fibres were coated using a turbo sputter coater (Quorum Technologies Ltd, UK), producing 20, 40, 60, 80, and 100 nm thick coatings. The fibres were then irradiated in a specially designed Perspex cube phantom of side 6 cm. Besides, simulation with two codes; FLUKA and DOSRZnrc, are curried out as well. The dose enhancement is calculated by dose enhancement factor (DEF) which is defined as the ratio of dose deposited in the Au-coated fibre, divided by the dose deposited in the uncoated fibre. The highest measured dose enhancement was 1.33±0.01 for a 80 nm Au coating thickness, corresponding to a maximum path length through which a photon can travel of 160 nm. The simulations and measured DEFs similarly agree with each other as well as with the experimental results. The dose enhancement technique offers potential for a number of thin target radiotherapy treatments, as in radiation synovectomy, overcoming issues in use of radioactive materials and in use of metallised nanoparticles. The analogue gold coated fibre TL measurement technique has been developed in association with Monte Carlo methods to verify the delivered dose in such thin targets. The technique avails itself to study of DEFs for other metallic element coatings.

Abstract No. 458: High Prevalence of JCV Polyomaviruse Sequences in the Cervical Tissue of HIV-Infected Patients with Cervical Carcinomas

Bandar Alosaimi
Viral Oncology Laboratories, University of Manchester Institute of Cancer Sciences, Research Floor 5, St Mary's Hospital, Manchester, M13 9WL, UK
anabandar@hotmail.com

Background: The human polyomaviruses, BKV and JCV are ubiquitous in human populations worldwide. They sub-clinically establish persistent, latent infections and are capable of reactivating in a setting of immune suppression or immunodeficiency, leading to disease progression. We investigated the frequency of BKV and JCV existence in HIV-infected patients in comparison with HIV-negative patients. Patients and Methods: A sample bank of 220 cervical smears from Kenyan women, in addition to 109 tissue biopsies from women with positive cervical carcinoma were analysed by a nested PCR for the large Tag gene of the sequences both BKV and JCV genomes. Results: The overall prevalence of BKV-JCV DNA in cervical specimens was 24/329 (7.3%). BKV-JCV DNA was detected in 5/105

(4.7%) of cervical smears and in 6/37 (16%) of cervical carcinomas from women infected with HIV whereas 9/115 (7.8%) of the cervical smears and 4/72 (5.5%) of the carcinomas were positive in HIV negative women. Nested PCR showed that all 24 samples were positive for JCV and not BKV. Conclusion: A correlation between the presence of JCV and immune status was found statistically significant (p= 0.025). Prevalence of JCV sequences was found 4 times higher with cervical tissue carcinomas in comparison to precancerous cervical smears in HIV-infected patients. JCV reactivation in a setting of immunodeficiency may associate with HPV infection to establish an etiological role in the progression to cervical cancer.

Keywords: HIV; HPV; BK virus; JC virus; Immunocompromised; Cervical Cancer.

Abstract No. 462: Identifying the requirement of HDAC1 and HDAC2 in ES cell.

Shereen Jamaladdin

Histone deacetylase 1 and 2 (HDAC1/2) form the core catalytic components of co-repressor complexes which modulate gene expression. Conditional knockout of either HDAC1 or HDAC2 has a minimal effect on ES cells, suggesting their activity is largely redundant. We have therefore generated an embryonic stem cell (ES) line in which Hdac1 and Hdac2 can be inactivated simultaneously using a Tamoxifen inducible CreER fusion. Loss of HDAC1/2 resulted in a 60% reduction in total HDAC activity and a loss of cell viability. Cell death is dependent upon cell cycle progression, since differentiated, non-proliferating cells retain their viability. Consistent with a critical role in the regulation of gene expression, microarray analysis of Hdac1/2 deleted cells reveals 1,706 differentially expressed genes (992 up-regulated genes and 714 down-regulated genes). Significantly for the maintenance of stem cell self-renewal, we detected a reduction in the expression of the pluripotent transcription factors, Oct4, Nanog and Rex1. HDAC1/2 activity is regulated through binding of an inositol tetraphosphate molecule [Ins(1,4,5,6)P4] (IP4) sandwiched between the HDAC and its cognate co-repressor. This raises the important question of whether IP4 regulates the activity of the complex in cells. By rescuing the viability of double knockout cells, we demonstrate for the first time that mutations that abolish IP4 binding reduce the activity of HDAC1/2 in vivo. Our data indicate that HDAC1/2 have a generic, but essential role in cellular proliferation and regulate stem cell self-renewal by maintaining expression of key pluripotent transcription factors.

Abstract No 465: Differential Effects of Polyphenols on Proliferation and Apoptosis in Human Myeloid and Lymphoid Leukemia Cell Llines.

Mahbub A , Le Maitre C , Haywood-Small SL ., McDougall G ., Cross NA ., Jordan-Mahy N

[1:] Biomedical Research Centre, Sheffield Hallam University, UK

[2:] Scottish Crop Research Institute, Dundee, Scotland.

Background: Mortality rates for leukemia are high despite considerable improvements in treatment. Since polyphenols exert pro-apoptotic effects in solid tumors, our study investigated the effects of polyphenols in haematological malignancies. The effect of eight polyphenols (quercetin, chrysin, apigenin, emodin, aloe-emodin, rhein, cis-stilbene and trans-stilbene) were studied on cell proliferation, cell cycle and apoptosis in four lymphoid and four myeloid leukemic cells lines, together with normal haematopoietic control cells. Methods: Cellular proliferation was measured by CellTiter-Glo® luminescent assay; and cell cycle arrest was assessed using flow cytometry of propidium iodide stained cells. Apoptosis was investigated by caspase-3 activity assay using flow cytometry and apoptotic morphology

was confirmed by Hoescht 33342 staining. Results: Emodin, quercetin, and cis-stilbene were the most effective polyphenols at decreasing cell viability (IC50 values of 5-22 μM, 8-33 μM, and 25-85 μM respectively) and inducing apoptosis (AP50 values (the concentration which 50% of cells undergo apoptosis) of 2-27 μM, 19-50 μM, and 8-50 μM respectively). Generally, lymphoid cell lines were more sensitive to polyphenol treatment compared to myeloid cell lines, however the most resistant myeloid (KG-1a and K562) cell lines were still found to respond to emodin and quercetin treatment at low micromolar levels. Non-tumor cells were less sensitive to all polyphenols compared to the leukemia cells. Conclusions: These findings suggest that polyphenols have anti-tumor activity against leukemia cells with differential effects. Importantly, the differential sensitivity of emodin, quercetin, and cis-stilbene between leukemia and normal cells suggests that polyphenols are potential therapeutic agents for leukemia.

Keywords: Differential effects, polyphenols, proliferation, apoptosis, human myeloid and lymphoid leukemia cell lines.

Abstract No. 469: A New Bufadienolide Glycoside and a Homoisoflavonoids from Rhodocodon campanulatus (Asparagaceae)

Alaa Alqahtania, Moses K. Langata, Wolfgang Wetschnigb and Dulcie A. Mulholland
Department of Chemistry, FEPS, University of Surrey, UK
Institute of Plant Sciences, University of Graz, Holteigasse, Austria

The use of plants as medicinal agents dates back thousands of years. Medicinal plants continue to provide immense benefits in drug discovery, proving to be a rich source of biologically active molecules, many of which have become life saving drugs. Rhodocodon campanulatus is a member of the bulbous Urgineeae tribe of the Scilloideae subfamily of the expanded Asparagaceae family (formerly Hyacinthaceae). Plants of the Urgineeae tribe are used as traditional remedies for the treatment of several ailments, such as infections, rheumatism, inflammation and disorders associated with the central nervous system [1]. The Urgineeae tribe is distributed from South Africa to the Mediterranean, Saudi Arabia, India and Myanmar [2]. The chemical constituents of plants of the Rhodocodon genus are not documented and hence the plant was investigated for chemotaxonomical reasons. In this study we report the isolation of a novel bufadienolide glycoside and a known homoisoflavonoid from the ethanol extract of the bulbs of Rhodocodon campanulatus. The major compounds were novel bufadienolide glycoside, 1, 3β-(O-β-D-glucopyranoside)-14β-hydroxybufa-20,22-dienolid-19-al, the known homoisoflavonoid, 2, 5,7-dihydroxy-3-(3-hydroxy-4-methoxybenzyl)chroman-4-one and the acetylated derviteves 3 and 4. Compound 2 previously isolated from the South African Scilla kraussi [3]. The structures of 1 and 2 were determined by the analysis of their NMR and MS spectra. The absolute configuration at C-3 for 2 was determined in this study as S on the basis of its electronic circular dichroism study. A positive Cotton effect at 290 was in agreement to those reported for homoisoflavonoids with H-3 in β position [4]. The compounds will submit to NSI for biological screening.

Abstract No. 471: Oxidative Stress and DNA Damage in Cerebral White Matter Lesions of the Ageing Human Brain

Al-Mashhadi SA[1], Simpson JE[1], Heath PR[1], Dickman MJ[2], Ince PG[1], Wharton SB[1]
[1]Department of Neuroscience, University of Sheffield, UK
[2]Department of Chemical and Biological Engineering, ChELSI Institute, University of Sheffield, UK.
salmashhadi3@shef.ac.uk

Introduction: White matter lesions (WML), identified as hyperintensities on T2-weighted magnetic resonance images (MRI) in the ageing brain, are associated with dementia and depression in the elderly. Ischaemia may contribute to their pathogenesis. Aims: The current study investigates the hypothesis that oxidative DNA damage contributes to the pathogenesis of WML. Methods: Oxidative DNA damage was investigated in WML and control WM, both from cases with WML and without WML derived from the MRC-Cognitive Function and Ageing Study. Lesions were previously identified using post mortem MRI. 8-hydroxy-2'-deoxyguanosine (8-OHdG)was detected by immunohistochemisty and nuclear expression quantified. Double staining was performed colocalise 8-OHdG with markers for astrocytes (GFAP), microglia (CD68) and oligodendrocytes (oligodendrocyte specific protein, respectively. Expression of Malonaldehyde (MDA) (marker of lipid peroxidation), gamma histone H2AX (ɣH2AX) and DNA dependent protein kinase (DNA-PK) (markers of DNA damage response) were quantified by Western Blotting βgalactosidase and P16 were used to detect cell senescence. QPCR array was carried out using whole tissue RNA extracts to measure differences in expression of key senescence and DNA damage genes. Results: Both WML ($p=0.007$) and lesional control WM ($p=0.011$) showed significantly more 8-OHdG immunoreactive cells than control WM, whilst WML and lesional controls did not differ ($p=0.526$). MDA, ɣH2AX and DNA-PK quantification did not differ between the three groups. Key genes involved in DNA damage and senescence pathways were highly expressed in CL tissue. Conclusion: Oxidised DNA is up regulated in ageing WM in different levels and may contribute to pathogenesis of WML. The similarity in the level of oxidative DNA damage in lesional control WM and WML suggests that oxidative damage is widespread in WM in cases with lesions suggested that WML are associated with general WM damage. DNA damage potentially activates cellular senescence as well as apoptotic pathways, particularly in astrocytes, inaged WM and WML.

Abstract No. 473: The effect of rifampicin on pure and mixed intestinal bacterial biofilms formed by sulphate reducing bacteria and Escherichia coli developed in vitro

Samia Alkhalil, Dr.Vitaly Zinkevich, Dr. James Brown
Portsmouth University
samia.alkhalil@myport.ac.uk

There is increasing evidence that bacteria inhabiting the mucosal surfaces of the human colon play a role in the development of inflammatory bowel disease (IBD). Ulcerative colitis (UC) is one of the two major forms of IBD characterised by inflammation on the mucosa layer of the colon and the rectum. The aetiology of UC is still unknown. However, environmental, genetic and immunological factors appear to play a role in the pathogenesis of this disease. It was observed that the inflammation occurred in the parts of intestine which have a high concentration of bacteria. The ability of these bacteria to form biofilms increases their chance of survival at high concentrations of antibiotics. In this study The growth of planktonic and biofilm cultures of sulphate reducing bacteria (SRB) and Escherichia coli (E. coli) as pure and mixed culture was assessed at different concentration of rifampicin to

determine the Minimum Inhibitory Concentration (MIC) . Biofilms formed by SRB and E. coli were developed on glass coupons and were analysed using confocal microscopy. The MIC for pure cultures was 45µg/ml and 50µg/ml for E. coli and SRB respectively while for mixed cultures of SRB and E. coli was 100µg/ml. This data suggests that mixed cultures of SRB and E. coli have a two times higher resistance to rifampicin compared to the pure cultures.

Abstract No. 476: Role of Farnesoid X Receptor in Regulation of Metastatic Breast Cancer

Noura Alasmael, Dr Lisiane Meira, Dr. Karen Swales, Dr. Nick Plant
Faculty of Health and Medical Sciences, University of Surrey, UK
n.alasmael@surrey.ac.uk

Advanced Breast cancer is a primary cause of mortality in women and it is correlated to poor prognosis. Therefore understanding the molecular mechanisms of invasive cancers is fundamental for the discovery of new generation of treatments. Degradation of extracellualr matrix is required for the malignancies to invade and migrate to distant organs, and that occurs by specific endopeptidases which are called Matrix metalloproteinases (MMPs) with high expression of MMP-2 and -9 in metastatic breast cancer In particular. MMP activity is tightly regulated by the tissue inhibitors of metalloproteinases (TIMPs). Researchers have shown that the nuclear receptor Farnesoid X-receptor (FXR) is involved in regulation of MMP and TIMP activity in hepatic and vascular tissues. The rationale of the current study was to investigate whether FXR is a novel regulator of MMP-2 and -9 as it is highly expressed in metastatic breast cancer. Initially the viability of the breast cancer cell lines MCF7 (Estrogen receptor positive) and MDA-MB-468 (The triple negative) was measured after exposure to the FXR agonists chenodeoxycholic acid (CDCA) and 3-[2-[2-Chloro-4-[[3-(2,6-dichlorophenyl)-5-(1-methylethyl)-4isoxazolyl]methoxy]phenyl]ethenyl]benzoic acid (GW4064). Our findings showed that FXR ligands caused cell death and the effects were more significant in the triple negative cells. Protein and mRNA levels of MMP-2 and -9 within both cell lines did not change after FXR activation, when measured by Western blotting and real time PCR. Furthermore the migratory response and the effect on activity of MMP for FXR ligands are being investigated. Our finding suggests that FXR activation is not pro-metastatic, but can kill tumor cells, so it might be a novel therapeutic target for metastatic breast cancer.

Keywords: Breast Cancer, FXR, MMP, TIMP, Migration, Metastasis, GW4064.

Abstract No. 498: Identifying a Novel Virulence Factor Associated with Yersinia Enterocolitica Biotype 1A Strains

Alya Redhwan and Alan McNally
Pathogen Research group, Nottingham Trent University,UK
Alyaredhwan@gmail.com

Background: Yersinia enterocolitica, is a gram negative enteropathogenic bacterium. The species causes concern to the food industry due to its ubiquity in the environment and in animal reservoirs. Infection with Y.enterocolitica is heavily associated with consumption of undercooked and contaminated porcine products. The diverse genus consists of six different biotypes 1A, 1B, 2, 3, 4 and 5, which also group to non, low and high pathogenicity. Apart from the well-characterised Y. enterocolitica YSC and YSA Type III secretion systems (TTSSs), next generation sequencing project has allowed the discovery of YGT a novel TTSS.Objectives: Analyse YGT across Y. enterocolitica biotype strains and study the gene expression of some of YGT genes to identify the conditions that trigger the expression of this island. Methods: Conserved regions were identified and analysed using Artemis Comparison Tool (ACT) and Artemis tool. Potential YGT components were identified using a Basic Local Alignment Tool (BLAST). GoScript reverse transcription system was used in studying the gene expression of possible YGT apparatus and effector genes, growing in various laboratory conditions. Conclusion: Bioinformatics analysis allows the identification of several novel homologues between YGT and SPI-2 TTSS associated proteins. YGT is present in both the non-and the low pathogenic strains and interestingly has been lost in the highly pathogenic biotype strain. YGT is expressed in a non-pathogenic Y.enterocoltica group strain and might possibly be a novel virulence factor to this group of bacteria. Additionally, the study provides the evidence of the presence of some ancestral YGT elements distributed across Yersinia genus. Gene expression study of YGT shows that YGT is induced in minimal media, which may indicate the possible role that YGT may play in terms of survival the bacteria within macrophage during infection.

Abstract No. 534: Stickiness of Contemporary Dental Resin-Composite Pastes

Khold Alahdal
School of Dentistry, University of Manchester, UK
dent_84_k@hotmail.com

Objectives: This work aimed to evaluate the stickiness of resin-composites and to evaluate the influence of the filler loading, resin matrix type and the use of a Speedmixer upon their stickiness, in terms of maximum probe separation-force (Fmax). Materials and methods: Seven commercial resin-composites were selected. To illustrate four of them were presented. Each material was placed in a cylindrical mould (φ=8, depth=4 mm). The Fmax was measured by using a texture analyzer to register force/displacement. First, the resin-composite was hand mixed, and then it was placed in the Speedmixer at1500-RPM for 30sec. The material later was divided into 6 portions of about0.7-g/specimen. The flat-ended stainless-steel probe (φ=5 mm) was mechanically lowered into the surface of the unset specimen 'bonding' phase at speed of 0.10 mm/s for stickiness. The probe descended further, into the sample surface layer, which was held constant for 1s. Then the probe was moved vertically upward at a predetermined constant velocity of 3-mm/s 'debonding' phase. As the specimen material adhered to the probe, it become elongated and exerted a tensile force on the transducer, the magnitude of the force as well as elongation depends on the viscoelastic properties of the material. The same methodology was done to measure the stickiness but without using the Speedmixer. Data were entered into statistical software and SigmaPlot.

Results: Multivariate ANOVA showed that there were no statistical significant differences in Fmax between the materials without the use of Speedmixer. Whereas Fmax of Empress Direct was the higher than the rest of the materials ($p<0.05$) with the use of Speedmixer. Conclusion: The use of the Speedmixer has a strong effect on the stickiness of the material.

Keywords: Stickiness; Dental composites; Speedmixer.

Abstract No.537: A Novel Role of Highly Oligomerised Properdin in Triggering Platelet Activation as Well as Thrombospondin1 in Vitro

Ameen S. S. Alwashmi[1,2], Youssif M. Ali[1,3], Nicholas J. Lynch[1] and Wilhelm J. Schwaeble[1]

[1] Infection, Immunity and Inflammation department, University of Leicester, UK
[2] College of Applied Medical Science, Qassim University, KSA
Faculty of pharmacy, Mansoura University, Egypt

My study investigates a novel link between haemostasis and the complement system by identifying Properdin function in triggering platelet activation. This link connects two essential biological activities required to limit the damage following blood vessel injury, i.e. the prevention of blood loss and the protection from infection in process of inflammation. Properdin, is a positive regulatory protein in the alternative pathway of complement system, is nearly entirely composed of Thrombospondin-repeat-motifs (TSRs) that are first described in Thrombospondin 1 (TSP1). TSP1 plays in haemostasis/thrombosis by triggering platelet activation that leads to aggregation at sites of vessel injuries. Properdin and TSP1 were obtained as recombinant proteins from eukaryotic system; CHO-K1 and HEK293 cell line, respectively. By using chromatography tech, TSP1 and Properdin were purified from harvested cell media using HisGarvity Trap column and Heparin Sepharose 6 Fast, respectively. TSP1 and Properdin function in platelet activation was monitored using established based assay of an Enzyme Linked Immune Sorbent Assay (ELISA) that able to evaluate binding activity and receptor expression levels on platelet. Washing human platelets were obtained from citrated whole blood of healthy volunteers (ethically approved). Platelets activation was achieved within 10 minutes in 37°C incubation with final concentration of 15ug/ml of adding either TSP1 or Properdin. Light microscope clearly visualises stained platelet clumps that triggered by Properdin. TSP1 and Properdin binding on intact washed platelet was significantly observed. In addition, the binding of Properdin to platelet receptors was determined using CD41 and CD42. Moreover, P-selectin (CD62P) expression levels on activated platelet by TSP1 and Properdin were monitored by representing significant levels. Our results clearly show that not only TSP1 but also the highly oligomerised Properdin which is able to trigger platelet activation. These results imply that Properdin may represent another physiological relevant role as linker between complement and the haemostasis system.

Keywords: Thrombospondin 1, Properdin, Platelet activation, Platelet aggregation.

Abstract No. 542: Effect of Genetic and Pharmacological Intervention of RANK Receptor on the Development and Progression of Cancer Associated Bone Disease

Asim Khogeer
University of Edinburgh
S1060082@sms.ed.ac.uk

Receptor activator of NF-kappa-B (RANK) and its ligand (RANKL) are members of the TNF receptor super family mediate an essential signal for the development of lactating mammary gland and the proliferation of mammary epithelial cells. In the skeleton, RANK is mainly expressed on the surface of osteoclasts and their precursors. RANK and RANKL are also known to play a vital role in osteolytic bone destruction, a common cause of morbidity in patients suffering from lung, breast and prostate cancer. Studies have shown that bone metastasis of cancer cells that express the RANK receptor can be reduced by blockage of the RANK receptor thereby demonstrating the importance of this system in tumourigenesis and bone specific metastatic behavior of cancer cells. Moreover, pharmacological neutralisation of RANKL using anti-RANKL decoy receptors and neutralising anti-bodies such as osteoprotegerin (OPG) and denosumab - inhibits osteoclastic bone resorption and prevents osteolytic bone destruction in animal models of cancer. Altogether these studies clearly indicate that agents that target RANK/RANKL system exhibit anti-resorptive and anti-metastatic properties, and therefore this system can be explored in the treatment of patients with cancer. However, the exact role of RANK receptors in the pathogenesis of bone metastasesis yet not fully understood. The aim of this project is to investigate the role of RANK receptors in the pathogenesis of bone metastases associated with cancer, in particular fibrosarcoma and osteosarcoma. This aim will be achieved using a mouse model, which have been genetically modified to carry a mutation in the RANK gene (RANK 75dup27) causing localised increase in bone turnover. Furthermore, epigenetic, genetic and molecular biology approaches will be used to investigate the possibility that genetic modulation of RANK could directly influence tumour growth, migration and invasion; or indirectly disrupt tumour - bone cell crosstalk in the bone micro-environment in vitro and in vivo.

Abstract No. 554: Factors Influencing Expression of Human Endogenous Retroviruses in leukaemia

Alqahtani S, Oliver AW, He X, Batman G, Hampson L, Hampson IN.
Manchester University
abuayed259@hotmail.com

Background: Human endogenous retrovirus (HERVs) like sequences represent approximately 8% of the human genome and elevated expression of HERV gene products has been observed in some leukaemias and multiple sclerosis (MS). In light of these observations, there is considerable interest in environmental factors which influence HERV expression. Cadmium (Cd), a widespread environmental pollutant, is a proven human carcinogen and high levels of have been found associated with some cases of acute leukaemia and MS. Silver nanoparticles (AgNPs) find their way into the environment as sterilizing agents for antimicrobial treatment and significantly AgNPs can also impair neuronal function and effect brain pathology. In view of these similarities, it was decided to investigate the effects of Cd and AgNPs on expression of HERVs. Methods: The Jurkat E6.1, MOLT-4, K562, OC-AML, CCRF-CEM and FA-AML1 leukaemia cell lines were obtained from an American-type culture collection (ATCC). Cell viability was determined by AQ-96 colorimetric proliferation assays. HERV-W env expression was analysed by reverse transcription-polymerase chain reaction (RT-PCR) and Western immuneblotting (W.B). Results: Constitutive expression of

HERVW env was found in (Jurkat, CCRF-CEM, K562 and OC-AML5) cell lines. Both AgNPs and CdCl2 induced expression of HERV-W env mRNA in both FA-AML and MOLT4 leukaemic cell lines. Expression of HERV-W env was not associated with acute toxicity in MOLT4 cells treated with either Cd or AgNPs. Conclusions: Environmental exposure to either Cd salts or AgNPs have been causally related to some leukaemias and MS which are both characterised by high levels of HERV-W env expression. Our results are the first to show that CdCl2 and AgNPs induce HERW-W env expression in selected leukaemic cell lines although these clearly showed differential toxicity. HERV-W env protein has been implicated as playing a role in cell fusion which has important implications for many biological processes including carcinogenesis.

Keywords: HERV, cdcl2, AgNPs, Leukeamia.

Abstract No. 562: The Role of Corticosteroid Therapy on RS2279574 of DUSP6 in Asthmatic Patients in Susceptibility to Bipolar Disorder: A Suggested Study for Further Experiment

Leenah AL-Shobeili
MSc Medical Genetics
The University of Glasgow

Bipolar disorder (BPD) is a psychiatric disorder that is characterized by manic and depressive episodes. The age of onset varies between the ages of adolescence to that of the early twenties. Worldwide, the occurrence is around 1/100 equally in both genders. There is no effective cure or therapy for BPD as it related to the more complex disorders that are caused by several genes that are involved in several pathways leading to BPD. A previous cross- sectional study of Liang and Chikritzhs (2013) was conducted on asthma patients, who were treated with corticosteroids and have developed BPD symptoms. DUSP6 is located on 12q21-q22. Several studies found that DUSP6 is associated with BPD. This gene is responsible to regulate ERK pathway during inflammation. Corticosteroid pathway ends to inhibit ERK, which is important in CNS signalling pathway. This proposed experiment aims to examine the relationship of corticosteroid therapy and BPD symptoms on asthma patients. The TaqMan SNP genotyping method is applied to identify the specific allele of rs2279574 in DUSP6. As the rs2279574 T/G variation is a functional missense mutation that is associated with a reduced gene expression in BPD patients. Results will be validated and analyzed by sequencer and an SDS software program. Allelic frequency is then calculated to determine the effects of the corticosteroids on the T/G allelic variation. Other genes have been suggested, as susceptible for BPD and might be involved in the corticosteroid therapeutic pathway. The SNP array is an effective approach to analyze variations in the human genome, however, as a further experiment as it would prove to be expensive compared to the TaqMan SNP assay. Hopefully, this proposed study could help to make a potential change and also add informative knowledge to the understanding of BPD.

Abstract No. 565: Investigating the Effects of Cigarette Smoke on Immunoglobulin Class Expression in the Oral Cavity and Systemically

Nesrin Tarbiah, Lucy Fairclough, Paddy Tighe, Ian Todd.
Department of immunology, University of Nottingham, UK
biochemist_nosa@yahoo.com

Cigarette smoke has many damaging effects on the body. These include inflammatory damage to the lungs, which can lead to the development of chronic obstructive pulmonary disease (COPD). Chronic obstructive pulmonary disease can be defined as the permanent damage the airways of the lung. It is estimated that it affects approximately three millions people in UK. Although not all smokers are susceptible to COPD, it is predominately caused by smoking. The immunological effects of cigarette smoke are being investigated and provide essential insight into mechanisms of smoking related disease. The aim of this study is to determine whether the levels of immunoglobulin (Ig) isotypes are different in the serum and saliva specimens of non-smoking individuals and smoking individuals (with or without COPD). Examination of serum and saliva will provide information on the effects of cigarette smoke systemically and in the upper respiratory tract, respectively. In order to determine Ig isotype levels, enzyme-linked immunosorbant assays (ELISAS) have been established and calibrated for determining sample concentrations of IgM, IgG, IgA and IgD. If cigarette smoke is found to influence the serum and salivary levels of Ig isotypes, then the mechanisms underlying these effects will be investigated.

Abstract No. 570: Investigating the Effects of cigarette smoke on immunoglobulin class expression in the oral cavity and systemically

Nesrin Tarbiah, Lucy Fairclough, Paddy Tighe, Ian Todd.
MBTI Research group, Department of immunology, University of Nottingham, UK
biochemist_nosa@yahoo.com

Cigarette smoke has many damaging effects on the body. These include inflammatory damage to the lungs, which can lead to the development of chronic obstructive pulmonary disease (COPD). Chronic obstructive pulmonary disease can be defined as the permanent damage the airways of the lung. It is estimated that it affects approximately three millions people in UK. Although not all smokers are susceptible to COPD, it is predominately caused by smoking. The immunological effects of cigarette smoke are being investigated and provide essential insight into mechanisms of smoking related disease. The aim of this study is to determine whether the levels of immunoglobulin (Ig) isotypes are different in the serum and saliva specimens of non-smoking individuals and smoking individuals (with or without COPD). Examination of serum and saliva will provide information on the effects of cigarette smoke systemically and in the upper respiratory tract, respectively. In order to determine Ig isotype levels, enzyme-linked immunosorbant assays (ELISAS) have been established and calibrated for determining sample concentrations of IgM, IgG, IgA and IgD. If cigarette smoke is found to influence the serum and salivary levels of Ig isotypes, then the mechanisms underlying these effects will be investigated.

Abstract No. 602: Bacteriophage Coated Microcrystals: A New Bioprocessing Method

Munerah Mohammed Alfadhel
University of Strathclyde, Glasgow, UK
alfadhel_m@hotmail.com

Background: Bacteriophage may provide alternative therapies for antibiotic resistant bacterial infection. We present a new approach for bacteriophage bioprocessing through co-precipitation of an aqueous mixture of phage and carrier in excess organic solvent. The approach draws from the process of generating protein coated microcrystals (PCMCs). Purpose: To investigate the utility of rapid co-precipitation, immobilization and drying of phage onto amino acid carriers. Methods: Carrier (glutamine or glycine) and stabilizers (trehalose or albumin) were dissolved in aqueous phage stock solution. This solution was added drop-wise to excess organic solvent (isopropanol or isobutanol) while stirring.The immediately formed phage-coated microcrystals (phage-CMC) were harvested by vacuum filtration. Powders were dried at constant temperature and relative humidity until constant weight. The lytic activity of the phage was examined by plaque assay and powder morphology imaged by scanning electron microscopy (SEM). Residual water content was determined by Karl Fisher titration (KF). Results: The activity of the phage powders was found to depend on the type of amino acid carrier, the presence or absence of stabilizer, the organic solvent and the storage conditions. The stability of the immobilized phage decreased over time while storing the powders at room temperature or at 5 °C. Nevertheless, the lytic activity of the phage-CMC following one month storage at room temperature was comparable to doses of phage reported in the literature regarding therapeutic application in man. A relatively high residual water content was found and shown to arise from the hygroscopic nature of the phage. SEM micrographs showed that the phage-CMC morphology was dependent on the amino acid carrier. Conclusion: These results demonstrate a feasible and novel approach for the storage and transport of phage in the solid state. The method would also allow rapid concentration of phage from dilute solutions.

Abstract No. 625: Metabolism Flexibility of Embryonic Stem Cells Grown in Microgravity Environment

S. Alsobaie*, S. Mantlaris, T. Cass
Department of Chemistry, Imperial College London, UK
s.alsobaie09@imperial.ac.uk

The embryonic stem cells have two hallmarks characters, the ability to reproduce self-renewal and generate other cell lineages. Despite the excessive advance in stem cell research, their clinical applications delay owing lack of optimal culture condition in vitro. Therefore, tissue engineering intervention has introduced to overcome number of tissue culture obstacles such as automating cell culture using both bioreactor and sculpting 3D scaffolds, thus to establish ex-vivo bioprocessing system. Our work focused on the consequence of growing embryonic stem cells in alginate as substrate, and microgravity bioreactor using proteomics, transcriptomics and metabolomics approach. There was continuous alteration in cell metabolism and more in –depth mitochondrial activity. This flexibility in metabolism enable shift from anaerobic to oxidative phosphorylation in response to cell activity demands. This phenomenon suggested that cells in 3D-microgravity gained robust ability enable the cells to control the cell faith and energy consumption despite availability of metabolites. Respectively, the ES cells sustain self-renewal and scale-up their production for up to 100 thousands cells per alginate. Therefore, the system we used proposes an alternative to conventional 2D culture and provides elastic cells resemble the in vivo environment.

Abstract No. 630: Comparison of Proton Therapy Treatment Planning Systems

Jailan Alshaikhi
Medical Physics & Bioengineering Department, UCL
Radiotherapy Physics Department, UCL – Hospital

Abstract Text: Purpose/Objective: Compared to photon beams, the protons deposit most of their energies at the end of their track. With the potential improvement of dose conformity of protons, the number of new proton centres is increasing rapidly. An important decision that physicists and physicians are required to choose the best available proton treatment planning system (TPS). It is necessary to evaluate the various (TPSs) that are available for proton treatment planning. The purpose is to evaluate accuracy of dose calculation, planning tools, user friendliness and speed for different available TPS. Materials and Methods: A meningioma case was planned on four treatment-planning systems (Eclipse, Pinnacle, Xio & Ray-station). Two plans were made with each of the four TPS for the case, a 2-beam Intensity Modulated Proton Therapy Plan (IMPT) and a 3-beam IMPT plan. An additional two-arc Volumetric Modulated Arc Therapy photon plan with 6MV energy was planned with Eclipse® TPS. All 9 plans were subject to identical dose constraints, both for the target coverage and organ at risk (OAR). Results: All TPSs were within clinical tolerances, however their algorithms differ and so there were slight differences in the calculated results for the target and OAR. The dose volume histogram of the Planning Target Volume for the 9 different plans, namely a VMAT- photon and IMPT plans with two and three beams, repeated using the 4 systems. The IMPT plans show a more homogenous dose to the target relative to the photon plan. In addition, the Ray-Station TPS has more homogenous dose compared to the others. Summery/Conclusions: All systems produce dose within clinically-accepted tolerances, however the differences in algorithms lead to dose differences. Perhaps the planning tools can improve the output as well. RayStation contains more planning tools compared to other systems.

Abstract No. 632: Validity and Sensitivity of 2MHz and 4MHz Pulsed Wave for Detecting Emboli in Carotid Phantom

Ali Aldhebaib
Imperial college

Stroke remains a serious medical condition resulting in significant mortality and disability. Early detection using ultrasound technology is a way forward to prevent potential strokes. It has been known that ultrasound transducer of a single crystal with a frequency of around 2 MHz used for embolus detection in the Meddle Cerebral Artery (MCA) , but no specific transducer have been validated for embolus detection in Common Carotid Artery(CCA) yet. Our study aims to use carotid phantom to report the sensitivity and specificity of embolus detection of 2 MHz, and 4 MHz PW probes in continuous monitoring of the common carotid artery. Our results show validity and high sensitivity of 2MHz and 4MHz pulsed Doppler transducers to detect solid embolic particles up to the size of 200μm in a phantom of the common carotid artery. 2MHz probe was more sensitive in detection of 200μm particles and a symmetric to MCA probe monitoring. Simultaneous monitoring of MCA and CCA with the use of Doppler ultrasound with 2MHz probe has a potential value to identify the active embolic signal source in patients with acute stroke. The monitoring may help to prevent or predict futures acute stroke events thereby preventing potentially life threatening medical condition.

Abstract No. 635: Inhibition of Pseudomonas Biofilms in Vitro by Tobramycin Derivatives, DNase and Charged Anti-Inflammatory Drugs

H.S. Alkhowaiter, Dr. Janis Shute
Corresponding author: up501180@myport.ac.uk
School of Pharmacy and Biomedical, University of Portsmouth

Chronic obstructive pulmonary disease (COPD) is characterised by obstructed airflow. It is aggravated by intermittent episodes of infection, typically with Pseudomonas species, which form biofilms either spontaneously or in response to treatment antibiotics, commonly the aminoglycoside Tobramycin. A Copper-Tobramycin occurs spontaneously but can be directly engineered and may have a DNase-like activity; important as free DNA is a key ingredient of biofilm matrix. Drug penetration is a problem with biofilms: negatively charged anti-inflammatory drugs also used in COPD might enhance aminoglycoside uptake by biofilms. The objectives of this study were to assess whether DNA hydrolysis can affect in vitro Pseudomonas biofilm growth and whether combined antibiotic and cationic anti-inflammatory drug treatments might prove synergistic. Pseudomonas aeruginosa biofilms were grown and treated in 96-well plates, a model of biofilm dynamics with good intra-experimental replication. Treatment with DNase, Tobramycin or its Copper Tobramycin derivative was followed by aspiration of supernatants and measurement of the adherent biomass using a micro plate reader set to read absorption at 550nm. In some experiments supernatants containing planktonic bacteria were also examined. Results showed DNase to have a limited affect on biofilm establishment and growth. Tobramycin and Copper-Tobramycin both inhibit biofilm growth. Timing relative to biofilm establishment influenced the extent of inhibition. Heparin but not Chondroitin sulphate-B showed limited synergy with Copper-Tobramycin. The findings indicate a complex relationship between antibiotics, DNA and DNase of bacterial origin and electrostatically charged elements in and around the biofilm, which might be exploited for therapeutic ends in COPD.

Keywords: COPD, Pseudomonas aeruginosa, Tobramycin, Copper Tobramycin, DNase I.

Abstract No. 637: The Oncogenic Role of Ribonucleeotide Reductase M2 (RRM2) in Clear Cell Renal Cell Carcinoma

Manal Abudawood, Qiuyu Wang, Nessar Ahmed
Manchester Metropolitan University, School of Healthcare Sience Department of Cell and Molecular Biology, UK
abudawood_m@hotmail.com

Clear cell renal cell carcinoma (ccRCC) is the most common type of adult kidney tumour accounting for 75% of renal cell neoplasms. Our preliminary studies using Affymetrix® gene microarray analyses showed that RRM2 was up-regulated in ccRCC human tissues compared to normal human kidney tissues. Systemically delivered small interfering RNA (siRNA) therapies for cancer have been applied in clinical trials. Therefore, the aim of this study is to investigate the effects of siRNA-mediated gene knockdown of RRM2, a potential oncogene which encodes a rate-limiting enzyme in DNA replication, in ccRCC in vitro. Down-regulation of RRM2 was performed in human ccRCC cell lines (Caki-2, RCC-KP and Caki-1) using pre-designed RRM2 siRNA. Knockdown of RRM2 was directly confirmed by real time qRT-PCR and Western blotting analyses. Cell proliferation and viability after RRM2 knockdown were assessed by trypan blue exclusion assay. In vitro scratch and Trans-well invasion assays were done to investigate the effect of RRM2 down-regulation on ccRCC cell migration and invasion. Cell apoptosis after RRM2 knockdown was evaluated by Caspase 3/7

activity assay. A significant RRM2 gene knockdown was observed by qRT-PCR and Western blotting. SiRNA mediated knockdown of the RRM2 gene resulted in a reduction in cell proliferation without a concurrent reduction in cell viability. Down-regulation of RRM2 had significant effect on reduction of cell invasion of Caki-2 and RCC-KP but not Caki-1 cell line cells. In vitro scratch and Trans-well migration assays showed a significant decrease in ccRCC cell migration after RRM2 down-regulation. Staurosporine-induced cell apoptosis was markedly increased in all human ccRCC cell lines by RRM2 silencing. Down-regulation of RRM2 inhibits cell proliferation, migration, invasion and increase cell apoptosis of ccRCC cells. It indicates that overexpression of RRM2 may be associated with ccRCC progression; thus suppressing its function might be useful as a potential therapeutic strategy in ccRCC.

Abstract No. 639: Identification and Characterisation of CD8+T Cell Responses to HHV6B Antegens U11 and U90

Mustafa Halawi[1, 3], Naeem Khan[2] and Neil Blake[1]
[1] Institute of Infection and Global Health, University of Liverpool, UK.
[2] Clinical Immunology, School of Immunity and Infection, University of Birmingham, UK.
[3] Jazan University, Jizan, Saudi Arabia.
halawi1111@gmail.com

Objective: Human herpes virus 6 (HHV6) infects the majority of individuals in childhood, followed by a lifelong asymptomatic latent infection. Reactivation of HHV6 is a significant problem in immunosuppressed individuals. Studies of the immune response to HHV6 are in their infancy. Our aims were to characterise the T cell response to HHV6 in healthy donors. Methods: We focused on four HHV6B antigens U11, U39, U54 and U90, predicted to be immunogenic based on their HCMV homologues. Whole antigen peptide mixes were used to stimulate PBMC. T cell responses were analysed after overnight stimulation by intracellular cytokine staining (ICS) or after 12 days of culture using IFN-γ Elispot. Peptide libraries were used to map minimum CD8+ restricted epitopes. Further characterisation of HHV6B-specific T cells was carried out by identification of HLA restricting elements and cytokine profile. Results: Using overnight stimulation and ICS, extremely weak CD8+ and CD4+ T cell responses were detected against U11, U39, U54, and U90 in 30 healthy donors. Using a short-term in-vitro reactivation protocol followed by IFN-γ Elispot, significant peptide-specific responses we observed to all four antigens in all 25 donors tested. Overall 19, 18, 22, and 21 donors responded to U11, U39, U54 and U90 respectively. We focused on the responses against U11 and U90 and are in the process of characterising CD8+ T cell epitopes within these antigens. Conclusions: HHV6B T cell responses are detectable in healthy donors. Further characterisation of these responses will prove useful for development of T-cell mediated immunotherapy of HHV6-assiocated disease.

Abstract No. 646: Transcriptome landscape of Cetuximab-Resistant Triple Negative Breast Cancer Cells Revealed Deregulation of TGF-Beta Pathway

Ashwag Albukhari[1, 2, 3], Hani Choudhry[1, 2, 3], Syed Haider[1, 4], Francesca Buffa[4], Ioannis Ragoussis[3] and Anthony Kong[1]

[1] Weatherall Institute of Molecular Medicine, University of Oxford, Oxford, UK
[2] Faculty of Science, King Abdulaziz University, Jeddah, Saudi Arabia
[3] Wellcome Trust Centre for Human Genetics, University of Oxford, Oxford, UK
[4] Department of Oncology, University of Oxford, Oxford, UK
ashwag.albukhari@oncology.ox.ac.uk

Triple negative breast cancer (TNBC) is a sub-molecular type of breast cancer that is defined by the absence of oestrogen receptor (ER), progesterone receptor (PR) and HER2 amplification. Epidermal growth factor receptor (EGFR) is a member of ErbB family receptors that is overexpressed in TNBC patients. Despite their initial response to EGFR-targeted therapies, TNBC patients develop acquired resistance and the mechanisms underlying their resistance are poorly understood. In this study, we aimed to investigate the mechanisms of resistance to cetuximab, an EGFR monoclonal antibody, in TNBC by developing a model of acquired cetuximab-resistant TNBC cell line. Among a panel of TNBC cell lines, we found MDA-MB-468 cells are highly sensitive to cetuximab-treatment. Therefore, we developed a cetuximab-resistant cell line, named MDA-MB-468RC, derived from the naïve MDA-MB-468 cells. The cellular phenotype and morphology of developed cell line were evaluated. Using next generation RNA-sequencing approach, the transcriptome landscape of both MDA-MB-468CR and MDA-MB-468 TNBC cells were compared. Differentially expressed genes in MDA-MB-468CR cells were clustered into several key regulatory pathways such as TGF-beta/BMPR pathway. Among the deregulated pathways, we found an increase in the expression of TGF-beta/BMP receptors. This up-regulation of TGF-beta/BMP receptors was correlated with the increase in SMADs phosphorylation, biomarkers of TGF-beta signalling pathways. Moreover, blocking of either TGF-beta or BMP receptors using small molecule inhibitors inhibited SMADs phosphorylation. In addition, treatment of these resistant cells with BMPR inhibitor significantly reduced their cellular viability. Our finding highlighted the key changes in the transcriptome of acquired cetuximab-resistant TNBC model and revealed a deregulation of multiple pathways that might be involved in the resistance mechanisms. Additionally, targeting both EGFR and TGF-beta could overcome cetuximab-resistance and can be used as new approach for triple negative breast cancer treatment.

Abstract No. 651: Bioinformatic Analysis of the Moonlighting Sites in the Chaperonin 60 Protein

Osilan, R[1]. Martin ,A[2]. and Henderson, B[1].
[1]UCL Microbial disease, Eastman dental institute, University College London
[2]Stuctural & Molecular Biology, Darwin Building, University College London, London
raha.osailan@yahoo.co.uk

Introduction: Chaperonin 60 (Cpn60), is a major molecular chaperone, also known as the heat shock protein, Hsp60. This protein has the ability to act as a mitochondrial and bacterial cytoplasmic chaperone. It has other biological actions within cells and, when it is secreted into the extracellular milieu and therefore has 'moonlighting' activities. Moonlighting sites are parts of the protein that can act more than one unique activity. Aim: To analyse the moonlighting sites using bioinformatics analysis and look at the evolutionary relation of these moonlighting sites to analyse their functions. Methods: Protein data bank (PDB), FASTA format and Functional Orthologues from SwissProt Text Analysis (FOSTA) were used as Bioinformatics analyses of Cpn 60 moonlighting sites to show sequence identity and similarity of this protein. In addition, MEGA.5 software was used to generate phylogenetic trees to represent the evolution of these moonlighting sites. Results: There was100% sequence identity between most of the sites and they were sharing the same common ancestor, this may suggest that they have the same functions. Discussion and conclusion: This information will be useful in studying the evolutionary history of these moonlighting sites and their connection to disease.

Keywords: Chaperone 60, moonlighting sites, phylogenetic tree.

Abstract No. 653: Mechanisms Associated with MRSA and Acanthamoeba interactions and Application of photodynamic Thearapy for their Eradication

Saleh Alghamdi
Essex University, Biological sciense
microbiologist1@hotmail.com

Methicillin sensitive Staphylococcus aureus (MSSA) is an important human pathogen, which causes both nosocomial and community-acquired infections. Application of multiple antibiotics led to the emergence of MRSA. Treatment is difficult due to resistance to many antibiotics. Acanthamoeba is a free-living protozoan widely distributed in environment. Acanthamoeba has two stages in its life cycle, a trophozoite stage and a cyst stage. In this study, Acanthamoeba castellanii (a keratitis isolate belonging to the T4 genotype) was used and its interactions with MRSA and MSSA and their treatment were studied. MRSA exhibited less association with Acanthamoeba and macrophages than MSSA and MRSA exhibited reduced invasion of Acanthamoeba and macrophage than MSSA. In addition, we exhibited that phosphatidylinositol 3Kinase (PI3K) and tyrosin phosphetase decrease the MRSA and MSSA's invasion to Acanthamoeba. Due to the difficulty in treating Acanthamoeba and MRSA infection, photodynamic therapy (PDT) was used. It was found that the drug Bactireochlorin and photosensitizing agent was able to kill Acanthamoeba, MRSA and MSSA.

Abstract No. 654: Expression of the B cell differentiation factor BAFF and chemokine CXCL13 in a murine model of Human Respiratory Syncytial Virus infection

Al Turaiki W[1], McFarlane A[2], Fitch P[2], Slupsky JR[3], McNamara PS[1], Schwarze J[2] and Flanagan BF[1].

[1]Department of Women's and Children's Health, Institute of Translational Medicine, University of Liverpool, UK

[2] Medical Research Institute, University of Edinburgh, UK

[3]Molecular and Clinical Cancer Medicine, University of Liverpool, Liverpool, UK

BACKGROUND: production of antibody in the lungs is an essential defense mechanism against respiratory pathogens. However, little is known about the mechanisms of local B cell activation in airway mucosa. Previously, we have demonstrated expression of the B cell differentiation factor, BAFF in human RSV infection (McNamara et al 2013 Thorax).AMIS; to better understand this process we examined BAFF expression in a murine model of RSV infection and measured expression of the chemokines CXCL13, CCl19 and CCl21 which could influence lymphocyte recruitment. METHODS: We measured BAFF, CXCL13, CCL19 and CCL21 expression in homogenised lung tissue from control mice at day 0 and mice challenged with RSV (A2 strain) or control UV-treated RSV at days 1,2,4 or 7 post infection (n=3) by ELISA. Cytokine mRNA and RSV N gene expression were measured by Taqman PCR. RESULTS: BAFF was elevated significantly post RSV infection at day1 (mean1092pg/ml, P=0.07), day2 (1157pg/ml, P=0.01) and day 7(2941 pg/ml, P=0.0001) in comparison to UV treated RSV control on day1 (421pg/ml), day2 (370 pg/ml) and day7 (393pg/ml). BAFF mRNA expression was similarly increased on day 1 (fold increase 2, P=0.03) and day 7(1.7, P=0.02). CXCL13 protein was increased post RSV infection at day 1 (mean762pg/ml, P=0.01), day2 (612pg/ml, P=0.02), and day 7 (388pg/ml, P=0.007) in comparison to control day 1 (374pg/ml), day2 (278pg/ml) and day7 (249pg/ml). B cells have been detected in lung sections in day 1 and 2 post RSV infection. There was no significant expression for APRIL post RSV infection. CONCLUSION: RSV infection results in up-regulated BAFF and CXCl13 expression, consistent with a role for CXCL13 in recruiting B cells and BAFF in promoting airway B cell differentiation. However, RSV infection were not significantly up regulated expression of CCL19 and CCL21 . Abbreviation: BAFF =B cell differentiation factor, CXCL13 =lymphoid chemokine 13 , CCL19= lymphoid chemokine 19 , CCL21 Lymphoid chemokine= 21 ,B cell= B cells lymphocyte.

Abstract No. 667: Engineering hematopoietic stem cell niches- a model for vascularization and mineralization

Eman Alfayez, Bernadine Idowu, Trevor Coward*, Lucy Di Silvio

King's College London

Introduction: Cell source is one of the major challenges in engineering tissues. We are currently exploiting CD34+ hematopoietic stem cells (HSC) based on their angiogenic potential due to their vascular origin. In this study, we examine a HSCs niche model by encapsulating cells in type I collagen to mimic in vivo 3D matrix, in order to determine whether they can be simultaneously differentiated to give rise to primitive capillary-like structures and osteogenic progenitors. Experimental method: HSCs were encapsulated in collagen matrix at a density of 5x105/ml and cultured in the presence of inducing factors for vascularization and osteogenic differentiation. The cells were cultured for 14 days in the pre-endothelial conditioned medium and then a further 16 days in osteogenic conditioned medium. Collagen gels with no stimulating factors were used as a 3D control. Fibronectine coated plates were used as 2D control. Viability of encapsulated cells was assessed. Total

DNA and alkaline phosphatase activity assays were done. Q-PCR analysis was run for VEGFA and ALP genes expression.Results: Good HSCs proliferation was observed with highest proliferation in the conditioned medium; viability was maintained for 30-day period. DNA assay indicated that HSCs' proliferation was higher in cells subjected to the endothelial-inducing medium. Also, the cells arranged themselves in cord-like structures. In addition cells expressed VEGA gene in response to the endothelial differentiation medium. Moreover, cells expressed ALP gene as a result of changing the medium from endothelial to osteogenic inducing medium. The ALP assay finding supported the real time PCR results. Conclusion: It was demonstrated that 3D collagen seeded with HSCs from umbilical cord blood, following sequential application of growth factors, was able to promote an early vasculogenic phenotype and osteogenic differentiation.

Abstract No. 668: Can Skeletal Muscle Satellite Cells be Reprogrammed to Generate other Cell Types Including; Blood Cells

Adel Ibrahim Alhamadi
Manchseter Metropolitan University, School of Healthcare Science
hamadi_adel@yahoo.com

Background: Adult stem cells, such as the skeletal muscle satellite cells (C2C12) and haemopoietic stem cells (HSC), may have the potential to divide and differentiate into a number of cell types that could subsequently be useful in regenerative medicine. In 2007, researchers were successful in artificially producing induced pluripotent stem cells (iPS) from human somatic cells. The human iPS cells showed similarities to human embryonic stem (ES) cells. The findings from human iPS cell research caused interest in the area, with the possibility of replacing human ES cells with cell therapies. Human iPS cells have more promise in regenerative medicine, because by using human iPS cells immunological rejection may be circumvented and avoid ethical issues that have been associated with the application of ES cells in regenerative medicine. Aims and Objectives: to explore the relationships between C2C12 cells and their ability to generate other cells of the body; in particular, HSCs. The objectives are to explore the ability of the C2C12 cells to be reprogrammed to produce iPS and to generate HSCs direct from C2C12 cells. Methods, Results: Two experiment designs have been developed to explore the ability of the C2C12 cells to be reprogrammed to produce iPS cells and HSCs. First experiment design is to generate iPS cells, then generate HSCs from iPS cells. C2C12 cells were treated and the iPS colonies were observed from day 16. Second experiment design is to generate HSCs direct from C2C12 cells. The haemopoietic colonies were observed from day 12. Conclusions: we have established two experiment designs to reprogram the C2C12 cells to HSCs. Both experiment designs are considered to be new, easier, faster techniques that produce clinically safer cells to use in regenerative medicine.

Keywords: stem cells, Skeletal muscle satellite cells, ES cells, iPS cells, HSCs, cell therapy, regenerative medicine.

Abstract No. 671: The application of the Renishaw Incise Dental Scanner for 3-D Bite Mark Analysis

Amal Al-Ali
The Barts and the London School of Medicine and Dentistry,
Quuen Marry University of London

Establishment of objective assessment method for bite mark analysis. This is essential to satisfy the contemporary standards from both a legal and scientific perspective. The aim of this thesis was to develop an objective, quantitative and reproducible 3-dimensional assessment methodology using coordinate metrology and a data capturing device, Incise Dental Scanner (IDS), to match and compare complex free form surfaces between teeth and bite marks. The capabilities and limitations of IDS were then investigated. Two invitro studies were undertaken: (1) a series of 6 models were reproduced from a master working model for comparison. In addition, 8 dental study models with teeth of various orientations were compared with impression of their corresponding bite mark. The resultant bite mark was registered in Polyvinylsiloxane (PVS) as the bitten substrate. (2) Comparison of study models to the pattern of bite mark that was recorded in cheese by 6 subjects. All study models were digitised at 0.1mm scanning interval with a scanning speed of 500 points per minute by IDS. The data analysis was conducted using a 3-D image analysis software package, Cloud (UCL, UK). Using the superposition method and the resultant subtracted images; quantification of the differences was obtained between the superposed models to an accuracy of +/- 20 μm. Analysis of the data acquired by the IDS enabled further analysis improving the objectivity of the method described. From the results, it can be concluded that the use of the Incise Dental Scanner provides an objective technique to study bite marks produced in dimensionally stable bitten substrates and in organic materials such as cheese. The methodology demonstrates its potential to determine from 3-D data tooth and teeth characteristics which are potentially useful in forensic science technique.

Abstract No. 672: Non-Alcoholic Fatty Liver Disease (Nafld)- Induced Ros and Lipoapoptosis Sensitises Hepatocytes to Drug Toxicity

Shareefa AlGhamdi- Nick Plant - Kate Plant
Faculty of Health and Medical Sciences, University of Surrey
s.al-ghamdi@surrey.ac.uk

Steatosis is a common feature of several liver diseases including non-alcoholic fatty liver disease and non-alcoholic steatohepatitis (NASH). Since the liver is the main organ involved in drug metabolism, significant alterations in the activity of drug-metabolizing enzymes induced by hepatic steatosis may affect the clearance of therapeutic drugs, with the potential to result in adverse drug reactions. There is also considerable data suggesting that free fatty acids (FFAs) can directly cause toxicity by inducing oxidative stress and by activation of inflammatory pathways. We hypothesized that induction of steatosis by free fatty acids may have an impact on drug-induced liver injury by sensitizing hepatocytes to its toxic effect. The cell line Huh7 was used as an in vitro model. Fat-overloading was induced using two fatty acids, palmitic acids and oleic acid. Accumulation of intracellular lipid was quantified by Nile Red based staining. To assess whether NAFLD sensitises hepatocytes to toxic effect of drugs, known hepatotoxins (doxorubicin and paracetamol) have been chosen and their toxicity was measured by MTT. To examine the effect of steatotic hepatocytes on oxidative stress, reactive oxygen species (ROS) were measured by DCF-DA. In addition caspase3/7 activity was measured as mediator of apoptosis. To date, the results have confirmed that induction of steatosis has sensitised hepatocytes to drug toxicity and significantly induced

ROS which was not found to be additive with ROS induced by drugs. FFAs were also found to provoke caspase 3/7 activity. In conclusion the hypothesized effect of steatosis on drug toxicity is correct and FFAs may alter drug toxicity through changing oxidative state of cells and activating apoptosis pathway.

Abstract No. 685: Effects of Dual (cognitive) Tasking on Free Walking in Patients with a Peripheral Vestibular Disorder

A. Sulaiman[1,2], M. Pavlou[2,3] and DE. Bamiou[1,2]
[1] Ear Institute UCL
[2] Department of Neuro-otology, National Hospital for Neurology and Neurosurgery, London
[3] Centre of Human and Aerospace Physiological Sciences, King's College London

Objective: Patients with vestibular disorders experience unsteadiness while walking, which exposes them to falls risk. Previous studies on gait assessment were conducted in laboratories, while patients report symptoms in real environments. The objective is to determine how patients with peripheral vestibular disorders navigate in outdoor environment compared to healthy subjects and to investigate the effect of adding cognitive tasks on dynamic balance. Design: 15 patients and 15 controls underwent indoor assessments including timed up & go (TUG), functional gait assessment (FGA) as single, motor and two cognitive tasks (4 conditions in total), and walking in an urban environment assessed by tri-axial accelerometers attached to head, neck and trunk. Results: TUG was significantly higher ($p=0.003$), FGA scores were significantly reduced under all testing conditions ($p<0.05$), and gait velocity in the urban environment was significantly reduced in patients compared to controls ($p<0.05$). In vestibular patients, gait velocity was reduced with dual tasking compared to single tasking. Acceleration in medio-lateral (ML), antero-posterior (AP), & vertical (V) directions were reduced. This was significant in almost all walking segments of the urban environment at the trunk level; however no significance was detected at head level in ML & AP directions. Discussion: Although reduced gait velocity in vestibular patients with the addition of dual task has been previously reported1, 2, our study is the first to find this effect in a real outdoor environment using the accelerometer device. Conclusions: Our results indicate that vestibular patients adopt a conservative gait strategy by reducing their walking speed whenever a secondary cognitive task is added or a challenging environment is encountered and may have increased risk of falling when their attention is divided. Vestibular patients have a similar acceleration pattern but with reduced values compared to age matched controls and this is marked with addition of a cognitive task.

Abstract No. 689: Effect of T Follicular Helper Cells on Regulation of Mucosal Immunity to Influenza Haemagglutinin by CpG-DNA

Abdullah N Aljurayyan[1, 2] and Qibo Zhang[2]
Department of Immunology and Serology, King Fahd Medical City, Saudi Arabia [1]
Institution of Infection and global health, University of Liverpool, Liverpool, UK [2]
jurayyan@gmail.com

Background: Stimulation of the innate immune system is known to be important in the initiation and regulation of adaptive immunity. Therefore, inclusion of some immunological adjuvants such as Toll-like receptor ligands, which trigger early innate responses to enhance the adaptive responses, is crucial to vaccine effectiveness. T follicular helper cells (TFH) have been shown to be critical in germinal centre function and in the regulation of adaptive immunity. The aim of this study is to investigate whether and how CpG-DNA (a TLR-9 ligand) regulates mucosal immunity to influenza haemagglutinin through TFH cells. Methods: Mononuclear cells (MNC) were isolated from adenotonsillar tissue collected form children and adults and co-cultured with influenza antigens with or without CpG-DNA. B cell antibody production in tonsillar cells was analysed by ELISA. TFH cells and effect of CpG-DNA on their function were analysed by flowcytometry and intracellular cytokine staining. Results: Our results demonstrate that TFH in tonsillar MNC express high levels of IL-4, IL 10 and IL-21, which are important for B cell antibody production. Stimulation of adenotonsillar MNC by CpG-DNA significantly increased the number of TFH cells and that was correlated with the antigen-specific antibody production to haemagglutinin (HA) of seasonal influenza virus in adenotonsillar cells. Conclusion: CpG-DNA promotes TFH cells in nasal-associated lymphoid tissue which correlates with the enhancement of influenza HA-specific antibody production. Understanding the mechanisms by which TLR ligands regulate adaptive immunity through TFH cells may lead to novel vaccines against respiratory infections.

Keywords: TFH cells, CpG-DNA, TLR-ligands.

Abstract No. 696: Using Nurse-Sensitive Outcome Indicators to Assess Variations in the Quality of Care Provided by Ambulatory Chemotherapy Services in the kingdom of Saudi Arabia: a Descriptive Cross-Sectional Study

Dena Marwan Attallah
Faculty of Health Sciences, University of Southampton

Background: The quality of patient care is a major universal concern among healthcare managers, policymakers and consumers, including in the Kingdom of Saudi Arabia (KSA). To date, no study has assessed the quality of care provided by nurse-led ambulatory chemotherapy services in the KSA. It is thus important to track outcomes involving chemotherapy-related symptoms and experiences of supportive care, in order to evaluate the effectiveness of nursing interventions and demonstrate the impact of high-quality care. Objective: This study will establish whether variability exists in nurse-sensitive outcomes in ambulatory chemotherapy units in the KSA. It will specifically focus on symptom management, safe medication administration and experience of supportive care. Methods: This study has a descriptive, cross-sectional design with two preparation stages. First, cognitive interviews will be conducted with 5-10 patients to ensure the clarity, comprehensiveness and appropriateness of a proposed questionnaire (a translated Arabic version of the PR-CISE survey). The questionnaire will then be pilot tested with 20-30 cancer patients undergoing chemotherapy in a single centre. Moreover, a data collection tool that

describes the characteristics of chemotherapy units and provides contextual data (on unit size, staffing, etc.) will be tested. Finally, the study will collect data from seven ambulatory chemotherapy units located in the two largest cities in the KSA, using the last version of the questionnaire and the aforementioned questionnaire developed for this study. In doing so, it will establish whether variability exists in nurse-sensitive outcomes among ambulatory chemotherapy units in the KSA. Results: The findings will provide evidence on the quality of care provided by ambulatory chemotherapy services in the KSA. Its results could be used to improve patient services and benefit policymakers and nurse administrators, who need evidence-based information about the effectiveness and benefits of nursing interventions, especially in the context of managing symptoms experienced by chemotherapy patients.

Abstract No. 699: DNA Methylation Profiles of Long- and Short-Term Glioblastoma Survivors.

Thoraia Shinawi, Hill VK, Krex D, Schackert G, Gentle D, Morris MR, Wei W, Cruickshank G, Maher ER, Latif F.
University of Birmingham, College of Medical and Dental Sciences, UK.
t.shinawi@hotmail.com

Glioblastoma (GBM) is the most common and malignant type of primary brain tumor in adults and prognosis of most GBM patients is poor. However, a small percentage of patients show a long term survival of 36 mo or longer after diagnosis. Epigenetic profiles can provide molecular markers for patient prognosis: recently, a G-CIMP positive phenotype associated with IDH1 mutations has been described for GBMs with good prognosis. In the present analysis we performed genome-wide DNA methylation profiling of short-term survivors (STS; overall survival < 1 y) and long-term survivors (LTS; overall survival > 3 y) by utilizing the HumanMethylation450K BeadChips to assess quantitative methylation at > 480,000 CpG sites. Cluster analysis has shown that a subset of LTS showed a G-CIMP positive phenotype that was tightly associated with IDH1 mutation status and was confirmed by analysis of the G-CIMP signature genes. Using high stringency criteria for differential hypermethylation between non-cancer brain and tumor samples, we identified 2,638 hypermethylated CpG loci (890 genes) in STS GBMs, 3,101 hypermethylated CpG loci (1,062 genes) in LTS (wild type IDH1) and 11,293 hypermethylated CpG loci in LTS (mutated for IDH1), reflecting the CIMP positive phenotype. The location of differentially hypermethylated CpG loci with respect to CpG content, neighborhood context and functional genomic distribution was similar in our sample set, with the majority of CpG loci residing in CpG islands and in gene promoters. Our preliminary study also identified a set of CpG loci differentially hypermethylated between STS and LTS cases, including members of the homeobox gene family (HOXD8, HOXD13 and HOXC4), the transcription factors NR2F2 and TFAP2A, and Dickkopf 2, a negative regulator of the wnt/β-catenin signaling pathway.

Abstract No. 709: Blocking HOX-PBX Interaction is a Potential Therapy in AML

Raed Alharbi
University of Surrey

The HOX genes are a highly conserved family of homeodomain-containing transcription factors that are dysregulated in several malignancies and are involved in oncogenesis and cancer cell survival. Targeting the interaction of HOX proteins with their cofactor PBX using the peptide HXR9 has shown anti-tumor effects against melanoma, lung cancer, renal cancer and multiple myeloma. Here, we measured the expression of all 39 HOX genes in two AML cell lines, K562 and HL-60, and found different levels of expression of HOX family members suggesting that HOX genes also have a role in AML. Furthermore, targeting the HOX-PBX dimer using HXR9 induced cell death in both lines, this was independent of caspases activity, but dependent on Ca2+ release and ROS production. Additionally, the cell death was through a mechanism that, at least in part, involved over-expression of c-FOS protein. These results suggest that the HOX-PBX dimer is a potential therapeutic target in AML.

Abstract No.719: Development of Nanoparticles Based Approched for Basophils and Mast Cells

Walla Alelwani, Franco H. Falcone and Snjezana Stolnik
School of Pharmacy, University of Nottingham, UK

Activation of mast cells and basophils by the clustering at least two high affinity receptors (FcεRI) by IgE bound to multivalent antigen induces signaling cascades leading to mediator release such as histamine [1]. The release of this mediator leads to inflammatory and allergic symptoms [2]. Here we describe the design of a nano-system as a potential drug carrier capable of targeting basophils and mast cells via FcεRI, which is restricted to these cell types. This will be performed via surface modification of model polystyrene nanoparticles (PS NPs) by attachment of two antibodies, IgE and IgG. We have optimised the conditions of degranulation with respect to formation of stable PS NPs using RBL-2H3 cells. The maximal release was obtained when cells were sensitizing with 100ng/ml of anti-DNP-IgE followed by stimulation with 100ng/ml of DNP-BSA. The stable and monodispersed NPs were achieved when 3.7mg BSA was adsorbed on the surface of 0.025% w/v PS NPs, in addition to 0.1% w/v PEG in HBSS buffer. Data indicated that NP modified surfaces serve as an antigen for eliciting immune response leading to basophil degranulation compared to uncoated NPs which did not induce release.The next step will be to engage basophils via IgE without activating the cells. This will be achieved by co-adsorbing IgE and IgG1 on PS NPs, which engages the inhibitory IgG receptor FcγRIIb.

Abstract No. 725: Development of Nanoparticles Based Approched for Basophils and Mast Cells

Walla Alelwani, Franco H. Falcone and Snjezana Stolnik
School of Pharmacy, University of Nottingham, UK
miss-walla@hotmail.com

Activation of mast cells and basophils by the clustering at least two high affinity receptors (FcεRI) by IgE bound to multivalent antigen induces signaling cascades leading to mediator release such as histamine [1]. The release of this mediator leads to inflammatory and allergic symptoms [2]. Here we describe the design of a nano-system as a potential drug carrier capable of targeting basophils and mast cells via FcεRI, which is restricted to these cell types. This will be performed via surface modification of model polystyrene nanoparticles (PS NPs) by attachment of two antibodies, IgE and IgG. We have optimised the conditions of degranulation with respect to formation of stable PS NPs using RBL-2H3 cells. The maximal release was obtained when cells were sensitizing with 100ng/ml of anti-DNP-IgE followed by stimulation with 100ng/ml of DNP-BSA. The stable and monodispersed NPs were achieved when 3.7mg BSA was adsorbed on the surface of 0.025% w/v PS NPs, in addition to 0.1% w/v PEG in HBSS buffer. Data indicated that NP modified surfaces serve as an antigen for eliciting immune response leading to basophil degranulation compared to uncoated NPs which did not induce release. The next step will be to engage basophils via IgE without activating the cells. This will be achieved by co-adsorbing IgE and IgG1 on PS NPs, which engages the inhibitory IgG receptor FcγRIIb.

Abstract No 734: The Regulation of Protein Aggregation by Arfaptin2 in Amyotrophic Lateral Sclerosis

Aida Mohammedeid

Rationale & Hypothesis: The previous studies (Peters et al 2002, Rangone et al 2005) showed that arfaptin2, or its C-terminal has a neuroprotective property that maintains the proteasome activity and induces degradation of misfolded proteins. Therefore, we hypothesise that the C-terminal of Arfaptin-2 (half-C) might control protein aggregation in ALS via maintaining the proteasomal pathway, which in turn will decrease neuron toxicity and improve neuronal survival.

Objectives:

1) To investigate the effect of arfaptin2-mediated regulation of protein aggregation in wild-type and mutant SOD1G93A NSC34 cells and primary motor neuron culture.
2) To assess whether arfaptin2 is involved in TDP43 protein aggregation in primary motor neuron cells of SOD1G93A mouse embryos
3) These would provide evidence whether arfaptin2 is a gene therapy target for ALS
4) The ultimate aim of this project is to improve quality of life for ALS patients

Methodology: NSC34 cell line and primary motor neurons of mouse embryos (E13) are cultured and transfected with arfaptin2, C-terminal arfaptin2 or TDP43 plasmid DNA. Oxidative stress was applied by treatment with H2O2. The cells were then fixed and the transfection effect was observed by immunostaining. Spinal cord sections from SOD1G93A mouse were immunostained for arfaptin2 and SOD1. Lenti-virus vector expressing arfaptin2, C-terminal arfaptin2 or TDP43 are produced to increase the transduction efficiency.

Findings:

1. Arfaptin2 colocalises with two of the best characterised proteins detected in ALS-linked aggregates, which are SOD1 and TDP43 in NSC34 and primary motor neurons

2. Arfaptin2 colocalises with SOD1 in aggregates in spinal cord sections of SOD1G93A adult mouse
3. Full-length arfaptin2 over-expression induces protein aggregation formation. On the other hand, C-terminal arfaptin2 over-expression decreases protein aggregation and neurotoxicity and induce cell survival in NSC34 cells
4.

Keywords: Arfaptin2, ALS, Neurdegeneration, Gene therapy.

Abstract No. 745: Role of MHC class II in Association with CD74 on Human Breast Cancer Cell Lines

Hussain Alssadh

The expression of HLA-DR and CD74 has been identified in several types of cancer and is believed to play a role in immunotolerance. CD74 is a type II transmembrane protein that plays a role in the assembly of MHC class II molecule-peptide complexes in antigen presentation. Their selective expression is assumed to activate certain mechanisms/signal transduction pathways that suppress or modulate the immune system and protect the developing of cancerous cells including metastasis. The expression of the cell-surface of HLA DR and CD74 on human breast cancer cell lines including CAMA-1 and MCF-7 were assessed using flow cytometry analysis and Western blotting. Results show both cell lines express CD74 protein and HLA-DR, though latter expressed to lower extent by both cell lines. However, MCF-7 and CAMA-1 show similar surface level expression of CD74, though from western blot results can be seen that the total protein content of MCF-7 is higher. Results have also confirmed that the surface expression of CD74 is possible even in the absence of HLA-DR molecules

Abstract No. 758: Using Label Free Proteomics to Investigate Human Respiratory Syncytial Virus and the Effects of the Antiviral Ribavirin

Waleed Aljabr
Institute of Infection and Global Health, University of Liverpool
3.waleed@gmail.com

Human respiratory syncytial virus (HRSV) is known cause of severe lower respiratory tract infection in infants and young children worldwide. HRSV can cause illness in all ages especially in those people considered at high risk - the immunocompromised and the elderly. Globally, HRSV infection results in significant healthcare and economic burdens due to no approved vaccine, costly antiviral therapies that are of limited efficacy. Ribavirin is one of the most commonly used antiviral drugs licensed for the treatment of many different virus infections. It is a synthetic nucleoside with broad spectrum of antiviral activity that affects RNA viruses in vivo and in vitro. Ribavirin is thought to inhibit the replication HRSV throughout the active replication phase. However, the mechanism of action of ribavirin is still unknown and not proven. The aim of this project was to study the effect of ribavirin on the whole host cell lysate in the absence and presence of HRSV using high throughput quantitative proteomic techniques but focused on label free rather than SILAC. It is focused on human A549 and Hep2 cells which are originally of respiratory organ. Over 1500 cellular proteins were identified and quantified by LC-MS/MS in each sample. 248 cellular proteins increase abundance were identified in RSV infected cells while 240 cellular proteins increase abundance were identified in mock-ribavirin sample. A ≥ two-fold change was the cut off in this study and the network interaction data was analyzed by String. The finding of this study

will provide a better understanding of the mechanism of ribavirin in HRSV infected cells and on host cell biology.

Abstract No. 764: Defining the signaling mechanisms of Lymphocyte Activation Gene-3 (LAG-3) in T cells

Naif Ali Alhumeed, Thilipan Thaventhiran, Laith Abbas Al-Huseini§, Han Xian Aw Yeang§, Kevin Park§, Jean Sathish
Department of Molecular and Clinical Pharmacology, University of Liverpool
naif2al@hotmail.com

Background: Lymphocyte activation gene-3 (LAG-3) is an inhibitory receptor expressed on activated T cells. LAG-3 is engaged by MHC class II molecules expressed by antigen presenting cells (such as dendritic cells) which leads to T cell inhibition. The molecular mechanism of T cell inhibition by LAG-3 is unclear. Study Aim: The broad aim of our research is to define the signalling pathways that are modulated by LAG-3. The specific aim for the initial part of our research is to establish a DC-T cell antigen specific experimental system that will enable analysis of key T cell signalling pathways. Methodology: T cell and DCs were isolated from the spleen and bone marrows, respectively, of F5-TCR transgenic C57/B6 mice. LAG-3 expression on activated CD8+ T cells was measured by flow cytometry and T cell proliferation was quantified by 3H thymidine incorporation. T cell signalling was assessed by western blotting. Results: We demonstrate that a mouse transgenic T cell receptor model (F5 TCR transgenic mouse) when coupled with dendritic cells that express the correct antigen is an appropriate model to examine LAG-3 signalling. Our results reveal induction of tyrosine phosphorylation in several T cell proteins and identify a potential candidate target of LAG-3 modulation. Conclusion: The F5 TCR transgenic and dendritic cell mouse experimental system is useful for signalling studies on LAG-3.

Abstract No.781: Structural Studies on Trypanosoma brucei Flap Endonuclease Wild Type (TbFENWT)

Faizah A. AlMalki[1,3], Sarah L. Oates[2], Svetlana E. Sedelnikova[1], Jon R Sayers[2] and Peter J. Artymiuk[1]
Department of Molecular Biology and Biotechnology[1], University of Sheffield
Medical School[2], University of Sheffield, UK
Faculty of science, Taif University, Saudi Arabia.[3]

Trepanosoma brucei (Tb) is the causative agent of Sleeping Sickness and representative of a variety of protozoan parasites. Tb flap endonuclease (FEN) is a member of the 5' structural-specific nucleases which are metalloenzymes that use two metal ions in their activity. FEN proteins are involved in multiple DNA repair pathways such as the processing of Okazaki fragments during DNA replication and they can act as both endo- and exonucleases. The TbFEN enzyme shares more than 50% sequence identity with the human flap endonuclease (FEN-1) and its crystal structure has been solved for the first time in our lab using X-ray crystallography. It has the same architecture as the other FEN family members and is composed of four parts: the N-terminal region, the C-terminal region, a helical arch which is disordered in our structure and the active site. This structure has been complexed with calcium ions present in the crystallization buffer. Three calcium ions coordinated by nine acidic residues in a large active site which can be divided into two sub-sites primary and secondary sites. Each one is composed of four acidic residues with the ninth residue bridged between them. The secondary active site that is presented in the TbFEN enzyme is reported in FEN family members for the first time. This work will enable us to

compare the trypanosomal structure with the human FEN structure in the hope of designing molecules that will inhibit the former but not the latter. The aim of this is to provide potential lead molecules for anti-protozoan drug design.

Abstract No. 789: Use of the RS-ATL-8 NFAT Reporter Cell Line for Diagnosis of Hydatid Disease

Nafal Jamil AL-Barwary, Nafal Jamil AL-Barwary, Franco Falcone
School of Pharmacy, University of Nottingham, UK
paxnjalb@exmail.nottingham.ac.uk

Despite major advances in the medical diagnosis of the vast majority of pathogenic organisms, there are still problems with immunodiagnosis of Echinococcus spp. infection, due to serological cross-reactivity with other species of cestodes and trematodes, respectively. Furthermore there is a lack of serological techniques able to diagnose echinococcal infection in the initial stages of the disease. This study focuses on developing a new method based on detection of parasite-specific IgE using reporter cell lines RS-ATL-8 assay which can report IgE crosslinking with luciferase or fluorescent protein expression, and parasitic allergens produced using cell-free translation systems. Our hope is that such a technology will enable higher specificity and sensitivity for diagnosis of Echinococcus infection, and ideally would have the ability to discriminate between alveolar and cystic echinococcosis. A number of Echinococcus spp. proteins were chosen for investigation into their immunogenic properties and diagnostic value. These included EF1-Alfa, EgAg5, AgB2, Cyclophilin, Eg19, EgTeg, and EgTPx. Their genes were amplified from a cDNA library using a polymerase chain reaction. The PCR products were purified and cloned into pF3A WG (BYDV) Flexi® Vector plasmids. After that, the genes were expressed through wheat germ lysate (WGL). The expressed proteins were identified through SDS-PAGE. All genes were successfully amplified from the cDNA library and cloned into the pF3A WG (BYDV) Flexi® Vector. In the next step of this project, the expressed proteins will be detected through an RS-ATL-8 assay through the IgE cross-linking induced luciferase expression using the sera of both cystic and alveolar echinococcosis patients, healthy persons, and other patients.

Abstract No. 800: The role of inflammatory mediators in the sensitisation of TRPV1

Sara Aldossary
Cell Physiology and Pharmacology, Leicester University
saa45@le.ac.uk

The transient receptor potential vanilloid subfamily member TRPV1 (capsaicin receptor) was the first identified member of a family of heat sensitive ion channels to be identified in mammals. Under normal physiological conditions, it is activated by heat with a thermal threshold of > 43°C but when tissues are damaged thermal allodynia and hyperalgesia occur due to the modulation by inflammatory mediators and protons released from damaged cells and a number of lipids acting at a variety of sites. Capsaicin, the heat producing ingredient of the capsicum family, directly activates The aim of these experiments was to determine 1) which inflammatory mediator pathways that converge on the TRPV1 ion channel. Using immunocytochemical techniques we have co-localised TRPV1 with the prostaglandin, EP4 receptor, and the bradykinin, B2 receptor, and 2) the responses of individual DRG neurons to capsaicin and their modulation by inflammatory mediators applied individually or in combination. Immunocytochemical analysis was done on different ganglia from at least three different rats to localised different proteins. 10 µm sections were cut using a ultracryomicrotome. Section were fixed in 2% w/v paraformaldehyde for 10 minutes

followed by 15minute wash in PBS. Sections were incubated in the appropriate primary antibody overnight in an incubation box at 4°C (first experiment EP4 1:200, TRPV1 1:1000) for second experiment primary (EP4 1:200, B2 1:100). The sections were then washed in PBS follow by incubated for 2 hours at room temperature in secondary antibody for first experiment (EP4 primary, Texas Red-conjugated goat anti-rabbit, 1:500 dilution ; TRPV1 antibody, Alexa- Fluor 488-conjugated goat anti-mouse, 1:2000) and for second experiment EP4 primary, Alexa-Fluor488-conjugated donkey anti-rabbit, 1:200 dilution ; B2 antibody, Texas Red conjugated donkey anti-goat, 1:100). Sections were then washed in PBS and tissue sections were mounted using a Citiflour. cells were imaged on an Olympus Fluoview FV300 confocal microscope.

Keywords: pain, TRPV1, PG2 and nociceptors.

Abstract No. 801: An Investigation of Associations of Calcium-Sensing Receptor Autoantibodies with Clinical Manifestations and Other Autoantibody Specificities in Patients with Autoimmune Polyendocrine Syndrome Type 1

Habibullah M[1], Sandhu HK[1], Krohn KJE[2], Weetman AP[1], Kemp EH[1]
[1]The Medical School, University of Sheffield, UK
[2]Tampere University Hospital and Institute of Medical Technology, University of Tampere, Finland

Rationale & Hypothesis: Autoimmune polyendocrine syndrome type 1 (APS1) is an autosomal recessive disease caused by mutations in the autoimmune regulator (AIRE) gene. The disease is characterised by the presence of at least two of the following: chronic mucocutaneous candidiasis, autoimmune hypoparathyroidisim and Addison's disease. Patients have autoantibodies and inflammation of internal organs due to infiltrating T lymphocytes. Hypoparathyroidism occurs in 80% of patients, is associated with low levels of parathyroid hormone (PTH), and is suggested to result from aberrant humoral immune responses against the parathyroid. Indeed, the calcium-sensing receptor (CaSR), which plays a pivotal role in maintaining calcium homeostasis by sensing circulating calcium levels and regulating PTH synthesis and release, has been identified as a parathyroid autoantibody target (autoantigen) in our previous studies of a small group of 15 APS1 patients. Objectives: 1) To investigate the prevalence of CaSR autoantibodies in a larger cohort of APS1 patients (n = 44); and 2) To elucidate any associations of CaSR autoantibodies with clinical manifestations and other autoantibody specificities in APS1 patients. Methodology: ELISA; radioligand binding assays; immunoprecipitation assays; statistical analysis. Findings: CaSR autoantibodies were detected in 16/44 (36%) APS1 patient sera using an immunoprecipitation assay. Autoantibodies against cytokines interleukin (IL)-22, IL-17A, IL-17F, interferon (IFN)-omega and IFN-alpha2A were detected in APS1 patient sera using an ELISA, and were found at prevalences of 100%, 93%, 57%, 64%, and 98%, respectively. Nalp5 (a parathyroid-associated autoantigen in APS1) autoantibodies were found in 30% of patients using a radioligand binding assay. Overall, the presence of CaSR autoantibodies was not associated with Nalp5 or cytokine autoantibodies, or with any clinical manifestation of APS1 (all P values were > 0.05 in Chi-square tests).

Abstract No. 805: The Application of Novel Mass Spectrometry Techniques for the Quantifications of TCA Cycle Intermediates in Human Gliomas: In the Search for Biological Markers of Cancer

Khalid Al-Qahtani[1,3], Chiara Bardella[2], Inga Pfeffer[1] ,Daniel Krell[2, 1], Ian Tomlinson[2]
Christopher J.Schofield1, James S. O. McCullagh
[1]Department of Chemistry, University of Oxford, UK.
[2]Wellcome Trust Centre for Human Genetics, University of Oxford, UK.
[3]Metabolic Screening Laboratory, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia
khalid.m.q@hotmail.com

We present a two highly selective and sensitive method for identification and quantification of intracellular metabolites involved in tricarboxylic acid cycle (TCA) metabolism (including the configuration of the enantiomers of (L/D)-2-hydroxyglutaric (L/D 2-HG), (L/D) glutamic and (L/D) glutamine acids) by means of liquid chromatography-tandem mass spectrometry (LC–MS/MS). We also apply these methods in vitro and in vivo based studies identifying and quantifying oncometabolites.The simultaneous separation of 6 negatively charged intermediates is performed using ion-pairing chromatographic separation and the enantiomeric chiral separation of (L/D)-2-HG acid using a ristocetin A glycopeptide antibiotic silica gel bonded column. The 8 enantiomeric forms of the 4 intermediates were well separated with baseline resolution at 15min run. We also developed and applied a novel isomerically specific liquid chromatography-mass spectrometry method for studying changes in concentration for TCA cycle intermediates and their associated metabolites. This method uses a hybrid stationary phase incorporating an Acquity HSS T3 column (hydrophilic C18 retention mechanism) coupled to an ACE-PFP (pentafluorophenyl modified C18). These LC–MS/MS methods were developed and applied to the analysis of cancer cell tissues to investigate changes in the concentration of TCA intermediates and the identity of selected enantiomer concentrations. Here we describe the methodology used and give examples from the analysis of selected wild-type and modified cancer cell lines which show highly specific enatiomeric changes taking place in mutant cell lines. The chiral differentiation and quantification of L-2-hydroxyglutarate is key to characterizing neuro-metabolic disorders and D-2-hydroxyglutarate in the characterisation of IDH1,IDH2 mutations associated with the reduction of 2-ketoglutarate to D-2 hydroxygluatarate in the TCA cycle. We have developed tools to distinguish and quantify the enantiomers of L/D-2-HG which can be used for both characterising changes in the metabolic pathways associated with wild type and modified cancer cell lines as well as other disorders of metabolism.

Abstract No. 834: Dynamic Contrast Enhanced MRI and Bubble Ultrasound of Neovascularisation in Carotid Plaque

Wafa M M Abutaleb , V Young, L Berman, Martin Graves, Andrew Patterson, J H Gillard
University of Cambridge, UK

Aims and objectives: Atherosclerotic plaque present within the carotid artery is a major risk factor for stroke. Neovascularisation is considered a forerunner of plaque vulnerability. Nevertheless, few imaging techniques can be used to detect and quantify neovascularisation. Perfusion contrast enhanced imaging in both MRI and Ultrasound imaging shows high potential for accurate characterization of plaque morphology and evaluation of plaque function such as neovascularisation. To the best of our knowledge, we are the only group who has tested both modalities on the same patients to measure the neovascularisation in carotid plaque. Methods and materials: Twelve patients with >30% carotid stenosis identified by ultrasound underwent both MRI and Ultrasound imaging. (a) MR Imaging and analysis: Images were obtained at 6-second intervals and a gadolinium contrast agent was injected coincident with the recording of 4 images in the sequence. The resulting image intensity within the plaque region was tracked over time, and a kinetic model was used to estimate the fractional blood volume (b) Ultrasound: perfusions of 2.5-5 cc micro-bubble contrast (SonoVue) within the plaque were recorded for up to 3 minutes using Toshiba Contrast Harmony Imaging (CHI). Results: We have acquired interpretable images from 12 patients and the preliminary results show correlation between the dB-enhanced time curves of micro-bubble measurements and the MRI signal intensity time curves using a kinetic modelling method. Conclusion: The present study indicates that intra-plaque neovascularisation detected by CEUS is associated with its presence in established methods using MRI Kinetic Modelling.

Abstract No. 844: The Reduced Intensity Status Epilepticus (RISE) model of epileptogenesis and its characterisation in rat piriform cortex

Ahlam M. Alhusaini
School of Pharmacy, University of Reading
amo-hus@hotmail.com

Many animal models of epilepsy exhibit seizures, the principal symptom of epilepsy yet often fail to reflect important co-morbidities or exhibit unrepresentative sequel such as massive neurodegeneration. Epilepsy was induced in adult male Wistar-Kyoto rats using a modified and validated version of lithium-pilocarpine-xylazine model. Extracellular electrophysiological recordings of spontaneous neuronal activity from transverse piriform cortical (PC) slices prepared from confirmed epileptic and age-matched control rats were made using multi-electrode arrays (MEAs). Immunohistochemical (IHC) analysis of coronal PC sections was used to investigate disease-induced cellular changes to PC using neuronal and astrocyte specific stains (BTIII and GFAP respectively). 67% of tested animals met the PSBB criteria that confirmed the presence of SRS within 12 weeks of induction where the majority reached criteria on the 4th or 5th weeks following induction. 17 confirmed epileptic animals were used for in vitro electrophysiological recordings of which 65% exhibited spontaneous epileptiform local field potentials (LFPs) across all the three PC layers. Interestingly, whilst epileptiform activity was apparent in all three PC layers and propagated parallel to the pial surface, the direction of propagation of activity varied from slice to slice. Moreover, following spectral analysis, a highly significant increase ($p<0.001$) in the mean of power spectral density of each PC layer of epileptic animal compared to non-epileptic

controls. IHC results showed a significant increase ($p<0.001$) in the astrocyte activation in all PC layers of epileptic animals but no significant change in BTIII expression. The RISE model of epileptogenesis, shows features that are entirely consistent with many human type of epilepsy, including the established behavioural and seizure characteristics, and a lack massive neurodegeneration across PC.

Keywords: Epilepsy, Recurrent spontaneous seizure, Status epilepticus, Piriform cortex.

Abstract No. 849: Dicarbonyl Stress and the Glyoxalase System in Periodontal Ligament Fibroblasts in vitro

Amal Ashour, Paul J Thornalley and Naila Rabbani
Clinical Sciences Research Laboratories, Warwick Medical School, University of Warwick, University Hospital, Coventry CV2 2DX, UK
a.a.d.ashour@warwick.ac.uk

Periodontal ligament (PDL) inflammation or periodontitis is a common disease characterized by gradual destruction of connective tissue fibres that attach a tooth to the alveolar bone. Diabetes and inflammation enhances periodontal bone loss through enhanced resorption and diminished bone formation. PDL fibroblast attachment and function to type 1 collagen is impaired by methylglyoxal (MG) modification in vitro. Glyoxalase 1 (Glo1) is the main enzyme catalysing the metabolism of MG in PDL fibroblasts. it is hypothesised that increased PDL detachment and dysfunction by MG may occur in biochemical dysfunction in hyperglycaemia and by increased exposure to exogenous MG by ingestion of high MG content food and beverages. The aim of this study was to evaluate the effects of low and high glucose concentrations and exogenous MG on the glyoxalase system in human periodontal ligament fibroblasts (hPDLFs) in vitro. Primary hPDLFs were cultured for three days with high glucose (25 mM) and low (8 mM) glucose to mimic hyperglycaemic conditions. Glo1 activity was determined by measuring the initial rate of formation of S-D-lactoyl-glutathione from the hemithioacetal substrate formed non-enzymatically from methylglyoxal and reduced glutathione (GSH).The reaction is followed spectrophotometrically at 240 nm; $\Delta\varepsilon 240 = 2.86$ mM−1 cm−1. D-glucose consumption and D-lactate formation were determined using end-point enzymatic assay spectrophotometrically at 340 nm and (λexcitation 340 and λemission 460 nm) respectively. Dicarbonyl content and protein damage markers of medium and cell protein were determined by stable isotopic dilution analysis using LC-MS/MS. There was a 49% decrease of glyoxalase 1 activity ($p<0.0001$) in hPDLFs incubated in high glucose compared to control. The flux of MG formation, as judged by increase in D-lactate, was increased 42% ($P<0.01$). To conclude, the exposure of PDL cells to high glucose down regulate Glo1 which may increase MG glycation to collagen and playing a role in PDL dysfunction.

Abstract No. 850: Scaphoid Fracture Imaging Strategy

Alshamrani, Hassan
School of Healthcare Studies, Cardiff University
haas_123@windowslive.com

Purpose of the study: Scaphoid fracture is very common injury. Early diagnosis is crucial to avoid under/over treatment. Although scaphoid imaging has been extensively investigated, imaging protocols are widely varies among healthcare providers. Having standardised and adequate imaging strategy can significantly improve the clinical outcome. This abstract aims to draw an imaging strategy for scaphoid fracture. Methodology: Critical Analysis was conducted on the literature between April and September 2013. A literature search has been undertaken in the PubMed using the keywords, scaphoid fracture, radiography, MRI, CT and bone scan. The search results were filtered in a systematic way using the following inclusion criteria: studies repoted primary research paper, in which a reference standard was used or paired study design in which two imaging modalities were used as a follow-up. Ultrasound studies were excluded as they are operator-dependant. Result: MRI showed excellent sensitivity, specificity compared to other techniques. MRI indeed benefits from the lack of ionising radiation. Some studies suggested using MRI as initial imaging. However, this technique has some disadvantages including but not limited to, the availability of the machine, the relatively long scanning time as well as not every patient will be eligible for this technique. It is suggested that plain radiographs remain the first imaging line. They are easy, quick and most importantly can answer the clinical question in around 75% of all patients. In the remaining 25%, MRI can be used to confirm or exclude the fracture. Conclusion: A good imaging strategy can be obtain by using two imaging lines, primary and secondary. Plain radiographs represent the primary imaging. In case of occult fracture, MRI is the optimal secondary imaging choice due to its high accuracy.

Abstract No. 852: Towards the Mimicking Properties of the Naturally Enteroochelin for Use in Biological Systems

Abeer Bukhari
School of Chemistry, University of Manchester, UK
abeer.bukhari@postgrad.manchester.ac.uk

Transition metals play a fundamental role in the regulation of chemical processes within biological system; intracellular concentration transition metals that have important consequences in the onset of a variety of disease states such as neurodegenerative diseases. In this poster we present our initial findings into the development of a robust, generic, approach to the synthesis of macrocyclic, synthetic receptors which are able to sense, either in vitro or in vivo, the presence of transition metals. The work presented in this poster details the synthesis of macrocyclic templates which are derived from the cyclotrimerisation of L-serine derivatives. Introduction of a novel metal chelating residue, based upon a 2, 3-dihydroxtbenzenesulfonamide moiety are discussed. Derivatisation of a pre-formed macrocylic core, derived from an L-serine trimer, proves to be the most economical method for the synthesis of the desired siderophores. During the synthesis of 2, 3-dihydroxy-5, 6-dimethylsulfonylchloride, a key intermediate for the assembly of the siderophore, we encountered a number of hitherto unknown reactions. Namely, the dimerisation of 4,5-dimethyl-6-chlorosulphonyl-1,2-benzoquinone affords a product which can exist in two tautomeric forms. The structures of the two isomeric products (which differ merely by the locus of a hydrogen atom) were unequivocally established by X-ray crystallography. This observation provides a very rare example of 1,2-diketo-desmotropy. Similarly, attempted

sulfonylation of serine methyl ester derivative afforded a 4, 1, 2-benzoxathiazine derivative via a novel rearrangement process. Benzo-1,2-quinone dimers also serve as useful platforms for further derivatisation, an aspect of our work which will also be presented in the poster. We have developed a modular approach to the synthesis of novel sulphonamide-containing siderophores. In these investigations we observed a number of novel reactions of benzoquinone dimers and 2,3-dihyroxybenzenesufonamides which many have application in medicinal chemistry.

Abstract No. 857: Studies on the Oncogenic Properties of the human T cell leukaemia virus type 1 (HTLV-1)

Rowaid Qahwaji, Anthony W. Oliver, Lynne Hampson and Ian N. Hampson
School of Medicine, The University of Manchester
rowaid_q@hotmail.com

Background It has previously shown that the HPV16 E6 oncoprotein can suppress the functions of the cellular antiviral protein, ribonuclease L (RNase L). Since it is known that the HTLV-1 Tax and HPV16 E6 oncoproteins possess several activities and functions in common, it was decided to investigate the potential effects of HTLV-1 Tax on the cellular RNase L antiviral system and its endogenous inhibitor ABCE1 (RNase L Inhibitor gene). Methods: Jurkat T-cell leukaemia cells stably transfected with Tax viral gene under the control of two different promoters, a metallothionein promoter (JPX Cells) where cells initially treated with 20 µM CdCl2 for 24 hours, and tetracycline (Tet) regulated promoter (T-Rex cells) with treatment of 1µg/ml Tet . Expression of Tax, RNase L and ABCE1 were analysed by RT-PCR, and Western blotting (W.B). Growth comparison of cells was performed by MTT assays. Monoclonal cell lines were derived from polyclonal transfectants by serial dilution of cells. Results: Expression of Tax, RNase L and ABCE1 mRNA and protein was detected in JPX cells as demonstrated by RT-PCR and W.B. 30 monoclonal cell lines were generated from Tax polyclonal transfectants of the Tet inducible cells. RT-PCR analysis has shown a proficient expression of Tax mRNA in the polyclonal and 3/30 of the monoclonal cells. The Tet inducible system has much lower levels of off-target effects related to the toxicity of CdCl2. Conclusions: Having now confirmed the expression of all targeted genes, the interactions between Tax and the endogenous ABCE1 and RNase L proteins will be investigated. Furthermore, it is also intended to use this unique cell system to determine the effects of Tax expression on total Jurkat mRNA expression by microarray analysis followed by analysis with Ingenuity Systems Pathway Biology software.

Keywords: HTLV-1 Tax, RNase L, ABCE1, JPX cells, Jurkat T-Rex cells.

Abstract No. 877: Vitamin D Deficiency in Relation to Neuropathy and Muscle Function in Diabetic Patients

Monirah Almurdhi
School of Medicine, University Of Manchester

Aim: To investigate intra-observer repeatability, agreement and symmetry of isometric muscle contractions, muscle volume of the right leg and skeletal bone density in healthy control subjects. Method: Twelve healthy control subjects (8 males and 4 females) underwent assessment of: 1. Isometric muscle contraction of knee extensors at 55,70,85 degrees and ankle plantar flexors at 0, -5 and -10 degrees, using isokinetic dynamometry (Cybex Norm, Ronkonkoms, NY); 2. Muscle volume using magnetic resonance imaging (MRI) (0.25 Telsa MRI scanner); 3. Bone mineral density using Dual-energy x-ray absorptiometry (DEXA) on two occasions within 7 days. The intra-class correlation coefficient was used to assess repeatability of the tests and Bland-Altman plots were used to evaluate the agreement between measurements. Results: The intra-class correlation coefficient (ICC) showed that there was excellent reliability for all measures of strength on two occasions in all three angles at the knee (0.95 - 0.98) and ankle joint (0.96 – 0.98). The ICC for MRI images was (0.96 - 0.99) and 0.99 for the BMD measurements. Increasing the knee angle toward flexion and the ankle toward dorsiflexion produced a significantly higher maximal isometric muscle contraction. Females had weaker knee extensors muscles than males, whereas there was no significant difference in muscle strength for ankle plantar flexors between both sexes. Detailed analysis of the MRI images showed that muscle volume was significantly lower in females compared to males except for the Rectus Femoris (RF). BMD assessment showed there were no significant variations between males and females. Conclusion: This study demonstrated excellent repeatability for measurements of maximal isometric muscle contraction of knee extensors and ankle plantar flexors, lower limb muscle volume and BMD. There were significant variances of muscle strength and volume between males and females.

Keywords: Diabetes Mellitus, Vitamin D deficiency, Muscle function.

Abstract No. 900: Genotypic and phenotypic characterisation of a glyoxalase 1 mutant mouse

Alaa Shafie, Mingzhan Xue, Paul J Thornalley and Naila Rabbani
Medical School, University of Warwick
dralaashaf@hotmail.com

Glyoxalase 1 plays an important role in the metabolism of reactive dicarbonyl metabolites, glyoxal and methylglyoxal, to less reactive products and prevention of dicarbonyl-derived advanced glycation endproduct formation. Glo1 deficient mice and Glo1 overexpression transgenic mice provide valuable models to study controlled change in extent of dicarbonyl glycation in mammalian systems. The aim of this study is to characterise the genotype and phenotype of the Lexicon Glo1 mutant mouse. The Glo1 mutant mice (+/- breeding pair), Glo1Lex were obtained from the European Mutant Mouse Archive, Heidelberg, Germany. We maintain a colony of Glo1Lex heterozygotes and sibling wild type controls. The mice were produced by Lexicon Pharmaceuticals, Inc, USA. In a C57BL/6 genetic background, mutation was produced by retroviral insertion of a DNA cassette between coding exons 1 and 2 (LEXKO-1493). Genotyping Forty-four offspring were genotyped from ear punch samples. Tissue activity of Glo1, Glo1 protein expression and mRNA expression were analysed. Glo1 copy number was also determined in this model. In the genotyping of Glo1Lex mutant mice we found only Glo1Lex (+/-) heterozygote and wild

type siblings. No homozygous Glo1Lex (-/-) mice have been born to date. No significant impairment in fertility was found for Glo1Lex (+/-) mice. The activity, Protein and mRNA expression of Glo1 was not significantly different between wild-type controls and Glo1Lex (+/-) mice ($P<0.05$, Mann Whitney-U). The copy number analyses showed increased Glo1 copy number in Glo1Lex (+/-) in all analysed tissues with at least one extra copy when compared with WT. Glo1Lex mutant mouse appears embryonically lethal for homozygous inheritance; cf. mutant human GLO1 gene with no viable homozygous offspring. It has normal Glo1 expression in Glo1Lex (+/-) heterozygotes with normal fertility. The mutant mouse appears to have been incorrectly genotyped in preliminary characterisation by the originator.

Keywords: Glyoxalase 1, methylglyoxal, knockout mouse, functional genomics.

Abstract No. 901: Sporopollenin Exine Capsules in Advanced Drug Delivery

Farooq Almutairi
Molecules for health research group, Chemistry department., Hull University, UK
dr_farooq2000@hotmail.com

Sporopollenin is one of the most extraordinary natural polymers that have been known until now. The sporopollenin exines capsules have been used to encapsulate different materials, such as lipids, enzymes, vitamins, drugs and even living cells. Also, it has been known that sporopollenin exine capsules can resist different harsh environments and release their contents into bloodstream. In this study, we are trying to understand the mechanism of drug release from the capsules and the factors that affecting it. This includes studying the chemical nature of sporopollenin exines towards different pH , hydrophilic/ hydrophobic drugs, and discovering the novel bioadhesive properties that sporopollenin capsules possess.

Abstract No. 906: Magnetic Nanoparticles for Imaging: Conjugation and Receptor Targeting

Neazar Essam Baghdadi
University of Hull
Naaj-neazar@hotmail.co.uk

There are many imaging techniques that can provide spatial information about disease and physiological activities of the human body. No single technique offers functional, structural and molecular information in one imaging modality. Incorporating two or more different imaging modalities in one scanning device will provide a significantly improved ability for disease diagnosis and therapy selection, for example PET/MRI. Magnetic nanoparticles (MNPs) are one of the best candidates to be used as new diagnostic and therapeutic tools or as a probe for multimodal imaging and treatment of various diseases. MNPs potentially could be used as targeted drug and gene delivery vehicles by attaching various biomolecules on their surface. MNPs surface can be modified for targeting specific sites in the body. MNPs have the ability to be controlled and manipulated externally by using magnetic fields. MNPs could offer hyperthemia treatment by heating up the site of disease using external stimulus.

Abstract No. 924: What are the real life complexities for the continued use of antipsychotics in dementia?

S. Almutairi
School of Pharmacy, University of Reading, UK

Background: When antipsychotics are used to manage the behavioural and psychological symptoms of dementia (BPSD), it is at the increased risk of serious side-effects such as stroke and death.[1] despite warnings guidelines recommending prudent use, antipsychotic prescribing in dementia continues.[2] this study aimed to interview healthcare professionals to understand and explain the complexity of factors that contribute to the continued prescribing of antipsychotics in BPSD. Method: Qualitative semi-structured interviews were carried out in 2012 and 2013 with five psychiatrists, two geriatricians, five General Practitioners, seven community psychiatric nurses, two pharmacists, one memory clinic nurse, one social worker, and five care home managers recruited from Berkshire, UK. Grounded theory approach was used for data analysis. Result: A detailed theory was developed, explaining why antipsychotics continue to be prescribed in dementia. Four thematic categories emerging from the data were integrated into one core category named 'Jam today: taking a chance to keep the peace' that accounts for the continued prescribing of antipsychotics in dementia. BPSD is problematic, and health professionals hold a genuine belief that antipsychotics are a viable option for managing BPSD. Furthermore, not many doctors report encountering negative consequences in patients prescribed antipsychotics. In some instances potential risks with antipsychotics are overlooked in favour of perceived benefits. Resource deficiencies and the consequent practical difficulties with undertaking reviews and implementing guidelines, the lack of coordination among health professionals and the inability to provide alternative management including non-pharmacological treatments are all important influencing factors that have to be weighed against the clear existence of a patient with BPSD. Conclusions: Due to lack of experience with effective alternatives and weaknesses in the system work, doctors rely on their heuristics about antipsychotics in dementia, which might not include detrimental side-effects, so they continue to prescribe antipsychotics for managing patients with dementia as a way of maintaining order.

Abstract No. 942: New anti-trypanosomal active prenylated compounds from African Propolis

Sultan Almutairi, Ruangelie Edrada-Ebel and David G. Watson.
Strathclyde Institute of Pharmacy and Biomedical Sciences (SIPBS), University of Strathclyde
alsa7er418@hotmail.com

Introduction- Propolis, a product from honeybees, is a resinous material composed of beeswax and resin obtained from plant secondary metabolites, Propolis has been used as folk remedy by human since ancient times for many diseases. In this context, our study to investigate the effect of propolis on Trypanosoma brucie, which is the etiologic agent of sleeping sickness or HAT, an endemic parasitosis in sub-Saharan African infecting 500,000 people and will die if left, untreated. Methodology- Propolis sample (S87) was extracted by stirring with a magnetic stirrer for three cycles with acetone and methanol. The obtained extract was subjected to liquid-liquid fractionation by partitioning between EtOAc and water. The ethyl acetate was dried to yield a sticky material (28.5 g). This was then initially fractionated by Flash Chromatography to provide nineteen fractions these fractions were tested for inhibitory activity against T. brucei. Fraction F9 and F13 were found to be most

active. Fraction 9 was purified by using semi preparative HPLC with silica gel column to yielded compound 1.whereas, Fraction 13 was further purified with the Grace Reveleris® iES Flash Chromatography. This furnished thirteen fractions and fraction 11 which was the compound 2. Their structures were determined by HRESIMS and NMR spectroscopy. Results- two new compounds were found in Ghanian propolis which was formed via geranylation and prenylation of tetrahydroxy stilbene was evident. Both new geranylated stilbenes were isolated from ethyl acetate extracts of African propolis had moderate activity against T. brucei brucei.

Keywords: Propolis / Geranylated Stilbene / Antitrypanosomal Activity / NMR / HRESIMS.

Abstract No. 957: The Role of TRIB3 and Activation of p38 MAPK and Akt in Murine Neutrophil Function in TRIB3-/- Mice Compared to C57B6

Jihan Mesfer M Al-Ghamdi
The University of Sheffield
jmalfhdan@gmail.com

Background: Neutrophils migrate to sites of inflammation by a process known as chemotaxis. They are exposed to many different chemoattractants. This study built an understanding of tribble-3 (TRIB3) action in the context of the effect of KC (keratinocyte-derived cytokine, the murine homolog of GRO-α) and fMLP (formyl-methionyl-leucyl-phenylalanine) on p38 MAPK activation in murine neutrophils. It also discussed the impact of TRIB3 on murine neutrophil migration in response to KC and fMLP. Methods: Activation of isolated murine neutrophils through p38/MAPK was studied between 0-60 minutes using diverse physiologically relevant stimuli (10-6 M KC, 10-6 M fMLP). Activated cells were lysed and the activation of p38 MAPK was detected by western blotting. The role of TRIB3 on murine neutrophil migration in response to KC and fMLP was evaluated by incubating C57B6 and TRIB3-/- neutrophil groups for 1 h at 37 ˚C on filter membrane and the chemoattractant in the lower chamber of chemotaxis plate at increasing concentrations. Results: The data have shown that the exposure of isolated murine neutrophils to KC and fMLP activated the p38/MAPK signalling pathway at 15 and 30 mins time points, with the signal then decreasing at 60 minutes in C57B6 and TRIB3-/-. Thus, no difference was observed between both groups for either chemoattractants. Also absence of TRIB3 had no significant effect on neutrophil migration whether cells enhanced by KC or fMLP. On the other hand, there was a trend to an increased response towards KC at 10-5 M, and at 10-6 M and 10-7 M towards fMLP in TRIB3-/- mice compared to C57B6. Summary: TRIB3 may not control activation of neutrophils through p38 MAPK. Furthermore, this study propose that neutrophil migration towards some chemoattractants, KC and fMLP, is dependent on various signalling pathways such as p38 MAPK and PI3K, which could be regulated by TRIB3.

Abstract No. 961: Microbial study of milk bottles for children with Diarrhoea

Rahmah B. Alghamdi*, R. Altyar, R. Alrhialy, D. Allehaby, H. Althagafy, R.Almansory and Maria Alzahrani
Umm Al-Qura University, Saudi Arabia
rahmah.g@hotmail.com

Recently, it has become essential to protect children from many types of diseases, especially those that are caused by contaminated food. It is commonly appreciated that babies' main sources of food are breastfeeding and bottled milk. However, awareness of the potential for infection from the bottles is very low among mothers. Usually, most parents rely on sterilization instructions when cleaning their baby bottles, but they are rarely aware of the presence of unwanted microbes. This lack of awareness may be due to their lack of knowledge or their ignorance of hygiene, especially regarding milk bottle contamination. Therefore, this research is focused on studying the presence of microbes in the milk bottles used for children with Diarrhoea. It is intended to discover the presence of microbes in the bottles and to assess how effective the cleaning process is at completely removing the microbes, thus saving the lives of babies. In this research the proposed bottle cleaning regime is as follows:

1. Wash with soap and water.
2. Rinse thoroughly six times with water.
3. Rinse again with distilled water.
4. Place the bottle in one litre of boiling water with 1/2 teaspoon of added salt for 15 minutes.
5. Remove from the water and drain.

Following the use of this washing method, the normal technique for observing the presence of microbes was applied in four different experiments:

1. Durham test tubes
2. A lactose nutrient agar environment.
3. A lactose nutrient agar environment in petri dishes
4. A MacConkey environment

Based on this study, it can be concluded that the lower temperature when storing and adding disinfectants, the lower microbial growth will be.

Keywords: Microbe, Diarrhoea, contaminated food, Petri dishes and MacConkey.

Poster: Aviation and Transportation

(Short Abstract only)

Abstract No. 481: What Does Influance Airline Ticket E-Purchase in Saudi Arabia?

Saleh Bukhari, Ahmad Ghoneim, Charles Dennis
Brunel Business School, Brunel University, UK
Lincoln Business School, University of Lincoln, Lincoln, UK,
Saleh.Bukhari@brunel.ac.uk, Ahmad.Ghoneim@brunel.ac.uk
cdennis@lincoln.ac.uk

There is a lack of research in the area of online consumer behaviour towards the online services provided by airline companie s. This study aims to measure consumers' electronic satisfaction and intention to purchase tickets from Airlines websites. To obtain the study objective, a conceptual framework is developed based on literature pertaining to e-consumer behaviour, web quality, and travel and tourism streams. A detective quantitative methodology was chosen to examine the constructs and the relations within the framework. An online survey targeting actual airline online users (travellers) in the Kingdom of Saudi Arabia is developed with items covering 9 constructs: Information Quality, System Quality, Perceived usefulness, Perceived ease of use, e-Trust, Airline reputation, Price Perception, e-Satisfaction and Intention to Purchase. Data collection is completed with the help of the two airlines operating in Saudi Arabia. Data Analysis has been done using Structure Equation Modelling (SEM) to test and validate the framework. Findings will help decision makers within airline companies to understand their customers' online behaviour.

Keywords: online consumer behaviour, web quality, airline, e-ticketing, Travel, Aviation.

Poster: Business and Economics

(Short Abstract only)

Abstract No. 44: Does Social Commerce Work for Saudi SMEs?

Salma S. Abed, Michael D. Williams and Yogesh K. Dwivedi
Center for e-Business Research
Business School, Swansea University, UK
717185@swansea.ac.uk; m.d.williams@swansea.ac.uk;
y.k.dwivedi@swan.ac.uk

The concept of Online Social Media (OSM) is at the top of agendas for many businesses. Decision makers try to identify ways in which companies can benefit from OSM, such as Facebook, Twitter, and YouTube (Brengman and Karimov, 2012).In contrast, small and medium size enterprises (SMEs) are critical for the economic performance and development of any country (OECD, 2004).Implementation of e-commerce by SMEs in the Kingdom of Saudi Arabia (KSA) would not only improve their own financial health, but could contribute substantially to the growth of the national economy. However, there is low rate of e-commerce adoption by Saudi SMEs (Dutta&Coury, 2002). Existing research suggest that SMEs use of information technology (IT) based systems and applications such as electronic commerce (e-commerce) is generally constrained by limited resources (Scupola, 2009). OSM offers opportunities for SMEs to implement and/or promote e-commerce based applications in a cost effective manner. However, there appears to be very limited or/no research examining the role of OSM on the adoption of e-commerce by Saudi SMEs. It is within this context this study will: (1) Examine the role of online social media on the adoption of e-commerce by Saudi SMEs; (2) Determine Saudi customers' preferences for different channels in information searches and the purchasing stage from websites with social media integration; and (3) Investigate Saudi SMEs owner/business managers' attitudes toward social media websites. The research methodology involves literature review and questionnaire surveys that will be sent to online customers besides content analysis to SMEs websites. The purpose of this study is to provide SMEs with tools and techniques that should help them to overcome e-commerce adoption barriers, and create new business opportunities by integrating OSM. It will provide essential data about the role of OSM on the adoption of e-commerce by Saudi SMEs and fill a literature gap.

Keywords: E-commerce, Online Social Media, Small and Medium Size Enterprises, Saudi Arabia.

Abstract No. 54: Implementation of ERP Systems in Government Services: a Case Study of Registration of Birth in Saudi Arabia.

Amel Alotaibi
School of Management, University of Southampton
ajale122@doton.ac.uk

An ERP system is an integrated software solution that is designed to assimilate various business processes and is implemented for the purpose of enhancing the synchronisation that exists between different organisational departments. In general, an e-Government is defined as one where the production and distribution of services by the government is promoted electronically. The birth of the child is registered in the hospital of birth in Saudi Arabia and a notification certificate is made available to the parents. Following this, the parents make an appointment with the Ministry of Interior to submit the certificate and then obtain the social registration certificate. The social registration certificate plays an important role in future paediatric services and vaccination schedules. This registration process is to be done in person even if the appointment can be obtained through online registration facilities. The

purpose of this current study is to examine the advantages and barriers of the current e-services available to citizens and employees of the two ministries. The study also aims at arriving at recommendations for a proposed integrated healthcare and birth registry using ERP in Saudi Arabia. This study adopted a primary data collection approach using questionnaire and interview as the data collection tools. A total of 300 citizens and 15 employees were reached and their opinion identified. It is identified that the current system has a large number of errors, increases the workload of employees and largely contributes to the duplication of data and duplication of work. In line with this view, the new system is proposed to be implemented. However, before the system is to be implemented, other factors including employee training, security, citizen requirements and a simplified process are to be addressed.

Abstract No. 57: Financial development and economic growth in an oil-rich economy: The case of Saudi Arabia

Nahla Samargandi
Department of Economics and Finance, Brunel University, UK
Department of Economics, King Abdulaziz University, Saudi Arabia
nsamrgandi@kau.edu.sa

In this paper, we explore the link between financial development and economic growth for an oil-rich economy, Saudi Arabia. Countries whose economies are dominated by oil or other natural resources possess specific features not shared by industrialized or developing economies. Large share, often lion's share, of economic activity is represented by resource extraction, characterized by low added value and often by high degree of state regulation. Moreover, economic dynamics are predominantly determined by the prices of natural resources at world markers rather than by domestic economic developments. To the best of our knowledge, our paper is one of the first studies to specifically consider the role that financial development plays in a resource-dependent economy, and the potentially different effects that it may have on the resource-extraction and conventional sectors of such an economy. To this effect, we collect time series data from 1968 to 2010 and apply an ARDL bound test approach to cointegration to examine the long and short-run impact of the financial sector on economic growth. Furthermore, we deviate from the usual approach by using principal component analysis (PCA) to build a single composite indicator of financial development. We follow Ang and McKibbin (2007) in constructing a single measure of financial development by using principal component analysis. We collected information on the following three indicators of financial development:

1.The ratio of broad money (M2) to nominal GDP.
2.The ratio of liquid liabilities (M3) to the nominal GDP.
3.The ratio of credit to private sector to nominal GDP.

Our findings indicate that financial development has a statistically significant and positive effect on the non-oil sector only. In contrast, the effect on overall GDP is negative, although not significantly so. We consider this an important result, not only from the perspective of an oil-rich economy, but also in the general context of the financial development-growth debate.

Keywords: Financial Development; Economic Growth; ARDL Method, Saudi Arabia.

Abstract No. 83: The relationship between the Enterprise Resource Planning (ERP) systems and internal control: Case of Saudi Arabia

Hani Shaiti, University of Bedfordshire, UK
Hani.shaiti@beds.ac.uk

Internal control is one of significant process which is design to enhance the operation efficiency, promote reliability of the financial information, and ensure the compliance with applicable laws and regulations. However, the literature in hand had identified a gap in the area of internal control procedures (ICPs) and especially the area of the relationship between an integrated information systems, such as Enterprise Resource Planning system (ERP) and ICPs. The aim of this research is to investigate the effect of ERP systems success in providing adequate effective ICPs. In order to explore this relationship, this research had identified three propositions derived from the existing literature. First proposition address the relationship between ERP success and the research's contingency variables (strategy, structure, size, management support, organisational culture, ERP band and the maturity). Second proposition refers to the relationship between ICPs and the seven contingency variables. Last proposition outline the impact of ERP systems success on ICPs. Preliminary result based on exploratory study found that different companies follow different requirements and that mainly depends on ownership. Generally, it found that ERP systems have reduce the cost, increase producing results and reports, reduce the errors, and interestingly improve ICPs. However, the impact of ERP system can be different from company to another. The study concludes that further quantitative study is requires to explain the impact of ERP system success on ICPs and to measure the effect of the seven contingency variables.

Keywords: ERP system success, internal control, Enterprise Risk Management, contingency variables.

Abstract No. 123: Cross-cultural Insights into B2B Relationship Marketing: A case study approach With Special Reference to Saudi Telecom Company

Waheed Baghdadi

Saudi culture has a significant impact on relationships in B2B marketing in business, especially in the telecommunications industry, where both the majority of clients and employees are Saudis. The imperatives for change and adjustments in Relationship Marketing (RM) will provide tremendous benefits to Saudi Telecom Company (STC) in particular, which as a key company in Saudi Arabia is a good example of B2B relationship marketing. Marketing strategies in the Middle East do not sufficiently address cross-cultural issues; therefore, a study that develops a preliminary framework and cross-cultural B2B marketing, especially in Saudi Arabia, is urgently needed. This work contributes to cultural impact theory by extending cross-cultural models which have been developed in a business-to-consumer (B2C) context to understand cross-cultural theory in a B2B context. Data are elicited by qualitative in-depth interviews with 35 STC senior managers to explore how a growing organization absorbs cultural awareness into its B2B relationships. This research aims to examine the role of culture in the building of B2B marketing relationships between STC and its partners. The investigation adopts a case study research strategy approach to explore how a growing middle-eastern telecommunications company assimilates cultural awareness and makes it an important component of its B2B relationships.

Keywords: Cross-cultural, B2B Relationship Marketing, Saudi Telecom Industry.

Abstract No. 136: Examining the Relationship of Organisational Culture and Leadership on IS Implementation

Sarah Basahel
Sarah_basahel@hotmail.com

Customer Relationship Management (CRM) is being increasingly adopted by organisations around the world, however; many firms fail to achieve their objectives with CRM implementation and the primary cause of this failure has been cited as cultural issues. Researchers have been giving increased attention to the social aspect of CRM particularly with respect to its impact on the employees. CRM implementation is a change project and several change project models have included leadership factors as critical variables in facilitating change. However; the linkage between leadership and IS implementation has largely been ignored by the IS implementation researchers. This research aims to fill this gap. This research aims to investigate how leadership and culture together effect the implementation of CRM and provide a conceptual framework, which integrates cultural and leadership aspects with CRM implementation. This framework will be useful for researchers and practitioners to develop more effective CRM implementation strategies.

Keywords: CRM, Implementation, leadership, proiect models, IS

Abstract No. 147: The effect of colour in printed advertisements on consumer's perceptions and its impact on the power of marketing among saudi arabia and united kingdom

Dina Saleh Al-Ghamdi

Aim: To examine the role of colours in printed advertisements in the UK and Arabic Gulf region, to find out whether colour choices in advertisements determine the power of marketing. Objective: Discovering the patterns of colours used in advertisements in the UK and Arab Gulf region, Focusing on printed advertisements from magazines, newspapers, and commercial leaflets that address food and clothing as marketing goods, Highlighting the extent of colour's influence on determining marketing power due to certain cases and by studying certain printed advertisements. Methodology: Quantitative research design: A - Primary Data: Survey Questionnaire, Questions' format and layout: 1- close-ended questions with predefined answers. Sampling: 1- Participants are British & Saudi professionals that work in printed advertisement agencies. 2- Sample size around 89 participants. B - Secondary Data: Systematic Literature Review Different perceptions and interpretations of colours followed by different psychological associations with colours in advertising, Different cultures have different colour preferences and therefore, associate different colours with different connotations, meanings, and emotions, Cultural obstacles to the transfer of marketing messages through printed advertising can undermine the power of marketing, Representatives of Arabic culture from the Gulf region find warm colour schemes to be more attractive, whereas UK-based customers are more responsive to cool colour schemes. Concluding Remarks: Literature reveals that warm colours are preferred in Arabic Culture whereas Cold colours are preferred in British culture, The results also reflect significant differences in the colour associations with certain feelings and emotions in both cultures, and This research concludes by recommending that advertisers should understand the cultural colour preferences and prepare the advertisement accordingly whenever coloured printed advertisement is about to be introduced to a certain market.

keywords: Comparison of Colour, Advertising, the UK, the Gulf Region , Power of Marketing.

Abstract No. 169: The impact of social networking websites in developing consumer trust for small and medium businesses in Saudi Arabia

Emad Salem

Social media applications have opened a totally new avenue for the marketers of various companies to reach the customer. The proposed research focuses to study the impact of social networking websites in developing consumer trust for small and medium businesses in Saudi Arabia. In addition to this other consumer behavior variables (purchase intentions, customer satisfaction, and customer loyalty) are also added in the theoretical framework of the study. The well known brands and companies who are already known the by the consumer get a lot of likes and support on the social networking sites, but it becomes rather difficult for unfamiliar small and medium companies to market them to the consumer, therefore, the proposed study would focus on the unfamiliar SME's in Saudi Arabia.

Keywords; Social media, networking websites, consumer trust, small and medium businesses, consumer behavior, Saudi Arabia.

Abstract No. 188: Qualitative Research Process Using Abductive Approach.

Alrajeh, A., Fearfull, A., and Monk, E.
School of Business, University of Dundee
A.alrajeh@dundee.ac.uk

Purpose: Many less experienced PhD candidate have difficulty in research design. Choosing pure deductive or inductive approaches do not make the design of the research flexible. Since, the deductive approach for example suitable for testing theory and for well-developed research questions. However, in many qualitative researches, there are no agreements in the research questions or particular theories in the literature. Theories often do not include enough factors to be suitable to explain phenomena in other context. Therefore, a less experienced PhD candidate needs a flexible form of research design to tell a story. Since the understanding of the student is continually evolving, which leads the student to change the focus of the research and the methods of access to information. The poster aims to develop Dubois and Gadde' (2002) model, by dividing the search process into exploratory and explanatory stages. Methodology: The poster provides a research design that does not follow pure deductive or inductive approach, but it use abductive approach where it placed induction and deduction in a complementary rather than competitive context. The investigation starts with the recent discussions in the literature and ends with an explanation of the way the study has changed these discussions. The middle part provides the evidence for the development of the case and the theoretical points that have brought about the change in the literature. Results and a conclusion: The poster divided the research process into exploratory and explanatory stages. Using this research process a new PhD student can have a flexible design between deductive and inductive to tell the story of his/her thesis. The poster provides a helpful example of both theoretical development and a research process.

Keywords: Qualitative research, deductive approach, inductive approach, Abductive approach.

Abstract No. 203: An Empirical Research on Financial Risk Analysis of Sukuk Structures.

Mohammed Waleed Alswaidan
University of Portsmouth,
mhws1981@gmail.com

In the last decades, Sukuk founds its self the dynamic factor has been spots in financial industry. However, recently found that there are issues on its applications. This instrument is derived up by the Islamic Law which is basically defined Islamic finance as based in trade while the Conventional finance is based in debt. Therefore, due to recent recorded default of numbers of Sukuk there is highly needed to bridge the gap in Sukuk analysis. Thus, the poster purpose is focusing the association between risks profiles under Sukuk structures categories. Moreover, it presents the analysis by considering differences between Sukuk risk profiles on each type of Sukuk. It is particularly shows how different class of Sukuk has a different risk profile by selecting financial risk as an example of those risks factors. The Poster used Saudi Arabian Sukuk Market as a case study of this research. The research analyse Sukuk structures to four types: Assets based, Debit based, Equity based and Agency based. The methodology of research is follows a deductive approach by applying financial ratios such as Value at Risk, Duration and Year to Maturity enhanced it with statistic toolkit. The results show that although each Sukuk structure has the same risk factors but it has a different scale of those risk factors in terms of weighting it in the portfolio. This implies its impact on variance rate of financial performance at the Market. In conclusion, the value of this finding comes in order to bring help to investors and traders at Sukuk market by considering that a greater choice of Sukuk structure will help to mitigates risk exposure against increase the return. This implies the securities advantages in Sukuk instrument against Bonds investment in Global market.

Abstract No. 294: Fundamental Framework for Leadership Development in Saudi Arabian's Construction Sector (FLDC)

Mona Mohammed Aseri
University of Manchester.
United Kingdom

The Study focuses on leadership in Saudi Arabia and investigates leadership within the construction sector. The aim is to provide an evaluation of the current leadership and highlight the need and challenges leaders face in this specific region and sector of industry. The Region has a very growing and developing context at all areas of industry such as education, economic, social & construction. This development has increased the potential for greater leadership that must understand the changes and meet the needs. The result of this study could introduce a new leadership approach can be established to enhance leadership performance in Saudi Arabian's construction sector. The study has been conducted using a grounded theory approach that focus on primary data only & it is qualitative in nature, which can be obtained by observation and interviews. These methods support the chosen, open and emergent strategy that aim to explore the context and bring insight to new critical factors. The data collected to identify theoretical sampling and following a defined analytical process, while the data analysis within the qualitative process is both simultaneous and interactive (Creswell, 2009). It involves a multi-step process consisting of open coding, axial coding and selective coding (Meers, 2009). The software NVivo has been used to organize the vast amount of information collected, and to support coding process. The study has identified 12 actions to develop leadership within the Saudi Arabian construction sector, and organized

into 2 main clusters: Leaders Development & Leadership Developments. In conclusion, the FLDC represent critical findings & would highly advanced leadership practices. Although the study focuses on the construction sector in SA, Future studies are recommended to investigate and validate this framework within different industrial sectors.

Keywords: Leadership, Saudi Arabia, Construction;

Abstract No. 307: Harnessing Knowledge Management to Improve Performance within Saudi Organisations.

Rafat Amir
rafatamir@gmail.com

The key to understanding the development of competitive advantage is understanding knowledge and how it is managed and shared. Organisations not only need to understand comprehensively the concept of knowledge in order to manage it effectively, but also to create and maintain competitive advantages, especially as the business environment has become increasingly competitive. The aim of this study is to understand how the knowledge management (KM) concept can be harnessed as a vital factor in the enhancement of productivity, performance and the competitiveness of organisations. Grounded theory strategy has been used in this research, which provides in-depth information relevant to KM implementation. Data were collected from face-to-face semi-structured interviews with 24 top managers from 19 different top-ranking companies operating in Saudi Arabia. As a result of analysis of collected data, five major categories emerged: barriers to KM; organisational learning (OL); means of communication; critical successful factors (CSFs); and impacts of KM on organisational performance (OP). The most common barrier to knowledge sharing is the unwillingness of employees to participate and share their knowledge. Moreover, OL is very important and it helps organisations to sustain a competitive advantage and improve the employees' performance and efficiency by encouraging them to learn and share knowledge by creating a good learning environment. A well-structured communication system is a very vital factor for KM success because its role is to ensure and facilitate the passing of knowledge to the appropriate people. Moreover, it found that the most important factor influencing the success of KM implementation is the employees' willingness to participate in KM activities and share their knowledge. This implies that organisation that want to be a knowledge-based organisation by implementing KM activities need to improve the willingness of employees to participate in the project, otherwise it will fail.

Abstract No. 361: Implement Fama and French and CAPM Pricing Models in Saudi Arabia Stock Exchange (Tadwal)

abdulaziz aldaarmi
abdulaziz.aldaarmi@brunel.ac.uk

Some studies have found evidence that stock returns are predictable using micro and macro variables, others failed to find any support at all for the ability of certain micro or macro variables to predict returns. In other words, evidence of the predictive ability for a given variable has not always been found. The mixed results make it difficult to determine which particular micro or macro variables (if any) are reliable. Therefore, the problem of this study is to examine whether the predicting power of stock return can be improved in Saudi Arabia Stock Exchange (Tadwal) by using computer-based information systems (artificial networks). Moreover, this study argues the efficiency of Saudi Arabia Stock Exchange. If attempts to improve the predicting power of stock return in Saudi Arabia Stock Exchange

through the use computer-based information systems made the market inefficient, then there are two possibilities. This inefficiency may be due to the fact that it is an emerging market. Alternatively, the predicating power of stock return in Saudi Arabia Stock Exchange (SASE) cannot be improved by using the computer-based information systems. Aim: Is it possible to develop a model benefit the investors with non- financial expertises in forecasting stock prices? And thus help them in making decision process in the purchase and sale of stock.

Research Objectives:

1-Find the accuracy of computer-based information systems in predicting stock price movement for companies traded in Saudi Arabia Stock Exchange (Tadwal).

2-Compare the capital asset pricing model (CAPM) and Fama and French's three factor model to the predictive power of computer-based information systems.

3-To specify a model that may predict the stock return in in Saudi Arabia Stock Exchange (Tadwal) by applying the factor of CAPM model, and the three factors of Fama and French model.

Keywords: Implement Fama, French, CAPM Pricing Models, Saudi Arabia, Stock Exchange, Tadwal.

Abstract No. 375: Family Business Agency Problems, Ownership Concentration and Corporate performance: Theory and evidence from Saudi Arabia

Mohammed Saied Alghamdi

Agency costs, ownership concentration and firm performance are three constructs that have been extensively examined in the finance literature. In the Saudi Arabia economic structure there are a large number of family owned businesses, and the significant involvement of the Saudi government in the private sector (non family). In general, a limited number of studies have provided definitions of family firms in the context of capital market research. This research attempts to fill a research gap on the relationship between separation of ownership and control as well as ownership concentration, and firm performance in one of the emerging markets, Saudi Arabia. Saudi firms are mainly family-owned or state-owned. The research addresses the questions; 1) how can family firms be identified? 2) Do family owned firms perform differently? 3) How does separation of ownership and control affect firm performance? 4) Are agency costs in family firms more or less than those of non family firms? 5) How does concentration of ownership affect firm performance with comparing family firms to non-family ones? This study will be implemented through quantitative research. Quantitative research is based on secondary data obtained from the published annual statistical data on the financial reports and information on store price. To test the impact of agency costs and ownership concentration on firm performance, firms that are currently listed on the Saudi Stock Market Exchange (SSM) are used from 2006-2011, excluding non-financial firms. This study is important because the problem of agency costs has not previously been studied in the Saudi context, this study will also contribute more generally to understand agency theory in family business.

Keywords: Agency Theory, Agency problems in Family firms, Ownership concentration, Comparing Family, Non-family Firms.

Abstract No. 391: A Systematic Literature Review on Lean Six Sigma for the Manufacturing Industry

Saja Albliwi, Jiju Antony
Design, Manufacture and Engineering Management, University of Strathclyde, Glasgow, Scotland
s.albliwi@hotmail.co.uk

Purpose: Lean Six Sigma is a continuous improvement methodology that aims to reduce production costs, improve organisational capability, and maximise the value for shareholders.This research aims to explore the most common themes within Lean Six Sigma in the manufacturing sector, and to identify any gaps in those themes which may be limiting organisations from getting the most benefit from their LSS strategy. Design/methodology/approach: The following research is based on a Systematic Literature Review of 33 papers which were published on Lean, Six Sigma and LSS in the top journals in the field and other specialist journals, from 2000 to 2012. Findings: There are important themes cited in this paper such as Critical Success Factors (CSFs), benefits, motivation factors, limitations and impeding factors. The Level of LSS deployment are increasing, especially in large organisations in the US, UK and the Netherlands, and in some SMEs in developing countries such as India, and the number of available LSS publications is increasing accordingly. However, there are many gaps and limitations that need to be covered in future research. Originality/value: The paper is one of the first systematic literature reviews to explore the most common themes within Lean Six Sigma in the manufacturing sector based on top journals in the field.

Keywords: Lean Six Sigma, Themes, Manufacturing, Systematic Review.

Abstract No. 395: An Examination of the Relationship between Corporate Governance, Ownership Structure, Firm Characteristics and the Disclosure of Financial Reports

B. Al otaibi[1], S. Rasaratnam[2]
[1]The Business and Management Research Institute, University of Bedfordshire
[2] Department of Accounting & Finance , University of Bedfordshire

The purpose of this study is to examine the effect of corporate governance, ownership structure, firm characteristics and the level of voluntary disclosure of annual reports, determine the association among independent variables and the level of voluntary disclosure to reduce agency conflict and analyse the components of transparency in the financial reporting. Based on the theoretical and empirical literature reviewed, the theoretical framework for this study will developed together with the hypotheses to be test. SPSS will use in order to analyse data, Linear, multiple regression and correlation model will use to analyse the data collected. Based on the previous studies, the results expected from this study will be significant for ownership structure and firm characteristics. CG will not be significant with the level of voluntary disclosure because there is ignorance about CG there are many holding firms dominating the market; also the transparency is currently lower in Kuwait than in other GCC.

Abstract No. 457: The role of renovation, rehabilitation, and organisational culture in management accounting change

Musaab Alnaim
School of Management, University of Southampton

Management accounting change has become an increasingly popular focus of research. This is because of the significant changes that many firms have been experiencing in their organisational designs, competitive environments, strategy, organisational size and information technology. Numerous studies illustrate the importance of management accounting and its impact on organisational performance. Regarding the recent rapid development in the Saudi economy, this research will study the changes in management accounting using the Saudi Telecom Company (STC) as a case study. This study will be an attempt to understand how the management accounting system (MAS) evolved in the Saudi setting using the Saudi Telecom Company as a case study. In-depth studies such as longitudinal studies or case studies are needed to reveal detail insights regarding any change and the implications of these changes. The research methodology adopted in this study applied a qualitative method following the case study approach and utilised grounded theory, in the style of Strauss and Corbin to analyse data to enable a rigorous depth and width of investigation. The research relied on three main methods, interviews, supported by observation and documents. The investigation explored the reasons behind the changes in the MAS which were explained through the lens of a contingency theory perspective. The study further examined the changes that had been made in the MAS and determined how a change of culture renovation and rehabilitation of employees resulted in a successful adaptation of the MAS to improve organisational performance. The results indicate that new facilitator and supporter factors emerged. These factors helped the company to change smoothly, quickly and successfully. These factors are renovation, rehabilitation, and culture change. While previous studies evidence that internal and external factors cause evolutionary change of MAS, this study suggests additional factors which lead the company to revolutionary change its management accounting performance system (MAPS).

Abstract No. 486: Female employment in Saudi Arabia and the Gulf States (KSA & UAE); a case study of the hotel sector and the role of flexible working

SahamS Alismail
Business school, Birmingham University

Governments of the Saudi Arabia and the Gulf states are placing more emphasis on replacing the large number of foreign workers with nationals. Traditionally, females have not been encouraged to engage in work activities outside the home due to social values. However, the government aims to integrate females in the employment systems to meet the demands of developing economies. The purpose of the study: This paper goes on to explore the theories, concepts and previous research on the employee retention strategies, job satisfaction, and flexible working arrangements in general and within the hospitality industry. Flexible working is increasingly gaining importance, as many organisations are aware of the possible benefits for the business and their employees. This paper aims to suggest whether the implementation of flexible working arrangements can potentially encourage women in Saudi Arabia and the Gulf states (UAE) to seek employment. Methodology: The researchsample will consist only females working who are working in hotels in Saudi Arabia and UAE. The study will compare the influence of flexible working arrangements in UAE and KSA, and females with and without caring for children and/or adults responsibilities. Conclusion: Currently the level of female employment is low compared with many other

countries. This is due to the social, cultural and religious values of these countries. The responsibilities of caring for children and adults are also largely dependent on female family members. This research explores consideration suggests that the provision of flexible working arrangements could encourage more women to undertake employment, as this could enable them to maintain a balance between their work and family life.

Abstract No. 496: Organizational Justice Perceptions in Arab Context

Alotaibi, Majad
University of Portsmouth- Business School

Purpose – The present work aimed to explore the dimensionality of organizational justice in the Arab workplace and adopted both etic (identification of those criteria/rules that can be shared with other cultures) and emic (identification of those criteria/rules that are unique to the Arab World) viewpoints. Methodology –Considering the novelty of the territory and the fact that what was sought was identification of perceptive criteria qualitative methodology was the only route. Participants: Therefore, the research utilized interviews with 52 native Saudis (30 men and 22 women) who were employed in a range of occupations, hierarchical levels and on a full-time basis in a variety of industries. Findings– The findings illustrated important criteria of organizational justice (e.g. suppression of nepotism, lawfulness of organizational policy, consistency in distribution of rewards/punishment, compatibility with Islamic law, availability of information in the public domain, no use of threats and personal revenge, keeping promise). The newly identified criteria that appear to exist in the Arab but not in the "western" mindframe can be accounted for in terms of cultural characteristics. The findings also indicated that because of its interactional characteristics, interpersonal injustice criteria clearly were cited more as Saudi Arabia is a relatively interdependent culture. Further, the results showed that problems in management and policies are often experienced in a complex way, although employees making justice judgments do separate procedural and interactional factors. Conclusion: This research aimed to investigate the dimensionality of justice in an Arab context. It was found that it is essential not just to rely on the narrow set of justice rules in established measures when studying justice in Arab context. Also, interactional judgment includes all kind of relations and a broader concept of interactional treatment, which includes treatment beyond organizational procedures, is needed. This work serves to guide Arab managers towards a better understanding of the importance of organizational justice.

Abstract No. 530: A Framework to Develop Entrepreneurship Policies in Saudi Arabia

Saeed Algarny
Business School, University of Exeter
S.Algarny@ex.ac.uk

Entrepreneurship has recently gained considerable momentum in Saudi Arabia led by huge government support with tens of SAR billions of interest-free loans and the establishment of many initiatives and Start-up Business Support Centres (SBSCs). However, yet, there is no single government body specialize in managing issues related to entrepreneurship or even Small and Medium Enterprises (SMEs). And therefore, there are no government policies that aim to foster entrepreneurship in the country. The poster will describe the framework adopted by the researcher to answer the following two research questions:

- What are the appropriate policies to develop entrepreneurship in Saudi Arabia?
- How do we develop these policies?

Actually, we are following the entrepreneurship policy framework developed by Stevenson and Lundstrom (2001) but using a mixed methodology that consists of two sequential data collection phases (qualitative then quantitative). The framework includes six aspects as follows: 1) Entrepreneurship promotion. 2) Entrepreneurship education. 3) Start-ups' environment. 4) Start-up financing. 5) Business support services 6) Target group strategies. Furthermore, three different time horizons stages are set to differentiate between entrepreneurs' needs in each one of them, these stages are: pre start-up, start-up and after start-up. Moreover, the target group strategies aim to consider special needs for specific groups including: innovative, women, youth, unemployed, and graduates. In summary, the poster aims to explain the research's framework and methodology that used to answer the main research questions.

Keywords: Entrepreneurship, Saudi Arabia, initiative, support centre.

Abstract No. 540: Tourism and Talent Management: Implications for the Hospitality Industry in Saudi Arabia

Adel Alferaih
School of Business, Swansea university, UK
559570@swansea.ac.uk

The aim of this paper is develop a theoretical model to explore the dimensions of talent management (TM) such as organisational commitment, job satisfaction, recruitment, employee engagement, training, talent retention, turnover intention or intention to quit the job, and organisational performance and their relationships in the context of Tourism and Hospitality Sector of Saudi Arabia. A number of studies (e.g. Collings and Mellahi, 2009; Huanga and Tansley, 2012) have acknowledged the lack of theoretical development in the TM literature. Realising the research gap in the existing literature, this study will propose and evaluate a conceptual model to understand employees' turnover intention, retention, and organisational performance at large. The comprehensive review of 104 studies on TM indicated that majority of them are descriptive, conceptual, and literature review related research in this area. Only a handful of studies (in fact only eight studies) have attempted to develop and evaluate the theoretical model to understand the various dimensions of talent management. The development of conceptual model for this research is based on accumulating the scattered relationships between the different dimensions of TM practices across the limited number of theoretical studies in this area. The proposed conceptual model

will be validated using the data gathered from the employees of the Tourism and Hospitality sector of Saudi Arabia. The minimum targeted sample size of data collected would be 300. The collected data will be analysed using the statistical tool called AMOS 21.0 and SPSS. The structural equation modeling (SEM) technique will be used to understand the relationships between various TM and HR factors used in the model.

Abstract No. 636: The adoption and success of the human resource information system in Saudi Arabian public organizations

Wassan Alkhowaiter , Yogesh Dwivedi, Michael Williams
School of business, Swansea university, Swansea, SA2 8PP, UK
600715@swansea.ac.uk

The Kingdom of Saudi Arabia (KSA), which has the largest economy in the Gulf Cooperation Council (GCC), has experienced strong demographic changes which have affected not only its political stability but also its economy. In GCC countries including Saudi Arabia, the flow of foreign labour is seen to have a negative impact on the region's economy. Thus, developments are required in the Saudi human resource (HR) capability so that HR departments can perform their functions rapidly and with great accuracy, which could be achieved by adopting human resource information system (HRS) in the Kingdom's local organizations. Whereas the ministers in KSA such as (Ministry of Education) start to implement HRIS, yet none of these organization attempts to measure the effectiveness of their systems, or even know how to do. Therefore, there is a need to understand the factors that contribute to adoption and the success of HRIS. For the purpose of the present study, which aims to measure the adoption and success of HRIS, UTAUT (Venkatesh et al, 2003) adoption model and D&M IS success model (DeLone and McLean, 2003) have been integrated in order to identify the factors that influence these outcomes. Combining these two models produces a more comprehensive means of doing so. The proposed conceptual model is therefore based on constructs derived from combining both models. As a result 17 hypotheses. To understand the relationships between these factors in the proposed model the data will be collected from the 1400 employees in human resource department at the Ministry of Education in Saudi Arabia, which implemented HRIS in March 2011 at a cost of 120 million SR. The collected data will be analyzed using the structural equation modeling (SEM) framework and use AMOS 19 for data analysis.

Abstract No. 676: The Transmission of Monetary Policy in Malaysia Using Banking Lending Channel Comparing Conventional Bank and Islamic Bank.

Mohamad Husam Helmi and Ray Barrell
Mohamad.helmi@brunel.ac.uk

This paper aims to address the role of Islamic and conventional banks in the transmission mechanism of the monetary policy in Malaysia using monthly data from 2000:1 to 2012:7. The impact of monetary policy can be transmitted to the real economy through the banking system. This impact of the monetary policy on the real economy also depends on the structure of the economy. As far to our knowledge, no study has tackled these ideas before to examine the transmission of the monetary policy through Islamic and conventional banks using the Islamic deposit rate as the policy indicator. The methodology used is a VAR approach with Impulse Response Function (IRF) and Variance Decompositions (VDC). This methodology classifies the variable into two categories, endogenous and exogenous variables. We estimate 6 different VAR models in the levels following Fuller (1976). The findings confirm the existences of the bank lending channel only when the Islamic rate (PLS) used. One another

notable result is that the response of the money supply to shock in conventional interest rate or PLS rate is heterogeneous. The result shows statistically significant response of the output across the entire estimated models. The different of the effect of the conventional interest rate and the Islamic (PLS) rate confirmed also from the variance decomposition of the commercial loans. Conventional interest rate accounts for less than 1% of the shock to total commercial bank loans. On the other hands, Islamic (PLS) rate accounts for 3.73% of the shock to total commercial bank loans. This finding is consistent with the results obtained by the impulse response function.

Keywords: Monetary policy, bank lending channel, commercial banks, Islamic banks JEL Classification: E52.

Abstract No. 681: The Role of Operational Risk Management in the Growth of Saudi Islamic Banks

Bader Albader

The purpose of this research is to explore and critically evaluate the implementation of operational risk management and the role it plays in the development of Saudi Arabian Islamic Banks. The notion of Islamic financial institutions is to provide an alternative to conventional financial institutions, and to offer and run Shari'ah compatible financing, trading opportunities and investment. The study used direct interviews and the data collected from general managers working in Saudi Islamic banks. Various questions concerning the management of operational risk in Saudi Islamic banks will be developed during the literature review stage. The interviews focused on risks associated with day-to-day operations of Islamic banks, the existing strategies of their management and visions of their development, in addition to how the regulatory frameworks for risk management in Saudi Arabia can be developed to achieve its planning objectives. The researcher used case studies of the Islamic banks sector of Saudi Arabia. The researcher identified that Saudi Islamic banks have well management and protect against operational risks, despite that operational risks management is new in Saudi Islamic banks but proved that there are a good management dealing with these risks,. Saudi Islamic banks apply the application of Basel Committee supervision and apply the application of Saudi Arabian Monetary Agency (SAMA), the researcher provided that Saudi Islamic banks have approaches to dealing with operational risks, Saudi Islamic banks have business continuity plan and disaster recovery to dealing with event before happen. At the conclusion of research, included recommendation that may be useful as risk management in general, and particularly operational risk, which is a new department and some banks may not have this department. Therefore Saudi Islamic banks should carry out benchmarking practices with their counterparts in different countries who have successfully implemented the Islamic banking practices.

Keywords: Banking, operational risk management, Saudi Arabia.

Abstract No. 693: Fair Value and Islamic Financial Institutions

Talal Aljedaibi
Royal Holloway College- SACM
Department of Management

This research explores how fair value accounting is practiced and applied in Islamic financial institutions, what obstacles and barriers are already existing and how that would affect efforts of international harmonization of accounting standards. The first part of the study looked at the relation of fair value concept to the context of Islam. It was performed based on critically analysing the historical positions of Islamic jurisprudence on measurement and valuations. Among the objectives is the exploration of the use of fair value measurement as an international accounting issue in non-Western non-developed contexts, that is Islamic and developing countries. Islamic finance appeared as a new industry that has a different business model based on Islamic rules. In the other side, one of the most current controversial financial accounting issues is fair value measurement. Fair value is gaining considerable attention because of its specific ties to market conditions and related reliability concerns. An increasing number of financial institutions in different places in the world are adopting International Financial Reporting Standards where fair value is increasingly used as a measurement method for financial instruments. This research is intended to explore and document the reality of the potential intervention between these two paradigms. The specific problem that needs to be addressed is how an international accounting concept (fair value) fits the practices of a different-model industry (Islamic finance). The presentation will reflect the current progress of the research. It will address the research problem and research questions and what has been progressed up to date; and it will give snapshots on financial reporting in a Sharia-compliant environment and how that might affect the way accounting is performed.

Keuwords: Accounting, Saudi, Islamic Finance, IFRS, Banks.

Abstract No. 773: Corporate Failure: Evaluating The Factors That Lead To The Failure Of Northern Rock In 2007

Jeehan Almamy
School of business, Brunel University, UK
jeehan.almamy@brunel.ac.uk

The poster examines the financial circumstances that led to the failure of Northern Rock. Northern Rock was one of the largest UK mortgage lenders that had to shut down because of an accumulation of toxic assets. Irresponsible lending by this organisation meant that soon this organisation was not able to balance its financial books. A good understanding about the effects of bad lending can be evaluated through the use of Altman's Z-score model. This model gives signs of failure and identifies key variable that can be used to ascertain organisation's financial position. Quantitative data involving a 5 year comparative data of Northern Rock was evaluated to examine how the changes to key variables can affect the values of 'Z'. With such changes, suggestions are given about the issues to be considered by management when examining the signs of failure. This research proposes the possibility of including a new variable i.e V6, that highlights time difference between the first period and the last period (i.e the initial year and the present year) when data was considered. This variable will represent two time periods and the changes thereof in key financial instruments. The research recommends enactment of strict lending policies for the banking sector, increased information sharing among financial institutions (especially regarding the

creditworthiness of the consumers), and greater statutory oversight by Central banks on financial institutions as a way of curbing institutional malpractices. This study will contribute to the understanding of existing discourses on banking failure by examining key financial variables that can affect an organisation's financial stability.

Keyword: Altman model, FAILURE, Northern Rock.

Abstract No. 802: Business and Management Education

Ibrahim Alharthi
ibrahimhr@yahoo.com

Business and management as a field of study usually viewed as lower level discipline by different people groups. The study is to explore this view among different people groups. In depth interviews with students, academics, business practioners, families, and senior officials. Then analysed in discursive thematic analysis.

- Students are rating them selves less than other science students, most interviewed students chose to study business and management for their undergraduate study because it was the available option for them based on their high school and ability (Qudurat) test.
- staff member teaching in business and management are acknowledging their students view and delivering material with their students view in mind.
- other staff and higher level official rate business and management far beyond medicine, engineering, natural science (physics, chemistry, maths) but ahead of education...
- Interestingly, undergraduate business and management programs and under evaluated;

But MBA programs are popular and people from other disciplines value MBA programs and frequently interested in it. The research will move toward figuring out if the view of business and management as discipline affects or is affected by the practice of business and management, then if improving the view of business and management education (and discipline) is likely to lead improvement in business and management learning and/or practice or both. The method of the research is not yet finally decided. I might go with interactive questionnaires specially designed for each participant type, leading to specific and common questions. The questionnaire will avoid scaling by respondents but they will be asked sort different attributes.

Abstract No. 803: The Importance of Social Media Marketing in Building and Maintaining Customers' Trust and Long-Term Relationships

Ali Mohammed Algahtani
amsoliman760@hotmail.com

Social media marketing has currently become an important communication tool in the marketplace due to the significant usage by consumers around the globe. Relationship marketing is an important phenomenon in marketing and one of the cornerstones of it is trust. From the literature it seems that there is a lack of studies investigating the use of social media for relationship marketing, especially building trust, which facilitates to relationship marketing. This paper explores the importance of social media marketing to build customers' trust, from customers' perspective.

Keywords: Social media, relationship marketing, trust.

Abstract No. 812: Evaluate the Effectiveness of Different Models of Learning and Teaching as a Means of Delivering Management Development in MBA Programmes.

Jamilah Alokluk, Professor. Barbara Allan
Hull University Business School

Despite the increase in interest in research regarding blended learning on Business programmes, especially on MBA programmes, little attention has been paid to investigate the underlying pedagogies i.e. models for teaching and learning from the management prospective. Therefore my main research aim is to evaluate the effectiveness of the different models for teaching and learning, as a means of management development on MBA programmes. The main research aim can be divided into the following sub-objectives: (1) to identify and evaluate existing theoretical frameworks for learning and teaching in MBAs, (2) to critically examine three case studies of MBA programmes using the theoretical framework, (3) to develop (or adapt) a theoretical framework for MBA learning and teaching in the UK, and (4) to make recommendations to practitioners and managers of MBA programme to enable them to develop their practice. This doctoral research has focused on learning models offered by Khan (2001), Cookson (2000) and Wilde (2000). The literature review has identified research gaps (missing dimensions) in the three frameworks with respect to different learning and teaching models that may involve e-learning, blended learning, distance learning, and distance teaching. My case study research will be conducted in three different UK universities and, in alignment with the literature, this is based on a constructivist and interpretivist approach. Additionally, multiple approaches to data collection will be employed such as survey, interview, and documentary analysis. The project focuses on the experiences of students and staff in MBA programmes which involve e-learning programme (this may involve e-learning, blended learning, distance learning, and/or distance teaching). Through this research I am trying to explore the existing theories and framework for MBA learning and teaching in the UK.

Keywords: Blended learning, e-learning, distance learning, distance teaching, MBA programme, learning Models, constructive theory.

Abstract No. 824: Critical examination of Saudi Arabia as a destination brand

Abrar AL Sharif

Saudi Arabia invites more than 5 million religious tourists (pilgrims) to visit every year and takes pride in hosting the two holiest sites in the Muslim world. Nonetheless, the government also practices the Islamic precepts of protecting and sheltering guests. The nation has grown tolerant of, and ensures a “do not disturb” policy towards, foreign tourists who are eager to visit general interest sites such as the Red Sea coast, desert oases, mountain fortresses and ancient souks dating back to the days of Abraham . This study therefore seeks to fill the gap which exists in the prior literature by critically examine the branding of Saudi Arabia as a tourist destination from the perspective of the destination marketing organization (DMO). Interpretive case studies will be used to offer three different ways: firstly in the design and collection of data guidance; secondly through an iterative process of data collection and analysis and lastly as an outcome of the case study. In contrast to the secondary data collection, the primary data for the proposed research shall be gained through the process of semi-structured in-depth interviews. The sample of this research is drawn from within the four different categories of DMO (destination marketing organization) operating in Saudi Arabia. These are: National Governmental Agencies (NGAs) - responsible for country level promotion; Regional Development Agencies (RDAs) - responsible for

overall regional economic strategy; Tourist Boards (TBs) - responsible for tourism development; and Local Government Authorities (LGAs) - who work in partnership with RDAs and TBs. The thesis shall demonstrate how a developing nation, whose tourism industry is predominantly based on religious tourism and which is required to cope with a restrictive culture, needs to adopt fresh approaches to potential inbound tourism by creating a strong destination brand.

Keywords: Branding, Destination branding, Tourism development, Religious tourism, Foreign Tourist, Restrictive culture, DMO (destination marketing organization).

Abstract No. 871: The Impact of Saudisation Policy on the Employment of Women in the Saudi Private Sector

Abdullah Alothman
Business School, Plymouth University

A Saudi Arabia nation building has passed more than eight decades of hard working to shift the country from pure rural state to one of the most modern country, in fact, due to the sudden wealth generated from oil, the country encountered super-fast development which that had required more foreign labours to be imported due to the unavailability of local labour at that time, years later, the foreign labour has increased dramatically, which almost occupied the whole of the private sector casing greater issues to the government to cope with. Therefore the government has introduced an initiative of localization or what is commonly known as 'Saudisation' aiming to replace foreign workers with national ones. However, the attention of the policy was always been criticized as it did not achieve its potential objectives in the private sector (, moreover, the earlier stages of the policy were almost abandoned the female side as it was heavily focused on male improvements, nonetheless, the policy makers have recently changed their attitudes and started to increase the attention of the policy "Saudisation" towards women's to enhance their employment potential in the private sector. This research will explore the influence of Saudisation on women's employment in the private sector. The research will assess the positivity and negativity of such policy on women's employment, the research will draw the conclusion of that from a primary data collection from some government departments as well as selected organisations representing various areas of the private sector.

Abstract No 879: Efficiency and Shareholder value Creation in Gulf Cooperation Council (GCC) Banking Sector

Abdullah Ibrahim Al Ashikh
Aberdeen Business School,Robert Gordon University. UK
A.I.H.Al-ashikh@rgu.ac.uk

This poster illustrates the efficiency of bank's performance and its role in creating shareholder value in the GCC banking sector. To measure Bank efficiency, the study applied two different evaluation methods; the parametric Stochastic Frontier Analysis (SFA) and the nonparametric Data Envelopment Analysis (DEA). In addition, the study adopted value-added approach to identify banks inputs and outputs; Labour, Physical Capital and Financial capital are inputs, whereas demand deposits, total loans and other earning assets are outputs. The study sample consists of 43 commercial banks, 20 investment banks and 23 Islamic banks listed in all of the six GCC stock markets over the period 1997-2012. The rationale behind selecting this long period is to consider the major political and financial crisis that the region has witnessed. The overall results show that commercial and investment banks

outperform Islamic banks during political crisis, whereas the opposite occurs during financial crisis. Moreover, the results confirm that large and small size banks are more efficient than medium size banks in terms of overall technical efficiency. In the long run, the results show that Islamic banks create more shareholder value than its counterparts; conventional (commercial) and investment banks. To the knowledge of the researcher, this is the first study is to consider value creating with efficiency under the combined effect of political and financial crises on banking performance. Nonetheless, the GCC banking sector needs to be studied further with different sample, time period, and different evaluation methods to verify bank's efficiency and its role in creating shareholder value.

Keywords: GCC Banking, Bank Efficiency, Value creation, SFA, DEA and shareholder value

Abstract No. 909: The Impact of Foreignness on the Compliance with the International Standards for the Professional Practice of Internal Auditing

Eyad Alhendi
effbk@hotmail.com

Internal auditing is a long-established profession. It dates back as far as 3500 BC, with the books of a Mesopotamian civilisation. Early Egyptian, Chinese, Persian, Hebrew and Greek records also show evidence of internal control (Sadler, Fourie and Marais, 2008). In 1970 The Institute of Internal Auditors (IIA) was established to organise the profession. The IIA provides members with an International Professional Practices Framework (IPPF) to lead their professional practice and confirm the highest-quality internal audit effects in various environments. The goals of the Standards are to describe essential principles that characterise the practice of internal auditing, to deliver a framework for performing and promoting a wide range of value-added internal auditing, to create the basis for the assessment of internal audit performance, and to foster developed organizational processes and operations (IIA 2013). However, some researchers demonstrated many factors related to the lack of compliance with the International Standards for the Professional Practice of Internal Auditing related directly to the fieldwork of the profession (Burnaby and Hass 2009, Marais, Burnaby and Hass 2009), which can be controlled by the of board directors, executives or audit committee either in the short or long term. Examples of these factors are the number of years that the organisation has had membership in the Institute of Internal Auditors or the staff quality in the internal auditing department inside the organisation. Moreover, Abdolmohammadi (2009) claimed that there are personal and organisational variables behind the lack of use of the international internal auditing standards. This study is important because it assumes that solving the internal factors related directly to the organization or its resources is not the ultimate solution to compliance with the International Standards for the Professional Practice of Internal Auditing, mainly because if a particular organisation tries to adopt a certain strategy to eliminate negative effects associated with internal factors, there are complicated external environmental factors that may not be controllable.

Abstract No. 913: Business Strategy Implementation Drivers and Barriers: The Case of the Kingdom of Saudi Arabia

Moataz Alhilou
mahilou1982@yahoo.com

Introduction: According to Kaplan and Norton (2004) 70% to 90% of organizations fail to realize success from their strategy formulated. Many barriers were mentioned in the literature as possible causes for these failures. However most of these studies were from a western perspective and very limited research were done in emerging and developing economies and none in the context of Saudi Arabia (Hoskisson et al., 2000). Purpose of Study: Consequently this study has tried to identify the possible drivers and barriers for strategy implementation in the specific context of Saudi Arabia and find out how different is it from what is available in the literature. Methodology: In order to achieve this objective multiple case studies have been conducted in different organizations in the Kingdom of Saudi Arabia (KSA), and data were collected using semi structured interview. Both successful and failure case were analysed. Results: The results have shown that drivers and obstacles could be on a context, organizational, or individual level. Some of these obstacles and drivers were as identified in the literature but there were many other that were unique to the particular case of the Kingdom of Saudi Arabia. Conclusion: As it was anticipated in the literature there were differences between drivers and obstacles for business strategy implementation mentioned in the literature and those applicable for the Kingdom of Saudi Arabia.

Abstract No. 926: Estimating Efficiency and Productivity Growth of the Flour Mills of the Grain Silos and Flour Mills Organisation (GSFMO) in Saudi Arabia

Jaber Alyami, Dr. Stephen Ramsden, Dr. Paul Wilson
School of Biosciences, University of Nottingham
stxba6@nottingham.ac.uk,Stephen.Ramsden@nottingham.ac.uk,
Paul.Wilson@nottingham.ac.uk

The Grain Silos and Flour Mills Organisation (GSFMO) is one of the leading agricultural organisations in terms of food security. In addition, the organisation monopolises the milling industry in the Kingdom of Saudi Arabia. However, the organisation has been facing financial problems for a number of years. Also , there is a variation in the human and machine productivity between all branches, as well as rising costs over time. The aim of this paper is to estimate the technical (TE) of nine flour mills of the GSFMO (1988-2011), using Data Envelopment Analysis (DEA) and explain variation in efficiency levels between the mills. Productivity growth for 2008-2011 is also estimated. Both primary data (interviews with branch managers) and secondary data issued by the GSFMO were utilised. Presenting results estimated using DEA approach, this paper shows that under variable returns to scale (VRS) input orientated (output orientated) mean TE ranged from 93.16% (93.21%) to 98.77% (98.79%), and under constant returns to scale (CRS), it ranged from 91.72% to 97.63%. Regarding productivity growth results for the period (2008-2011), no consistent patterns were found across branches in the mean total factor productivity growth (TFPG), technical change (TC), and efficiency change (EC).

Keywords; Technical efficiency; Data Envelopment Analysis; Constant Returns to Scale; Variable Returns to Scale; Total Factor Productivity Growth.

Abstract No 966: Financial Development and Economic Growth in Sectors in Saudi Arabia

Ahmed H. Alabadi
Economics Department, Swansea University, UK
Saudi Arabian Monetary Agency, KSA
aalabbadi@gmail.com

The inter-relationship between financial development and real economy has received considerable interest in recent theoretical and empirical studies. However, how the dynamics of the finance-growth nexus applies to an oil-driven economy remains largely under-studied. To this end, this study utilizes a range of disaggregated data and suitable empirical methodologies in a new approach that focuses on the main economic sectors. Using recently developed panel data techniques, such as Westerlund's cointegration tests, Panel Dynamic Ordinary Least Square (DOLS), and panel long- and short-run Granger causality tests, in parallel with well-established time-series techniques for robustness check, this paper seeks to empirically investigate the interrelationship between banking sector development and the main eight economic sectors in the Saudi Arabia over the last four decades. The main findings of the study are that, firstly; a strong relationship between economic growth and bank credit is verifiable by panel and time-series cointegration tests which suggest that the finance and growth relationship is as important in oil-driven economy as in other economies. Secondly, the PDOLS results indicated a varying degree of impact for bank credit on the various sectors with the most pronounced being on the manufacturing sector. Thirdly, the causality tests results are in line with earlier literature on Saudi banking development that suggested Saudi banking followed the passive or "demand-following" approach. However, exception to that exists in the commerce sector where causality seems to also be running from bank credit to GDP. A number of aspects in commercial bank credit activities identified as unfavourable to the development of productive sectors, which usually require the commitment of long-term financing. This calls for intensified efforts to deepen and broaden the Saudi financial system and design banking framework that incentivise productive lending.

Keywords: financial development, Economic growth, Banking, Panel time series, PDOLS.

Poster: Education and Linguistics

(Short Abstract only)

Abstract No. 6: Understanding the learners' and tutors' perceptions about the Distance Language learning programme (DLLP), and its role in developing learners' autonomy: An Empirical study at King Abdulaziz University, Jeddah, Saudi Arabia

Maha Halabi, King Abdulaziz University, Jeddah, Saudi Arabia
egp10msh@sheffield.ac.uk

At King Abdalaziz University, Jeddah. The Distance Learning Deanship offers many courses for distance learners all around the Kingdom. English language learning (the focus of this study) is one of these on-line courses. The aim of this study is to find out how far tutors, who teach English language to distance learners, are themselves aware /familiar with the concept of autonomy. It will also explore the role of these tutors to promote their students' autonomy, and to what extent the tutors can perceive the role of the DLLP in promoting learners autonomy. learners will be also included in this study to find out how far are distance learners allowed to be autonomous in this context. To achieve the main aim of the study, the qualitative approach will be used. A number of 15 tutors who teach English language to distance learners will be interviewed. As there have not been many studies done in this field, this study is expected to provide the stakeholders with a clear idea of the problems and challenges which tutors may face as they try to develop learners' autonomy, and the suitable ways of solving these problems, because the introduction of distance learning at Saudi universities is comparatively new. Finally, I hope this study will be of a great help for tutors and specialists at the Distance Language Learning programmes in King Abdulaziz University in particular and at all other Saudi Universities in general.

Keywords: Saudi Students.

Abstract No. 10: The Rating of Fatigue Scale (ROF)

Abdulaziz Ali Al Salman, University of Essex, Colchester, UK
bojenan_1@hotmail.com

Perceived exertion scales represent how 'hard' an exercise feels but not how 'fatigued' an athlete feels. Measuring perceived fatigue may be advantageous in monitoring overtraining, tiredness in the build up to a race, between bouts of exercise or during recovery. These studies developed a rating of fatigue scale (ROF). METHODS: A 0-11 scale, 12 adjectives and 12 pictures were presented independently to 18 participants at 100 s intervals during a graded cycling test to exhaustion and 30 minutes during recovery. Blood lactate (BLc), oxygen uptake (VO2), heart rate reserve (HRR) and RPE were also measured. The five adjectives and pictures used to construct the ROF were the modal ones given by participants at the numeric points of 0, 2/3, 5, 7/8 and 10. ROF scores were correlated with various physiological measurements, RPE and time to exhaustion to ascertain validity. Various ratings of ROF face validity were taken from 95 participants, using a scale of 0 (low) to 4 (high). RESULTS: The ROF scale, established through modal responses, is presented in Figure 1. A strong association was found between ROF and RPE (r-mean= 0.992, $P<0.001$), time to exhaustion (r-mean=-0.993, $P<0.001$), percentage VO2PEAK (r-mean=0.980, $P<0.001$), percentage HRR (r-mean=0.974, $P<0.001$) and percentage BLcPEAK(r-mean=0.970, $P<0.001$). Face validity outcomes indicated the scale appeared to measure fatigue (3.5±0.6 vs. 3.6±0.6), the descriptors were useful (3.4±0.7 vs. 3.4±0.7), and the pictures were useful (2.7±1.1 vs. 2.7±1.1). CONCLUSION: ROF has good construct and face validity, and the scale has heuristic potential in terms of measuring and monitoring feelings of fatigue in both athletic and clinical populations.
Keywords: Education, Physical Education, Sport Science.

Abstract No. 51 Arabic Learner Corpus: A New Resource for Arabic Language Research

Abdullah Alfaifi & Eric Atwell, University of Leeds, Leeds, UK
scayga@leeds.ac.uk

This poster introduces the first version of the Arabic Learner Corpus (ALC), which comprises a collection of texts written by learners of Arabic in Saudi Arabia. The poster shows details about the corpus content, files format, and the corpus website which contains the entire corpus texts in different downloadable formats. It concludes with a brief description about the future work intended for developing this version of ALC.

Keywords: Arabic; Learner; Corpus; Texts.

Abstract No. 78: The Impact of Positive Views on Language Learning and Pupils' Construction of L2: Imagined Communities, Possible Selves, and Investment in Language Learning

Salwa Alharthi, The University of Sheffield, Sheffield, UK
queenofhope@windowslive.com

This paper is based on data drawn from PhD research investigating the relationship between language and identity. It specifically describes how a group of Arab Muslim female ESL pupils are motivated by their imaginings of the English language speaking community. In Saudi Arabia the education system concentrates on teaching, while identity and social aspects have only been given little attention. This paper seeks to redress this balance by exploring the impact of pupils' positive imaginings of the linguistic communities and of themselves in the future as members of those communities. I show how this investment works to promote their language learning. I use the concepts of imagined communities, possible selves and investment to illustrate the relationship between language and identity and how they impact each other. Further, I utilise sociocultural theory to explore how participants negotiate their identities as female Muslim Arabs who desire to be members of the imagined linguistic communities. In this presentation I illustrate my arguments using data drawn from focus group interviews and students' text messages, photos and drawings.

Keywords: sociolinguistics; second language and identity; imagined communities, possible selves and investment.

Abstract No. 103: An investigation of educational provision for students with dyslexia in primary schools in Jeddah, Saudi Arabia- an ethnographic case study

Layla H Alsharif , University of Birmingham, Birmingham, UK
layla.alsharif@hotmail.com

Even though the first verse in the Holy Quran says explicitly "Read", each year there are thousands of children in Saudi Arabia who fail to achieve their full potential in education due to difficulties in reading and spelling which can be attributed to dyslexia. British Dyslexia Association defines dyslexia as a specific learning difficulty that mainly affects the development of literacy and language related skills. The purpose of this study is to explore educational provision for primary school students with reading and writing difficulties in two primary schools in Jeddah, Saudi Arabia. The study draws on an ethnographic theory to interpret data in the case study. Data will be collected from students, teachers, parents and

other school staff using semi-structured interviews, observation, and document analysis from two schools selected through purposive sampling. Critical discourse analysis will interrogate and interpret policy documents to identify their inter-relationships and relationships with educational practices in the classroom and in teacher training / development. A modern software package – NVivo will be used, also thematic analysis will be considered to interpret the relationship between the participants around the policies provision and practices that shape educational experiences of learners with dyslexia. This study offers a unique educational perspective on this subject area as It will contribute to improve understanding of educational practices for students with dyslexia in settings of spoken and written Arabic with a view to enhancing academic progress of the individuals with dyslexia needs.

Abstract No. 142: A summary of Improving Reading in Arabic by Applying Sign Bilingual Methods

Najwa Abood Basonbul, University of Bristol, Bristol, UK
nbasonbul@hotmail.com

Despite popular misconceptions, reading is not a wholly visual process. Perhaps surprisingly, Deaf adults are often poor readers. The roots of this problem are in language, especially comprehension and vocabulary, and in the means of instruction used in schools. While educators worldwide have been exploring innovative programmes of sign language education, those in Saudi Arabia have not participated in this process. Yet mainstream education in Saudi values bilingualism. The task therefore is to find a means to introduce bilingual methods into Deaf schools. My research aims to apply Sign Bilingual Education (SBE), the policy of teaching Deaf children using two languages and cultures (Saudi Sign Language and Arabic; deaf and hearing) to Deaf schools in Saudi Arabia with a focus on improving literacy in Arabic. The research will evaluate the understanding of SBE among teachers, head teachers and educational supervisors and assess the factors that may hinder theapplication of SBE – in particular, the sign language fluency of educators. Mixed methods will be used to evaluate the use of SBE with Deaf children and to analyse understanding of SBE among teachers, head teachers and students at a school for the Deaf in western Saudi Arabia. Educational supervisors will also participate from the General Administration of Special Education within the Ministry of Education. In-depth semi-structured qualitative interviews, observation, self-completionquestionnaires and a literacy scale will be employed to collect data. A bilingual strategy for literacy will be tested using the Preview-View-Review approach and a new 'Scale of Literacy Achievement-Deaf' will be piloted. It is anticipated that the research findings will improve Saudi deaf education policy by providing a better understanding of Deaf children's academic and linguistic development. The research will harness the skills and enthusiasm of teachers who have already expressed interest in innovations in SBE within Deaf education.

Keywords: Sign Bilingual Education, Preview-View-Review approach, Deaf children, literacy.

Abstract No. 185: Children's Literature Translation Flow in Accordance with Saudi Sociocultural Norms

Hind Abdullah Alsiary, University of Leeds, Leeds, UK
mlhaa@leeds.ac.uk

The present study investigates the translation flow -translation exchange- between Arabic and English languages by analyzing the field of translation of children's literature in Saudi Arabia. The translation flow phenomenon has not been addressed well, especially in the English to Arabic context and precisely in the Saudi translation field. Analyzing the translation flow does not merely mean how many books have been translated into a specific language, but rather looks at the wider sociocultural context. Such as analysing the forces that hinder or facilitate the flow between languages. Toward this end, this study seeks to find the effective factors and translation norms that influence translation activities for children's literature in Saudi Arabia. Also, it seeks to map the field by collecting data of translated children's books that were published in the country and to create a bibliographical list of these books and situate any statistics extracted from the list within the wider sociocultural context. This list will be the first one of its kind in the English to Arabic children literature translation field. It will provide valuable and precise information on text selection and translation strategies in Saudi Arabia and will lead to some important findings about the historical development of children's literature and its translation in the country. It also will help to provide a view of the general trends of the translation flows and can also help future research in interdisciplinary fields such as children's literature, plus educational, social and cultural studies. The analysis of the translation flow of books is indispensable for understanding how translation works. And it will help to understand various phenomena from a sociocultural perspective, such as the relationship between different countries and cultures and reveal the complexity of cross-cultural communication. (Heilbron 2000: 11).

Keywords: Saudi, Scientific, Saudi Students, Saudi researchers.

Abstract No. 211: The Influence of Internet Use in The Classroom Environment

Saeed Alshahrani & Dr. Rupert Ward,
University of Huddersfield, Queensgate Huddersfield, UK.
Saeed.a.alshahrani@gmail.com

This study aims to investigate the impact of internet websites information on student lecturer relationship from the students' perspective. The impact of internet websites in this research focuses on and investigates social power in the classroom i.e. expert power and referent power and academic engagement i.e. academic self-confidence, academic reliance and connectedness. A mixed method approach was employed to collect the required data from respondents. This method included quantitative data to measure the impact and qualitative data to study the reasons behind the impact. To achieve these objectives, a questionnaire targeting undergraduate and graduate students was sent to 30 universities and educational organisations in Saudi Arabia. In total, 1361 valid responses were collected. Of these, 969 identified themselves as male, and 377 as females, while 15 did not specify their gender. Quantitative data was analysed using PASW and thematic analysis was used to analyse the qualitative data with results presented and discussed together. The findings of the study show that there is an impact on the student-lecturer relationship, when internet websites are used, in all tested criteria but at different levels. Results of this study show that the relationship gap between students and their lecturers is increasing due to website use by

students. The results also show that internet websites have impacted positively on students' academic engagement in the classroom.

Abstract No. 235: Parental perceptions of quality in public and private school In Riyadh City at Saudi Arabia.

Faisal Abdullah Alsuiadi, Hull Unvsitey, Hull, UK
alsuiadi@gmail.com

This paper seeks to examine the factors which influence parents' preferences for public schools or private schools. To this end, the researcher will identify weak points and strong points in both types of school from the perspective of parents in Riyadh, the capital City of Saudi Arabia. As far as the researcher has been able to establish, there has been no other study of this kind conducted in Saudi Arabia. It is therefore hoped that the finding of the research will provide a useful addition to the literature on private and public education and will also help the Saudi government in its future policy decisions

Keywords: Education – leadership, quality.

Abstract No. 289: Voices of the Gifted Girls in Primary Schools

Najlaa Bajaber, Reading University, Reading, UK
najlaa74@hotmail.com

At present, provision for gifted students in Saudi Arabia is focused on either pull-out programmes (where students are removed from mainstream classes and taught by a specialist teachers), or summer vacation programmes (Ministry of Education, 2013). Nevertheless, Alarfaj (2011) argues that the education system should enable gifted students to become well balanced both personally and intellectually within their regular classrooms. Researchers note the shortage of provision for gifted students and cite the need for further research (Aljegaiman, 2009; Alqifari, 2010). In particular, one gap is the voice of the students. This research focuses on the views of gifted girls in regular classrooms in Saudi Arabia on the teaching strategies used to meet their needs. To explore live experiences of gifted girls, the research selects the qualitative approach based on constructivism framework. In constructivism, the main focus is on the participants' views in the research under-study (Creswell, 2009). Innovative qualitative approaches, online Facebook diaries, were used. Facebook diaries was selected to appeal to the younger age group because it is a common social networking tool, and it gives the gifted girls the freedom to write in their own words about their feelings and thoughts, regarding the support and difficulties they face. Seventeen girls in the sixth grade, from eight primary schools in Riyadh participated in the research. Initial analysis of early thematic findings reveals a worrying frequency of boredom and a lack of engagement with the education process. It also shows few activities that the gifted girls are interested in. Furthermore, the results showed that the provision for gifted girls needs to be improved to meet their needs in the mainstream classroom by using several strategies which concentrate on thinking skills and higher thinking activities.

Keywords: Girls, Saudi Arabia, gifted students.

Abstract No. 298: Exploring children's conceptual understanding of astronomy: A social learning perspective

Fayadh Hamed Alanazi, The School of Education, University Of Aberdeen, UK
fayad81@hotmail.com

The purpose of this study was to explore Saudi children's ideas about astronomical bodies, drawing from the theoretical perspective of social learning. Narrative accounts of Saudi children's understanding of the concept of the Earth were collected in order to explore the impact of language and socio-cultural influences on pupils' learning. A socio-cultural model of learning in science education can provide for a more holistic approach to Saudi children's education. 30 children aged between 6 and 10, from six primary schools in the north of Saudi Arabia took part in the study. Semi-structured interviews including drawings and models were employed to explore the multi-faceted nature of children's understanding. The results showed Saudi children shaped their thinking about the Earth from different perspectives of physical knowledge, metaphysical knowledge and terrestrial knowledge.

Keywords: mental models, cultural meditation, Islamic worldview, social learning.

Abstract No. 325: A critical analysis of the discourse of conservatives in reference to the issue of women driving in Saudi Arabia

Khaled Alenazy, Langauge and linguistic department, Essex University, UK
alrsheedkhaled@gmail.com

Language is a significant tool that is used by key social actors to legitimize a certain social or political action. The process of legitimization can be either used to encourage a particular action, non-action or a mere ideological position. This study explores the way language is used by religious conservatives in opposing the practice of women driving in Saudi Arabia. To do so, we draw on Faircloughs' theoretical framework (2012) which gives primacy to argumentation in analyzing political discourse. Fairclough (ibid) claim that argumentation is the central linguistic practice employed in the process of legitimization. Hence, two frameworks were designed by Fairclough to analyze political discourse analysis; the first explains the structure of the practical argument while the second gives an insight into the process of evaluating the arguments. The framework that is concerned with the argument's structure will provide us with an insight into the moral system of those who oppose women driving by identifying the goals, mean-goals and values that ground their claim. The second framework that deals with the evaluation of the practical argument will offer an assessment of the arguments. This framework will help us test the reasonableness of these claims. . The analysis shows that most of the arguments that disfavor women driving were discriminatory and logically unreasonable. We believe that identifying the fallacious arguments of this discourse may contribute to the process of raising people's awareness, which would eventually lead people to take better-informed decisions

Keywords: Language and linguistics & sociolinguistics.

Abstract No. 336: The effects of using peer tutoring to prompting access students with autism to inclusive education in Saudi Arabia

Faten Alzaidi, University of Lincoln, Lincoln, UK
11251692@students.lincoln.ac.uk

The purpose of this exploratory research is to facilitate the development of inclusive education practices for autistic students among other students through a peer-tutoring strategy. Also, to identify the needs of primary schools for students with autism in Saudi Arabia and explore the effect of peer tutoring as a variable on the attitudes of teachers towards inclusion for students with autism. Hence, qualitative approach will be adopted to gather data. A semi structured interview with 20 teachers who are working with children with autism from five primary schools will be conducted. Finally, the study will provide twofold recommendations on theoretical and practical levels.

Keywords: Autism, peer tutoring, inclusive education and teachers' attitude.

Abstract No. 449: The Use of Metaphor in the Writing of Pre-Intermediate L2 Learners: A Pilot Study on Saudi University Students

Rawan Saaty, School of English Drama American and Canadian Studies, University of Birmingham, Birmingham, UK
rawansaaty@hotmail.com

Cognitive Linguistic studies have shown that metaphor shapes our perception of emotions (Kövecses, 2000). This has important consequences for foreign language (EFL) learners who need to use emotion metaphors like SADNESS and HAPPINESS in their writing. This study provides a piloting experiment testing the benefits and drawbacks of teaching 20 metaphoric expressions to 29 Saudi EFL university learners. It is the first of a series of classroom experiments on metaphor teaching. It compares two metaphor-teaching methods (Lakoff & Johnson's (1980) Conceptual Metaphor Theory or semantic clustering) to two groups of learners (CMT-Group & S-Group) to test whether learners are able to use metaphoric expressions for SADNESS and HAPPINESS in their writing. Little is known about the effect of CMT teaching on learners' metaphor development in Saudi EFL university classrooms. Also, not so much is known about the strategies learners employ to compensate lacking metaphoric competence. Analysis of writings from the CMT-Group versus the S-Group produced the following results: Taught metaphors constituted 30.9% of the CMT-Group's metaphor use with only 7.04% in the S-Group. Still, both groups used a considerably low number of metaphors (CM-G 5.92% & S-G 5.26% of total writing) indicating the need for explicit metaphor teaching in the Saudi classroom. Both groups used more open-class metaphors and conventional metaphors. Although the CMT-Group was more successful with taught metaphors, S-Group used more creative non-conventional metaphors. This could be a possible disadvantage of using conceptual metaphors to teach metaphoric expressions in the classroom. Finally, both groups used three strategies to compensate low metaphoric competence: Arabic transferred metaphors, hyperboles, and overt statements of lacking vocabulary. These compensation strategies emphasize the need for metaphor teaching in Saudi university classrooms. Subsequent work of this PhD will further investigate the effects of explicit conceptual metaphor teaching on creative metaphor use in Saudi university students.

Keywords: metaphor – Conceptual Metaphor Theory - metaphoric competence – foreign language teaching – metaphor creativity.

Abstract No. 477: Multi-Touch Surface Computing to Support Collaborative Reading Comprehension

Jaber Maslamani, Newcastle University, UK
jaber.maslamani@ncl.ac.uk

Little research has been carried out on the potential for language learning of multi-touch digital displays, which allows two or more users to interact simultaneously with the multi-touch tabletop computer. This paper presents the results a study of a collaborative strategic reading task carried out using a tabletop computer, focusing in particular on the role of scaffolding. Scaffolding as a means of enabling learners to achieve a goal or a level of understanding they might not have been able to achieve on their own has been investigated in teacher-student and student-student interaction, but there has been no detailed linguistic analysis of student-student multimodal scaffolded interaction during collaborative reading using a tabletop computer. Digital Collaborative Strategic Reading (DCSR) software was designed to provide multi-strategic and systematic instruction and practice with collaborative reading on tabletop computers. Students go through a number of digital reading stages: previewing, brainstorming, prediction, click and clunk, get the gist, and wrap-up. The paper addresses two questions: (1) what is the nature of scaffolding provided by learners during the collaborative reading task? (2) how do students deploy scaffolding behaviours for collaborative reading comprehension? Participants used DCSR on the tabletop computers in groups of four, for five sessions. Data were collected using audio and video recording of students' collaborative work and recording of on-(tabletop)screen activities. Data analysis revealed four main types of scaffolding behaviours: verbal, non-verbal, simultaneous verbal and non-verbal behaviours, and system scaffolding.

Keywords: Digital Collaborative Strategic Reading, learning scaffolding behaviour.

Abstract No. 523: The level of the Scientific Culture of science student teachers (SCOSST) at the natural science division in Teacher Colleges in Saudi Arabia

Sami Binjumah, University of Exeter, UK
arrsam@gmail.com

The major objective of the study is to investigate the level of the (SCOSST) at the natural science division in Teacher Colleges in KSA. For this reason, the study problem was defined in the following main question: Q what is the level of the (SCOSST) at the natural science division in the Teacher Colleges?
The question was divided into the following queries:

1) What is the general level of the (SCOSST) at the natural science division in the Teacher Colleges?
2) What is the level of the science student teachers on the dimensions of Scientific Culture standard?
3) Does the general level of the Scientific Culture (SC) of the sample individuals differ by their various colleges?
4) Does the general level of the (SC) of the sample individuals differ by their different cumulative averages?

This study will contained a theoretical frame that suited the study subject composed of three themes that are: (The formation of the science student teachers in KSA – preparation of the (SC). The data of this study will be collected from a sample of the science student teachers at the natural science divisions in all Teachers Colleges throughout the Saudi Arabia. A random

sampling technique will be used to select the study sample. The types of statistical analysis that will be used in this study:

1. Descriptive statistics (percentages, frequencies, means, and standard deviations) were reported for the variables of study.
2. Inferential statistics will be used by One-way ANOVA, which utilized to examine the significant differences between groups. In addition, Schafer and Tokay test will be used to carry out several comparisons within the groups (post hoc test).

Keywords: scientific culture.

Abstract No. 533: An Imbalanced Form-Meaning Link: The Case of Saudi EFL Learners

Hala Mohammed Alghamdi, university of Leeds
Hala.m.alghamdi@gmail.com

Developing a link between a word's form and its meaning has been considered the minimum requirement for knowing a word. This is because if a learner is fully aware of a word's meaning, but lacks knowledge of its form, recognizing or producing the word will not be possible. Similarly, if a form is familiar, but the corresponding meaning is not, the word will be of no communicative use (Schmitt, 2010). Thus, meaning and form are highly interconnected that rich knowledge of one, for example meaning, may be useless if no equal knowledge of the other, form, is acquired. However, to date, little attention has been paid to investigate whether L2 learners have corresponding levels of knowledge of both meanings and forms. This study compares the amount of knowledge learners have of form and meaning of 25 English words. The format of the form-meaning link test developed by Goldstein and Laufer (2004) was implemented in developing the instrument of the current research. Four subtests –form recall, form recognition, meaning recall, and meaning recognition- were administered to 32 Saudi female EFL learners. Their knowledge of word meanings, depending on their performance in the two meaning tests, was found to be almost double their knowledge of word forms, as their combined results of the two form tests indicate. This finding does not only reinforce Arabs' difficulties with vocabulary word forms. It also questions the validity of the implicit-learning approach to the acquisition of forms, advocated by Nation (2001) and others, when our goal is to help learners have equal knowledge of forms and meanings. The researcher aims to revive the explicit learning of word forms through the teaching of fixed spelling patterns in order to create a balanced form-meaning link.

Keywords: Vocabulary, EFL learning, Saudi EFL learners, the form-meaning link.

Abstract No. 538: Production and comprehension of the Aspectual/ temporal interpretations in Saudi L2 learners

Ruwayshid Alruwaili , York University, UK
Rnla500@york.ac.uk

A number of L2 studies have mainly focused on whether L2 learners can acquire target-like functional categories and features. These studies have tended to observe the surface realization of functional morphology. However, it has become clear that surface manifestation is not necessarily a good indication of L2 abstract knowledge (Lardiere, 2000; Prévost & White, 2000). Therefore, investigation of L2 learners' knowledge by observing the semantic consequences of functional categories and related features is of great significance. Hawkins (2009,p.220) pointed out that recent studies investigating learners' interpretations associated with functional category distinctions are heading into a promising direction of inquiry and redirecting the focus from the syntactic to the semantic reflexes of functional categories. Accordingly, this study extends this line of inquiry by examining temporal and aspectual contrasts in English by Saudi-Arabic speakers. Arabic has a perfective/imperfective contrast whereas English distinguishes between past/non-past (Comrie, 1976). Therefore, Saudi L2 learners of English have to move from one way of representing the aspectual / temporal contrast into another different representation. Aspectual/ temporal syntactic and semantic content is assumed to be the same between the two languages but they differ in their overt morphological realizations which are language-specific (Fassi Fehri, 2004). Therefore, the two languages share the same underlying representation, but they are different in the morphological configuration which determines which aspectual/temporal meaning is selected. Slabakova (2008) argued that functional morphology constitutes a relative difficulty for adult L2 acquisition and it is the bottleneck in particular mapping L2 morphemes to their related target meanings. Two different tasks were administered: an Acceptability Judgment task and a Gap-Filling task. The study was carefully designed to provide converging evidence about whether L2 interpretations are learnable or problems arise at the morphological level. The preliminary results from Acceptability Judgment task and Gap-Filling task suggest that functional morphology is the bottleneck and can account for the observed second language problems. They also will precisely test the predictive power of existing L2 theories by examining whether Saudi-speaking learners of English can acquire knowledge of temporal/aspectual meanings of morphological forms.

Keywords: Saudi-Arabic, Interface, L2 development.

Abstract No. 623: Saudi Students' Social Identities and Their Identity in Academic Writing: A Qualitative Study of Saudi Students in the UK

Sarah Taj, university of Leicester
sarah-r-taj@hotmail.com

Academic English writing requires students to be persuasive as they displays individuality, assertiveness, confidence and criticality as this establishes what is known as "identity in academic writing" Hyland (2005). Hyland (2012) sums academic writer's identity in the constructs of positioning and proximity. However, expressing positioning and proximity in academic English writing can be difficult for Saudi students for as their identities as writers has been established in a different academic system, they are expected to draw on discourse features and epistemologies different from what is available or appropriate in English. Shen (1989) suggests that learning to write is in fact learning the rules of the Anglo-American society including their values and ideologies. Indeed, as literacy is

ideological and not autonomous, meaning that it is shaped by the values and the culture of the context where it exists. Thus, in order for students to present an appropriate identity in their academic writing, they have to see themselves as part of their new societies and attempt to create for themselves a critical, individualistic and outspoken academic identity. Given the requirements of Academic English writing and understanding the background of the Saudi students, in this study, I adopt an "exploratory interpretive" approach to answer the following research questions:

1. How do the students construct their identity in academic writing?
2. How do the students perceive themselves in their academic community?
3. How do the students use or resist opportunities to interact in their academic community?
4. How are the students' social identities in the academic community linked to their identity in academic writing?

I have utilised multiple case studies approach as I look at the cases of six Saudi Arabian current postgraduate students in UK universities. This is a thorough and longitudinal study that looks at the students' progress through the regular interviews, examination of the students' written work and study diaries. The study is insightful as it looks at an essential requisite of successful academic English writing that has been particularly challenging for Saudi students studying in the UK and in western universities in general.

Keywords: Saudi Students Identity in Academic Writing.

Abstract No. 626: Exploring the impact of using Google Plus on developing English language learners' interactional competence

Haia Alzaidi, Newcastle University, UK
haia.al-zaidi@ncl.ca.uk

This study intends to examine the extent at which Google Plus can be used as an online platform for collaborative learning, in order to develop the learners' interactional competence (IC) in EFL virtual classrooms. Google Plus is a relatively new tool for online social networking. Many of the features within this platform have been specifically designed to facilitate and encourage collaborative interaction, whereby users can share information on specific topics of interest through audio or visual means, such as posts, voice notes and video broadcasting. In order to contextualise its use for the purpose of this research, one key feature has been selected: Google Hangouts. Conversation Analysis (CA) will be used as the methodological tool to analyse the data.

Keywords: Google Plus, collaborative interaction.

Abstract No. 666: Implementing Task-Based Language Teaching in a Saudi EFL Context: Applications and Implications

Fatimah Almutrafi, Newcastle University, UK
fatimah.almutrafi@gmail.com

Task-based approaches to learning have garnered a good reputation in the field of language teaching. Nevertheless, little research has examined its suitability for young learners in EFL contexts that are generally different from those in which this approach has emerged. Therefore, this study aimed to examine the effectiveness of implementing TBLT, and to find out the implications of adopting this approach in different settings. It investigated teachers' and young learners' attitudes towards implementing task-based approaches in a primary school in Saudi Arabia. Two tools were used to gather the information (i.e. questionnaires and semi-structured interviews) each of which has two different versions; one for teachers and the other for young learners. The findings revealed that both teachers and young learners have positive attitudes towards TBLT implementation, yet some contradictions were found between teachers' expectations and learners' needs. Although, teachers agreed that putting learners in groups increased their opportunities for acquisition, they were in disagreement about allowing the use of mother tongue. Young learners reported some benefits of working in groups, e.g., learning from each other, enjoying the learning process while doing the tasks; thus, facilitating their English learning as they could use their first language to compensate for their linguistic deficiency. Other issues, such as classroom management, were not viewed to be problematic in the Saudi context as is the case in other studies. This study showed that TBLT promoted interaction among young learners. The interaction factor was highlighted by the majority of participants as a positive aspect in learning. It seems necessary to further investigate this issue in order to understand the extent to which it affects the learners' acquisition of English.

Keywords: Task-Based, young learners, language teaching.

Abstract No. 712: The Understanding of Elementary 1 Teachers in Saudi Arabia Around the Challenges of the Transition to Elementary School

Dina Alomim, university of Edinburgh
dina.sulaiman.al@gmail.com

The transition to school is filled with excitement, but children can also develop tension and anxiety, this can have a long-term impact on their educational outcomes (Fabian & Dunlop, 2002, p.52; Bradshaw, Hall, Hill, Mabelis & Philo, 2012; Fabian & Dunlop, 2007). This study is concerned with the teachers understanding of the transition to school in Saudi Arabia. Therefore, this research looks at elementary 1 teachers' understanding around transition to school in Saudi Arabia. Teachers' perceptions can differ, due to beliefs and values in the Saudi Arabian society. The methodology was based on a qualitative interpretive approach. Five elementary 1 teachers were interviewed. The interviews were transcribed and a thematic coding approach was acquired to analyze the data. Results indicated that the transition programmes in Saudi Arabia, do not differ from international literature. However, the schools vary in what they choose to do. Teachers expressed the importance of parent collaboration with school. They also proposed that a more academic curriculum should be introduced in kindergarten. Teachers felt considerably under resourced and desired professional training. Recommendations and limitations of the study are then presented.

Keywords: Saudi Kindrgarten, Elementary.

Abstract No. 755: Language-switching among Arabic-English Bilinguals

Abdullah Alasmari
Essex University, UK
Imam University, Saudi Arabia
aaalas@essex.ac.uk

Meuter and Allport (1999) asked bilinguals to name digits in either their L1 or L2 (as cued by the background screen colour). They found a larger "language switch cost" for L2-to-L1 than L1-to-L2 switching. These results suggest that the non-target language is actively inhibited, and that L1 is inhibited more when naming in L2 than L2 is inhibited when naming in L1. I report three language-switching experiments with Arabic-English bilinguals. (1) When naming pictured objects, the language switch cost was larger for L2-to-L1 than L1-to-L2 switching. (2) When reading aloud Arabic and English words, switch costs were both smaller and similar for L2-to-L1 and L1-to-L2 switching. (3) When naming Arabic digits (e.g., □, □) and English digits, switch costs were similar for L2-to-L1 and L1-to-L2 switching. The results are interpreted in terms of how readily stimuli activate language-specific lexical representations for speech production.
Keywords: Language-switching.

Abstract No. 770: A Phonological Description of the Urban Hijazi Dialect Spoken in Jeddah

Hajar Ahmed Moussa, university of Manchester, UK
hajora88@hotmail.com

This study is a phonological description of the urban Hijazi variety spoken in the city of Jeddah in western Saudi Arabia. It is a synchronic description that attempts the phonemes of the dialect and their distribution within the attested syllabic types. It also attempts some phonological rules operating both within words and across word boundaries and their triggers. Among those rules: Emphasis Spread, High Vowel Deletion, Epenthesis, Assimilation, and Gemination. The main goal of this study is to make explicit the phonological characteristics of this unmarked Arabic dialect in order to establish its status in the literature of Arabic vernaculars in general and the urban varieties in particular.

Keywords: urban Hijazi, dialect.

Abstract No. 804: English Speaking Learners' AttitudesTowards Arabic as L2 Writing System

Hisham S. Alkadi, Newcastle University
Hesham.alqadi@gmail.com

Relatively few studies have investigated the attitudes of English-speaking learners towards learning Arabic writing as a second language, compared to those which have been done in the opposite direction. This article briefly looks at writing systems in the context of SLA as a preface to examine L2 learner perceptions towards WS differences. Emphasizing the key differences between the Arabic and English writing systems, this essay contributes to discovering the attitudes of English speaking learners towards writing Arabic in L2 context, or in short as L2WS. Inevitably, numerous factors could cause errors due to the L2 learning context. However, only main issues which relate specifically to the differences between the English and Arabic writing systems are mentioned and discussed. Reviewing literature, the

essay highlights seven common error categories namely; writing direction, character shapes, character substitution, phonological difficulties, short vowels, gemination, and handwriting. To verify and discover their attitudes, the researcher sought answers from English speaking leaners of Arabic in the UK to a questionnaire designed specifically for this purpose. It has revealed interesting results regarding the learners' perspective towards some of the highlighted common error categories. It is unsurprising, that the fundamental differences between the Arabic and English writing systems cause English learners of Arabic significant problems. It is thought that subsequently, they usually encounter more difficulties than their classmates whose languages are mostly based on (or share similar features to) Arabic WS such as Kurdish, Urdu and Persian for their dependency on the Arabic script for example. Although some of these errors are also known to be made by native speakers for complicated rules, some suggestions have been made to limit making such errors.

Keywords: learning Arabic.

Abstract No. 827: Young Saudi EFL Learners' Incidental Vocabulary Acquisition from Listening to Stories: The Effects of Frequency of Exposure, Elaboration, and Individual Differences

Muna Ali Alshehri, Lancaster University, UK
m.al-shehri@lancaster.ac.uk

The past two decades have seen a considerable amount of interest in the cognitive processing of second language (L2) vocabulary acquisition. Many studies agree that much L2 vocabulary is learned incidentally while learners are engaged in extensive reading or listening. However, there is a lack in studies investigating the role of listening as a source of incidental vocabulary acquisition for young English language learners. This study investigates Saudi children's English vocabulary learning from listening to stories. It particularly examines the separate and joint effects of the two variables frequency of exposure and +/- elaboration on incidental vocabulary acquisition from aural input and whether these effects could be moderated by individual differences between learners. Using a post-test only control group design, 128 young Saudi EFL learners were divided into a control group and four comparison groups who differed as to (1) whether they listened to a story one or three times (frequency of exposure), and (2) whether or not they received explanations of target words (elaboration). All groups were pre-tested in their receptive vocabulary, listening competence, and working memory. The post-test included four tasks which measured story comprehension, word form as well as meaning recognition, and translation. Results indicate that listening to stories leads to significant L2 vocabulary gains. Moreover, frequent exposure to vocabulary aids in recognition of word forms while availability of simple L2 definitions of the new words facilitates learning of word meaning. The findings also imply that the joint effects of multiple exposure and explanation are moderated by individual differences (e.g., working memory) of students. A pedagogical implication of this study is that listening to stories can facilitate L2 vocabulary learning if provided in a simplified and suitable context to young EFL learners with frequent exposure and elaboration of the new vocabulary.

Keywords: vocabulary; listening; incidental acquisition; frequency; elaboration; word form; word meaning; story comprehension; individual differences; working memory.

Abstract No. 869: Job Satisfaction and Motivation amongst Teachers in Saudi Arabia

Khalid Al Tayyar, University of York
k23w23@hotmail.com

Several studies have found that employees with high levels of job satisfaction were more likely to be productive, healthy and stable in employment. Most such studies were conducted in developed countries. There is a need for similar research in developing countries. There appears to be little published or grey literature on job satisfaction and motivation for teachers in Saudi Arabia. This study assessed male teachers' job satisfaction and motivation in boys' secondary schools in Saudi Arabia, aiming to identify the main contributory factors, the role of demographic variables and any relationship between satisfaction and motivation. A combination of quantitative and qualitative approaches: a questionnaire was administered to a random sample of 737 teachers, and interviews were conducted with 32 teachers. The teachers displayed high levels of both general job satisfaction and motivation. A factor analysis identified ten main factors with regard to job satisfaction. These were labelled as follows: staff development; student progress; salary and promotion; supervision and status in society; educational system; making pupils' work; workload; nature of the work; administration; and interpersonal relationships. A factor analysis identified two main factors with regard to motivation. These were labelled: intrinsic and altruistic; and extrinsic. The interview data indicated that religion was a third motivation factor. Finally, the results indicated the existence of statistically significant differences in job satisfaction and motivation between teachers based on their qualifications, experience and subjects taught.

Keywords: teacher job satisfaction.

Abstract No. 890: The impact of an online Continuing Professional Development programme compared to the traditional face-to-face Continuing Professional Development on the pedagogical practice of primary science teachers in Saudi Arabia

Suliman Binmohsen, University of Leeds
sulm54@hotmail.com

The aim of this study is comparative: to evaluate the impact of the current MoE face-to-face CPD programme, which has been utilised in order to develop teachers' pedagogical practice, and to compare it to the same CPD material provided in an online format. This process of evaluation is guided by Guskey's evaluation model (2000), which is helpful in gauging the impact of CPD programmes at a number of different levels and situations. Mixed methods were used in this study, questionnaire and Flanders were used to collect quantitative data and in depth semi-structured interviews were used to collect the qualitative data. A total of 20 male specialist science primary teachers were selected to participate in this study. This sample was divided into two equal groups, each made up of 10 teachers. Group A were to be trained face-to-face, and Group B were to be trained via the online CPD programme. The initial results indicated that in general, Teachers' reaction toward the on line CPD programmes is strongly positive however the overall satisfaction towards face-to-face CPD programmes is positive.

Abstract No. 904: Exploring Parents' Attitudes Towards Teaching English to Children in Elementary Schools in Saudi Arabia

Shereifa AlMohareb
London Metropolitan University, UK
s.s.mohareb@gmail.com

In an era when English is prevalent in all parts of the world and is the dominant language to all areas, many parents have wondered about their children's future and education, as when is the right age to start teaching them English?. Should they enrol their children in a government, private or international schools? Does teaching English in Elementary schools have a negative effect on the mother-tongue? And does teaching English has a positive effect on the children's academic achievements?. The current study tried to explore parent's attitude towards teaching in English in elementary schools in Saudi Arabia. This study attempted to answer: (1) Does parents' educational level have an impact on their attitudes towards teaching English in Saudi Arabia? (2) To what extent do Saudi parents believe that the age of the child plays an important role in teaching English in state schools? (3) What are the reasons that holdback many parents from accepting this new educational policy in Saudi Arabia? A questionnaire of 196 parents revealed that 68.4% believed that children should be taught in English before the age of 7. A 44.9% of the parents referred that their children study at private schools. Moreover, 79.0% of the parents said that learning English in elementary schools have no negative impact on the children's mother tongue. And 45.4% of the parents stated that they Approved the implementation of the new policy of introducing English in elementary schools while 43.9% disapproved it. The findings of the study contradicted the hypotheses of the research and highlighted various incorrect perceptions and concepts, in terms of the parents' views on the appropriate age to learn English and the effect of English learning on Arabic culture and achievements.

Keywords: Teaching, Education, Elementary schools, Saudi Arabia.

Poster: Engineering & Architecture

(Short Abstract only)

Abstract No. 12: A Web-Bot for Collecting Currency Exchange Rates for Data Mining.

Abdullah H Alsharif
Kingston University
alsharif.a@hotmail.com

Changes in currency exchange rates constitute a rich field of investigation and analysis by investors, financial experts, economists, market analysts and many others. The causes of changes in exchange rates can be referred to many factors, such as economic, political, environmental, social and others. Another important factor that causes currency exchange rates is related to changes in other currencies. For example, certain independent factors, say economic, may cause a drop in the USD price, which may lead to a change (drop or rise) in the GBP price. Therefore, changes of exchange rates independent of external factors can be studied and analysed. Data mining are analytical methods evolved from different disciplines, such as statistics, machine learning and computer science, and has several real-world applications. For the purpose of applying data mining methods and techniques on analysing changes in currency exchange rates, a databank of currencies needs to be acquired. One of the most popular sites found on the Internet for currency exchange rates is XE.com. XE provides live exchange rates for almost all currencies in the world. The website provides other such as currency conversion, money transfer worldwide and other related services. However, this project is interested in creating a databank of exchange rates for the purpose of analysing and investigating the association among certain currencies. Therefore, the initial step is to build a webbot based website that extracts currency exchange rates of the required currencies from the Internet, and stores them in a database for later analysis.

Keywords: PHP as the server scripting language, and HTML, JavaScript and AJAX for the front end user interface, System architecture, MySQL, Server Scripting, Client Scripting.

Abstract No. 37: Space as Plastic Values in Bronze sculpture

Khulod Al-Bugami
UM ALQURA UNIVERSITY
kh_m21@hotmail.com

Research aim and objectives: The aim of this research is to investigate 'Space as plastic values in bronze three dimensional works' by completing the following objectives:

1. To identify the elements of the three dimensional works.
2. To identify the plastic values of space in the bronze sculpture.
3. To identify the plastic potential of some materials and their association with space form in the three dimensional works.
4. Shed light on the plastic values of space in the selected models for some modern and contemporary three-dimensional works.

Research methodology: This research approach follows the descriptive analytical and semi-experimental method.

The most important findings:

- Scientific and technological development has a very strong impact on the artistic vision and access to new plastic formations of space. This is a combination of the idea and technical performance to achieve the concepts of modern art.
- Three dimensional works starts outside the traditional features. This is from the study and analysis of the relationship between space and the rest of the work, and its impact on the form and content of the work.

- Form and type of space values are closely linked associated with material's implementation: The most important recommendations: Stereo configuration should be included in the Art Education Curriculum at the art processing in a space.

This is because of its great importance to realize the space to students, what it is, and its role in the substantive work. Further scientific studies are recommended on the concepts of the aesthetic component of the space in practical applications in the Art Education Department.

Abstract No. 59: Effect of the flow configuration of the cathode channel on the distribution of temperature in proton exchange membrane fuel cells

Centre for Computational Fluid Dynamics, Energy Technology Innovation Initiative, The University of Leeds, UK LS2 9JT
pm09neah@hotmail.com

Heat and water management is one of the main and most important issues, which should be considered in proton exchange membrane fuel cell (PEM) performance. The temperature across the membrane electrode assembly (MEA) should be as uniform as possible in order to maintain an optimum level of water, which hydrates the membrane without blocking the gas diffusion layer (GDL). In this study, a three-dimensional, multi-phase model of three main cathode flow configurations, namely, the parallel, the planar and the serpentine flow configurations, have been developed in order to investigate the effect of the channel flow field on the temperature distribution in PEM fuel cells. The results show that the parallel and planar cathode flow configurations result in a more uniform temperature distribution in PEM fuel cells. In addition, the saturation of water increases at the interface between the cathode GDL and the cathode catalyst layer as the maximum temperature in the MEA decreases and this leads to having more liquid water to be humidified in the membrane and thus to enhance the performance of PEM fuel cells.

Abstract No. 67: Informing the development of land use policies that support sustainable planning: a case study of Jeddah, Saudi Arabia

Eid Mohammed Algarni
Teesside University School of Science and Engineering
e.algarni@tees.ac.uk

The emergence of major cities in Saudi Arabia has made the government put great efforts into coping with the demands of the urban communities in those cities. On the one hand, in cities such as Riyadh, Dammam and Mekkah, the government has to respond to the pressure of protecting the rights of owners, tenants and the private and public investors. On the other hand, the changing demographics, household incomes, and lifestyles in other major cities, such as Jeddah, has made the government focus on issues pertaining to the development of land use policies in support of sustainable planning. Land-use policies in the KSA are unified in terms of content, however, land use policies differ, in implication, from one city to another according to the decision-maker. These policies and other government plans are the subject of the study presented in this paper. Both secondary and primary methods of data collection are used. The primary data collection consists of interviews, with 17 professionals involved in the development and application of land use policies. The secondary data used includes urban planning documentation. The NVIVO computer programme is used to support the data analysis. This paper concludes that Jeddah is experiencing housing shortages due to the inappropriate, short-term, and short-sighted land-use policies and planning regulations. It then goes on to suggest that existing urban regulations, land subdivision, and layout policies in the KSA do not support sustainable development and identifies the barriers to developing

and implementing sustainable planning policy in KSA. To address the land and housing problem in Saudi Arabia 17 professional interviews were conducted to discuss the regulations and policies designed for land use management and planning. This research study will make significant contributions to the process of land subdivision and layout planning regulations in favour of the Saudi public.

Abstract No. 87: ISO 9000 Implementation Factors in Saudi Manufacturing Industry

Abdullah Albadran, Kian Tan, Wai M.Cheung
School of Computing, Engineering and Information Sciences, Department of Mechanical Engineering, University of Northumbria, UK.
Abdullah.albadran@northumbria.ac.uk

The ISO 9000 is a family of standards, which is linked to quality management systems that certifies a given organization meeting the requirements of customers and stakeholders. Although there is a wealth of literature on ISO implementation, it was found that there is relatively little materials related to recent study on the factors that influence ISO implementation in Saudi manufacturing industry. This topic has not received enough attention and certainly there is lack of these studies in the Middle East countries. Therefore, the aim of this research is to investigate, identify and analyse the motivation factors that influence implementation of ISO 9000 in Saudi manufacturing industries. The main purpose of the current study is to provide empirical data on the most common factors that influence the ISO 9000 implementation in the manufacturing sector in Saudi Arabia. In order to measure the factors of ISO 9000 implementation in Saudi Arabia, a three-stage survey was carried out with appropriate samples to investigate potential factors that affect the ISO 9000 implementation in the Saudi manufacturing industries. The three-stage approach includes:

1) An initial questionnaire was sent to confirm whether or not the selected common factors are applicable to the Saudi Manufacturing industry.

2) A second set of questionnaire focus on finding the main hypothesis such as the factors that may affect the implementation of the ISO standards and techniques to analysis the data.

3) The last stage is focused on using the face-to-face or telephone interviewing approach.

In terms of data analysis from the results gathered from the survey, a variety of analytical tools will be used to deal with qualitative/quantitative and objective/subjective nature of the study. The tools used include multiple regression analysis and hypothesis testing Data analysis is to be carried out with the application of software packages such as SPSS.

Abstract No. 88: Provision of Wireless Services in KSA using High Altitude Platforms Saudi Eye in The Sky

Faris A. Almalki
Taif University, Kingdom of Saudi Arabia
University of Kent, UK
com.eng.f@hotmail.com

It is not possible to surpass the progress achieved in developed countries to bridge the digital divide with traditional means. Furthermore, the Kingdom of Saudi Arabia is vast and rugged. Extending wireline networks to isolated areas is economically infeasible and may be impossible. Recently there is a great interest in a novel approach called high altitude platform (HAP) operating at an altitude of 17-22 km in the stratospheric layer. A HAP could cover a service area of up to 400 km diameter depending on the minimum elevation angle accepted from the user's location. Its position in the sky would give them many of the favorable characteristics of satellites, but without the distance penalty. Its position in the sky would also

let them avoid the radio ground scatter of terrestrially based systems, while still being about as close as terrestrial antennas. Deploying a network of HAPs in the sky of the KSA with interplatform links (IPL) will swiftly bridge the information gap through soft infrastructure, fast start-up time, gradual growing, on-demand capacity assignment, low capital investment as well as low ongoing operating costs. HAPs represent a perfectly suitable alternative infrastructure for long-term provision of broadband access to fixed or mobile users. In addition, HAPs are particularly well-suited for temporary provision of basic or additional capacity requirements, due to the possibility of rapid deployment and controlling the flight path in compliance with changing communication demands, providing network flexibility and reconofigurability. HAPs, also, are well suited for serving remote regions with low user density, short-term large-scale events and establishment of ad-hoc networks for disaster relief. Typical services to be offered from aerial platforms include basic voice, video and data communications, news gathering, localization and navigation.

Keywords: High Altitude Platforms , Antenna, IPL.

Abstract No. 98: Towards an Effective Sustainable Urban Planning Development Framework for 21st Century

Ali AlQahtany
Cardiff School of Engineering, Cardiff University,
Queen's Cardiff, UK
Alqahtany-ali@hotmail.com

The purpose of this research is to shed light on the importance of sustainable urban planning development for the communities and give a comprehensive review of the key issues that are related to it such as its concepts, principles and challenges. The study will focus on a number of issues in the communities such as the built environment, neighborhoods and services including the infrastructure, public transportations and so on. Moreover, it aims to critically discuss the most common frameworks of sustainable urban communities, which are internationally well known. The purpose of this discussion is to reach the limitations of these frameworks, for instance, the regional variations, which will be addressed in the proposed framework in order to utilize this new framework in different parts of the world. The contribution of this research is to propose a framework for an effective sustainable urban planning development for the communities in 21st century that addresses the gaps and the limitations of the existing models. Furthermore, it takes into the account the core issues of urban communities including environmental, social, economic and planning perspectives.

Keywords: Sustainability; urban planning; sustainable urban planning development; sustainable urban communities.

Abstract No. 130: Addressing Construction Delays in the Kingdom of Saudi Arabia

Abdullah Albogamy, Darren Scott, Nashwan Dawood
School of Science & Engineering, Teesside University
Abdullah_2424@hotmail.com

The delay is a key issue in the construction industry globally and the Kingdom of Saudi Arabia (KSA) is not an exception. The research work included in this paper is the part of the PhD study which aims to outline the main causes of delays in public building projects in the KSA, and finally developing a risk management framework to mitigate the impact of those delay factors. To achieve this aim, a list of 63 delay factors was included in the questionnaire

and respondents were asked to rank each factor according to its frequency of occurrence and degree of impact. The ranking results reveal top five critical delay factors such as low performance of the lowest bidder contractor in the government tendering system, delays in sub-contractors work, poor qualification, skills and experience of the contractor's technical staff, poor planning and scheduling of the project by the contractor, and, delay in progress payments by the owner. These factors are categorised into seven groups to conduct critical analyses. The correlation analyses of delay factors reveal that most of the variables within each group are significantly correlated with each other. On the other hand, 31 out of 63 delay factors are extracted that are extremely crucial at this time and need to be addressed urgently to avoid further time and cost overruns in the KSA. Furthermore, the interviews with construction stakeholders uncover the fact that most of the construction parties do not use any risk management framework to reduce the impact of concurrent delay factors. The anticipated works mainly include considering an appropriate risk management technique to determine the impact of risk factors on time and cost of each construction project. This technique will be applied throughout the four stages of construction in the risk management framework.

Abstract No. 208: Influence of Initial Packing of Powder on Stress Resistance and Bulk Flow Behaviour

Saeed Albaraki and S.J. Antony
Institute of Particle Science and Engineering
University of Leeds, UK.
saeedarz@yahoo.com

The aim of this study is to measure the distribution of maximum shear stress inside powders and granules within different confined flow geometries using advanced photo stress analysis tomography (PSAT). In later stage the bulk powder flow behavior is measured using color-coding technique and correlations are found between these measures. Novel stress-responsive birefringent powder (normal size distribution 300µm-1000µm) has been developed in our laboratory. Using this in a PSAT setup, initial shear stress (tmax) distribution within particles fed in static hoppers having different opening angles is presented. The macroscopic powder flow profiles have been measured by applying color coding technique. Correlations are found between the nature of initial shear resistance distribution and macroscopic flow properties. The results show that in general, tmax within hopper increases for decrease in internal angle of opening. For higher values of internal angle of the hopper geometry, tmax tends to become more dominant towards the wall and much less in the middle region of powder packing. The direction of the major principal shear stress was mostly along the direction of gravity for the smallest internal angle of the opening. The dynamic flow profiles results are in full agreement with the initial shear resistance profiles observed from PSAT experiments. In conclusions the study provides valuable links between microscopic stress fields to macroscopic flow properties of fine powders. This highlights the importance of the combined interactions of particle-scale properties and container geometries on flow properties of fine powders through flow devices, an aspect well sought in engineering designs of powder processing devices.

Keywords: PSAT, Shear stress, Dynamic flow, major principal shear stress.

Abstract No 256: Chloride-Sulphate Exchange Performance in Ion-Exchange Column

Hasan Al Abdulgader* and Nidal Hilal
hasan.a@outlook.com
Swansea University

The aim of this work is to utilize ion-exchange resin (IXR) in sulphate form and test its ion exchange performance with chloride ions present in water. The key motivation behind this study is to determine the possibility of efficiently removing monovalent ions from water, in exchange with multivalent ions. This could enable us to desalinate water using cheaper membrane technology, such as nanofiltration (NF), compared to a conventional reverse osmosis approach. Three commercial anion exchange resins both in sulphate and chloride forms were used and they namely are Purolite A500TLSO4, Purolite A400TLSO4 and Purolite A850. The earlier two came ready in sulphate form. Purolite A850 resin came in chloride form but was transferred to sulphate form using treatment with concentrated Na2SO4 solution (30 g/L). All experiments were carried out in continuous column mode. NaCl feed solution was delivered to the column using peristaltic pump at a flowrate of 0.4 L/h. With time, the samples have been periodically collected from the column and analysed to determine contents of Cl- and SO42- ions in the probes using an ion chromatograph (Dionex ICS-900) with AS14A (4mm) anion-exchange column. The column ion-exchange tests have been performed to elucidate the effect of operating conditions on the shape of breakthrough curves of IXR. The effect of feed flowrate and concentration was evaluated. The results showed the concentration factor has a major effect on both the breakthrough point of chloride ions and the sharpness of the breakthrough curves comparing with the feed flowrate through the column.

Keywords: Ion exchange, desalination, ion exchange resin, water treatment, nanofiltration.

Abstract No. 278: Development of a Diagnostic Device to Predict Clinically Significant Inflammation Aassociated with Cardiac Surgery

Mohammed Yahya Majrashi
University of Strathclyde
mymajrashi@gmail.com

Cardiac surgery has been accomplished by using Cardiopulmonary bypass (CPB) which was introduced clinically in 1953. Although this technique is life saving, it is associated with a number of complications that have persisted since its first introduction. One of the key and consistent complications of CPB is the inappropriate activation of inflammatory processes. Over the years this response has been characterized through clinical and laboratory research and has been shown to involve both molecular and cellular processes such as complement system, coagulation system, cytokines (proinflammatory and anti-inflammatory mediators) and adhesion molecules. Research has demonstrated that this up-regulation of inflammatory processes is mediated by blood interaction with air, the artificial surface of the CPB, ischemia reperfusion and endotoxins. The impact of this natural, but inappropriate initiation of inflammatory processes is significant, and effects clinical outcomes. All patients who undergo open-heart surgery have an inflammatory response to the procedure, but generally the impact is of little clinical significance. However, in a substantial cohort of patients (around 10%) this response assumes much greater significance and may lead to severe complications such as multi-organ failure or even death. To date it has not been possible to predict which patients will elicit an exaggerated response as they do not identifiable using any of the traditional risk stratification techniques. The present research aims to develop a

test which can be used prior to open heart surgery to estimate the inflammatory responses that surgery will provoke. This will involve the development of an activated molecular screening technique which will enable the prediction of patient specific propensity for inflammatory events.

Keywords: Inflammatory response, Cardiopulmonary bypass, Screening technology

Abstract No. 324: Surface-profiling through self-mixing in a THz quantum cascade laser

R. Alhathlool[1], A, P. Dean[1], A. Valavanis[1], Y. L. Lim[2], R. Kliese[2], M. Nikolić[2], S. P. Khanna1, L. H. Li[1], D. Indjin1, J. Cunningham[1], S. J. Wilson[2], A. D. Rakić[2], A. G. Davies[1] and E. H. Linfield[1]
[1]School of Electronic and Electrical Engineering, University of Leeds, UK
[2]School of IT and Electrical Engineering, University of Queensland, Australia
aelrhsa@leeds.ac.uk

Terahertz frequency quantum cascade lasers (THz QCLs) are semiconductor sources of coherent THz radiation, and have numerous potential applications in chemical sensing and industrial inspection, as well as security and biomedical imaging. However, these applications require a compact and sensitive detection system. We address this by using a THz QCL as both the radiation source and as an interferometric detector. Self-mixing (SM) occurs when radiation is reflected from an external object back into the QCL cavity. The resulting interference modulates the emitted power and QCL voltage, depending on the amplitude and phase of the reflection. This allows simple, 'detector-free', sensing of displacement and reflectivity, with high-sensitivity owing to its coherent nature. We demonstrate 3D imaging using SM in a THz QCL. We show a 3D image of a stepped GaAs structure fabricated by wet chemical etching, in which the surface height has been extracted from the phase of the SM signal. Although the SM signals were obtained from changes to the laser voltage, we show that SM signals can also be obtained from the THz emission from the back laser-facet. The equivalence of electrical and optical SM signals, resulting from reflections from an oscillating object, is proved. Owing to the high SM sensitivity, we have been able to demonstrate stand-off imaging at round-trip distances of up to 20 m through air.

Keywords: Quantum cascade lasers; submillimeter wave technology; infrared sensors; laser feedback; interferometry; laser velocimetry; imaging.

Abstract No 346: Crisis of Traditional Identity in the Built Environment of the Saudi Cities. A Case Study: Old City of Tabuk

Mabrouk Alsheliby
Newcastle University
maurp2@hotmail.com

The Saudi cities have lost their heritage identity in the built environment in last four decades as result of an economic boom. The characteristics of construction heritage in the Saudi cities has been affected and exposed to a lot of harm. Complete districts and many old buildings have been removed. New buildings were constructed in old town do not represent the local identity. This research aimed to identify and analyse the transformation of traditional identity in the built environment in order to find ways in which to preserve our heritage identity in the built environment. The paper presents an investigative study to understand the reasons that stand behind this crisis. Old city of Tabuk was chosen as case

study to apply this method. The research results shows that the crisis has multiple causes. For example, there were no serious initiatives from the relevant authorities to preserve the traditional buildings, legislations have not helped in preserving the traditional identity in old towns, a lack of awareness on the part of some or all of the decision makers, owners and developers which lead to the emergence of a hybrid architecture, Inheritance issues which can take along time in court led to weakness and neglect of the traditional buildings, socio-economic change which reflects on the residents' desire to find other places that satisfy their modern needs, non-Saudi architects have transferred their culture through the designs. The Conclusion is that the traditional identity has to be developed in order to cope with modernity in a way that does not contradict our heritage identity. in addition to, suit modern requirements.

Keywords: Built environment. Heritage. Historical. Identity. Preserve. Traditional. Transformation.

Abstract No. 358: Compact THz Integrated Circuit Sources in the 100 GHz – 1 THz Range

Khalid Hamed Alharbi
University of Glasgow
khalharbi79@yahoo.com

Terahertz (THz) radiation, whose frequency range lies between millimetrewaves and infrared light in the electromagnetic spectrum, has many potential applications in different scientific fields such as medical diagnostic, security imaging, and wireless communication. THz radiation is non-ionizing, and so it is safer than other ionizing radiations used for medical diagnostic, such as X-rays, which may produce physiological effects. THz radiation does not penetrate through metals or water but it does penetrate through many common materials such as lather, fabric, cardboard, wood, clothing, plastic, ceramics, and paper, and so provides new sensing capabilities. Portable THz equipment would improve airport security where it can be used to identify dangerous materials compared to today's bulky X-ray detectors. In the field of wireless communications, THz offers very large bandwidths, in excess of tens of GHz. Thus, it has a potential for very high data rates of tens of Gbps. However, THz technology suffers from the lack of efficient and practical radiation sources. This project is dedicated to developing compact and powerful sources employing resonant tunnelling diodes (RTDs), which have shown the potential to realize signal sources beyond 100 GHz. Two circuit design challenges (parasitic oscillations and low output power), which are common to RTD-based circuits, will be addressed in this project. The oscillators will be designed to operate in the 100 GHz - 1 THz range with expected output powers in the milli-watt range.

Keywords: Terahertz, Resonant Tunnelling Diodes.

Abstract No. 366: Research title: Unified E-learning Repository System for Sharing Learning Objects among Saudi Universities

Ayidh Alawni Alanazi, Electrical engineering department, School of Engineering and Design, Brunel University
Ayidh.Alanazi@brunel.ac.uk

The study began twenty months ago, and it was initially incorporated into the research plan and methodology proposed to implement the research. The main aim for this study is to create a dedicated Unified E-learning Repository System for Sharing Learning Objects Among Saudi universities according to Lecturers ' needs .The proposed methodology for conducting this research involves mainly the following stages: Evaluating the current e-learning literature in Saudi Arabia, evaluating the current available repositories solutions, Investigating the specific needs for functionalities and services, defining the inputs for system design, designing a prototype repository structure, evaluating the newly designed repository system, defining current systems limitations or capacity within the Saudi universities. the completed tasks so far include: Reviewing the literature on the current e-learning in Saudi Arabia, Preparing the pilot survey questionnaire, Distribution of the survey, Data of survey has been collected. However, analysis result is under progress and expected to be finished by the end of March. Although the use of e-learning can have a positive effect on learners, this kind of learning needs repository systems for sharing learning objects among universities. This is considered a necessity to empower the educational system and raise the standard of higher education throughout all higher education institutions. Therefore, this study investigates the specific challenges of repository usage in Saudi Arabia. It is hoped that the detailed expository discussion herein will help to eradicate, or at least minimise, the obstacles facing the implementation of repositories and will eventually support the development of advanced e-learning practices amongst in Saudi universities.

Keywords: E-learning, Repository System, Learning Objects.

Abstract No. 369: Developing a Decision Support System to Enhance Risk Management Process in Residential Construction Projects in Kuwait

Ghadeer Alfandi
Civil Engineering Department, Brunel University
ghadeer.alfandi@hotmail.com

The construction industry has long been recognized as complex, risky and challenging in industrial sector. Over the years, there is an increasing number of construction projects exceed the contractual time and cost budget. A major contributory factor to this problem is inadequate management procedures for dealing with numerous risks that associated with project delivery. The aim of this study is to develop a decision support system to enhance risk management process for the delivery of governmental housing projects in Kuwait. This poster presents the results of on-going study that was conducted to investigate the significances and perceptions of key risks in residential construction projects in Kuwait from owner's perspective. Literature reviews, interviews and questionnaires are used for the identification of risk factors affecting the residential projects. A total of 61 risk factors have been identified and grouped into ten categories, namely: (1) owner-related; (2) contractor-related; (3) consultant-related; (4) operational- related; (5) contractual-related; (6) project-related; (7) project parties- related; (8) economic, financial & political related; (9) force Majeure; and (10) geological related. The results show that the most significant risks are: shortage of skilled labour, inadequate contractor experience, poor labour productivity,

variation orders, and delay in preparation of shop drawings. The outcome of this research fill the lack in knowledge of risk factors affecting residential projects in the state of Kuwait, which can be used to provide owners, contractors, employers, and decision makers guidance for focusing, and controlling the most significant factors perceived to influence the schedule of residential projects.

Keywords: Risk management, DSS, Housing projects, Kuwait.

Abstract No. 371: Title: E-State Agent

Abdalhady Almuhammadi and Dr. Hamza Aldabbas
De Montfort Universit, UK
arm_cs@hotmail.com

The increasing use of the internet has changed the way advertisements work in our world today. Previously, advertisements were mainly supported by media, such as printed and electronic material. However, the internet is now the most common place where advertisements are used. This concept is the same for the estate agent business also. In the past, the public would visit an estate agent's office to recruit their services, for renting or selling their properties, but, nowadays, estate agents make use of the internet, to advertise and publish their information into the media, and, most commonly, via a web based environment. The main purpose of this poster is to provide a web based co-ordination mechanism, allowing people to interact with each other, without the involvement of the real estate agent. The outcome of the poster will be as the provision of a virtual estate agent system, where landlords can advertise their properties, and property seekers can search for properties, resulting in the subsequent coordination. In the physical world, the main concept of an estate agent is to act as a negotiator between a person, who is seeking some property either for rent or purchase, and the owner of the property. who actually wants to either sell or rent. The estate agent takes his/her commission from the landlord and the property seeker. The increasing use of the internet has made this task considerably easier. In today's world, the estate agents have provided their company websites, where they advertise the property with some of the details. The property seeker searches for properties that interest them, and, then, if they see something of interest, they either communicate via the website or contact the estate agent directly.

Keyword: E-State, Internet, advertisement, properties, E-Commerce.

Abstract No. 373: Contribution of Distributed Generation based on Renewable Resources to Power System Operation

Fahad Alsokhiry and Kwok L Lo
University of Strathclyde
fahad.alsokhiry@strath.ac.uk

Due to the rapid growth in population and economic, electricity demand increases more than ever in the world and fluctuates dramatically in short – term in response to business cycles and weather conditions. Meeting that steep rise in demand is significant in power systems worldwide in recent decades. One of the vital methods to accommodate the growth in electricity demand is the increase of penetration of Distributed Generation (DG) based on renewable resources in distribution systems. In addition, DGs based on renewable energy have become exceedingly attractive due to their significant ability to reduce the dependency on fossil fuels and decrease greenhouse gas emissions such as, carbon dioxide (CO2). Solar

and wind are largely used as distributed generation sources in small to medium – scale low and medium voltage micro or smart grids because they are located on either the utility or customer side, are a sustainable energy source and environmentally friendly. Recently, wind and solar energy are the fastest growing renewable energy technologies in power generation globally and for this reason, DG units based on wind and solar energy are considered in this research. As the penetration of relatively large distributed generation units based on renewable resources has risen considerably in distribution systems and due to the intermittent nature of renewable energy, the nature and dynamics of distribution networks may be changed. Therefore, these DG units should be connected to the grid through power electronics interface which decouples their dynamics from the grid. A new operating regime for these units may be required in order to ensure safe and reliable system operation. For micro – grid to be able to operate safely as an independent network or part of a larger grid, each DG unit must be able to contribute to ancillary services in the same manner as larger conventional power – plant.

Abstract No. 440: Synthesis and Characterisation of Y-doped BaTiO3

Adil Alshoaibi, Nahum Masó, Anthony R West
University of Sheffield
adil_alshoaibi@hotmail.com

The aims of the project can be summarised as follows:

- To study the effect of yttrium on the polymorphism of BaTiO3 and to determine the principal mechanisms for substitution of Y into the BaTiO3 lattice.
- The measure the electrical properties of Y-doped BaTiO3 with particular emphasis on establishing the conditions under which semiconductivity occurs.
- To determine the conditions under which a resistivity minimum occurs with increasing Y content.

This project began with a study of compositions on the join with substitution of Y for Ti. Y-doped BaTiO3 samples with the nominal composition (BaTi1-xYxO3-x/2) with various Y content were synthesized using the solid state method with or without ball milling, and sintered at different temperatures. The polymorphism of the BaTiO3-related product, in particular whether it is hexagonal or cubic, seems to depend on whether the samples are in contact with the platinum container during heat treatments. It appears that Pt may be catalysing crystallisation of a particular polymorph. The temperature of the cubic-hexagonal transition increases with Y content when the samples are in contact with platinum during reaction and decreases with Y content when the sample is placed on sacrificial powder. Addition of 2% excess TiO2, according to the formula BaTi0.95Y0.05O2.975 + 2% TiO2, was helpful to obtain a pseudo cubic phase. Addition of 2% excess SiO2, according to the formula BaTi0.95Y0.05O2.975 + 2% SiO2 was helpful to obtain a pure tetragonal phase with no secondary phases. Impedance data for the hexagonal phase (BaTi1-xYxO3-x/2 : x=0.10) shows that the sample is electrically homogeneous and gave a single M″/Z″ peak at higher temperatures. The electrical properties of the bulk components are dominated by the sample bulk with E= 0.739 eV and έ is around 67.

Keywords: Defects, Electrical conductivity, BaTiO3, Phase diagram, Permittivity, Electroceramics, PTCR effect and titanates Sintering.

Abstract No. 448: Two Wheel Self-Balancing Robot

Abdoalateef A. Alzhrani
University of South Wales
ltfee.2000@hotmail.com

Two wheels self-balancing robot become very active research area among electronics and control engineers. This report aimed to summaries the methods used to build and design the two wheels self-balancing robot using the IMU (accelerometer and gyroscope) as tilt angle sensor. The sensors outputs were fed into 10 bit microcontroller using ADC modules. A sensor fusion algorithm was developed using complementary filter to achieve the best possible reading of the tilt angle, the algorithm was developed in C programming language. A PID closed loop control system has been implemented to control the response of the robot and generate the appropriate ratio of the PWM signal. The PWM is passed to the motor driver, which is capable to drive up to 30A, the motor driver uses the PWM single to drive the motor to the desired speed and direction. Communication link between the PC and the microcontroller was created via UART to test the algorithms and tune the PID parameters. The graphic user interface was created using windows CVI.

Abstract No. 482: Online Library System

Nwyer Rjallah A-mohmmdi
d0lly200@hotmail.com

In This topic will discuss an important thing facilitates a lot to the students and staff we can apply it actually activated through the establishment of a system in the systems fired by the name of "online library system" This system has designed in a manner familiar interface for users and staff and to help them to do such (Loton,2011). When the page is designed applied the most important criteria for creating Web pages based on the most important references are specialized in designing web pages to do:

i) Check the availability of the books or not, from anywhere.
ii) Help the library staff to verify the availability of library requirements quite easily.
iii) Inform the director of the library all the results quite easily through the daily reports is obtained from the system.
i) Issuing membership cards for students and save their data in a database.
ii) Saving time and effort for both the students in search of books from their homes and the library staff to check the availability of books and writing reports to the Director.

This system has been applied by drawing Diagram (DFD) and ERD Diagram and designed in an Excel sheet and draw relationships between suppliers and library staff, director and students. This system has advantages which are: accuracy and speed in the statistical books, supplies, and quickly routed to suppliers Library.

Keywords: Online library, borrow, web pages, (DFD) and ERD Diagram

Abstract No. 516: Fracture Toughness Behavior of Flax Reinforced and Flax/Basalt Hybridised Vinyl Ester Composites

Fahad abdulaziz almansour, H. N. Dhakal and Z. Y. Zhang
School of Engineering, University of Portsmouth, U.K.
fam_121@hotmail.com

For last decades, flax fibre reinforced composites have been extensively used in non-structural components mainly in automotive industry. For these composites to be used in structural components, an understanding of fracture toughness is extremely important. In this study, flax reinforced and flax/basalt hybridised vinyl ester composites were fabricated by compression moulding technique and their interlaminar fracture toughness (mode I and mode II) behaviours were investigated using double cantilever beam (DCB) and three-point bend end-notched flexural tests. The mode I fracture toughness initiation of flax composite was smaller than that of mode II for the in-plane crack. It has been observed that during the crack propagation that the increased fracture toughness was realised as a result of substantial fibre bridging effected between the crack surfaces. However, the increase of the mode I propagation fracture toughness was moderated after the crack reached a certain length. On the other hand, it was observed that the mode II fracture toughness continuously increased during the crack propagation. The maximum load found for mode I loading was significantly lower than obtained for mode II loading, with values of 186 and 429 N, respectively. The maximum values obtained for critical strain energy release rates GIC and GIIC were 193 and 1940 J/m2, respectively. Similarly, observed for critical stress factors KIC and KIIC were 225 KJm0.5 and 133 KJm0.5 respectively. The end-notched flexural test (mode II) results for flax/basalt hybridised composite exhibited an improved maximum load compared to flax alone samples.

Keywords: Polymer-matrix composites (PMCs); Natural fibre; Fracture toughness, Double cantilever beam test; Three-point bend end-notched flexural test; SEM.

Abstract No. 527: Design Guidance for Contemporary Saudi Arabian Houses

Majid I. Almehrej, Professor Bob Giddings, Gordon Hudson and Manuel Cresciani
Faculty Engineering and Environment
Department Architecture and The built Environment
Postal address 82 Greenlee Drive, Newcastle Upon Tyne, NE7 7GA
mehrej@gmail.com

The Traditional Muslim Courtyard House has been much admired throughout the world, as the ideal solution for the climate and culture of Saudi Arabia. However, revenues from oil have changed people's perceptions of themselves and from thelatter part of the 20th Century; citizens have favoured the American style Villa House. This is regarded as more appropriate to their new status - with air conditioning and space for their cars. Whereas the Courtyard House is now seen as dowdy and out of date. Yet, all is not well. There is increasing concern over the lack of privacy for families in the Villa House. In addition, the reliance on the use of air conditioning systems in order to provide the required climatic comfort.Saudi residents want new technology but they also wish to preserve their identity and traditions. The aim of the study and this poster is to demonstrate the nature of both house types; to investigate resident's satisfaction and dissatisfaction about their houses and to develop some guidance for house design that will satisfy 21st Century aspirations, and respect traditional solutions.

Keywords: Saudi Arabia, human needs; place; home; courtyard and villa houses.

Abstract No. 589: How to Convert Antique Images to 3D Graphics in Madinah 1950s context?

Walaa Jamal Alharthi
Electronics and digital media - University of Kent/ Taiba University
wala2_sa@yahoo.com

The history of the city of Al Madina is very rich and full of heritage since the seventh century at that time and through the years following most of the old buildings, walls and holy places have been placed by the modern architecture. The new generation has got limited knowledge about the history of the city especially the properties of architecture and how that affects the social life for citizens. The research approach is to make an engaging and effective 3D graphics application on a virtual heritage of Al Madinah in 1950s to be displayed in museums. The research went through four phases to achieving the goal of the research. The first stage is to discover and explore the existing data about Madinah in that era and how it is been displayed as well as examine the different mediums of display with a critical view. The result of the outcome data on Madinah in the 1950s, which includes documents, photos and books, were converted to 3D forms using 3D software. The 3D data will be available after the research for other projects on Madinah. The next stage is to conduct research on how current museums in the UK use 3D in comparison to Madinah museums. The final phase is to produce an application based on the data that has been created in phase 2 (the converted 3D data), which is further based on phase 1 (the collection of data about Madinah) and the analysis of phase 3 (visiting UK museums). The production is the concluded result of the previous data in addition to the literature review in order to obtain the most relevant parts of the different applications and apply them to one application.

Abstract No. 640: Quality of Service in the departure area of King Khalid International Airport

Eng. Tareq Al Muhareb, Dr Jasper Graham-Jones
Plymouth University
muhareb40@gmail.com

The aims of This poster is of clarify the correct ways to activate the change in administration in any international airport consider customer satisfaction while providing any services that attracts customers' attention in aviation industries. (KKIA) is considered the gateway to the Kingdom of Saudi Arabia. Therefore, this research aims to address the quality of service in the departure area of KKIA. The research aim will be achieved by using a descriptive analytical methodology. A SERVQUAL questionnaire was distributed in the departure area of KKIA (the sample was selected randomly 475 Passengers); It was implemented during the summer period, since passenger traffic is dense during this time and there is pressure in the departure hall. The results obtained from the SERVQUAL questionnaire show that the quality of the airport's services within the departure area of KKIA is not as expected. The results show that the most important factor affecting the level of service (LOS) is agent wait time. In particular, the time taken for travellers to leave the airport and reach the plane is 140 minutes, which is considered a very long time. This was measured via observation and by interviewing passengers.

Keywords: Lean management practices, Service quality (SERVQUAL) methodology, King Khalid International Airport (KKIA), Kingdom of Saudi Arabia (KSA).

Abstract No. 670: Building Resilience to Climate Change Risks

Yahya Nasser Alfraidi
Liverpool University
ya-ya-3@hotmail.com

Climate change risk impacts are one of the most challenging aspects that faces the built environment policy makers now and the near future. The scale of these risks impact is uncertain, to some extent, and unknown. The majority of built environment assets will be vulnerable to climate change predicted scenarios. For example, building assets in cities will be exposed to extreme hot summer days and nights due to the urban heat island effect and pollution. Buildings also could be vulnerable to other climate risks. More impotently the building users might experience extreme internal and extern comfort conditions leading to lower productivity, wellbeing and health problems. Attaining robust climate resilient building assets requires the impacts of climate change risks to be a key consideration in the way that buildings are planned and commissioned, designed, built, maintained, operated and disposed off. Thus, create resilience to current and future risks. This research is set to answer the following two questions: What are the key determinants for designing and operating buildings that are resilient to future climate change risks? How to use the key determinants to assess the resilience of existing and newly designed buildings to climate change emerging risks? To pursue the answer for these questions a mixture of research methods are employed. These include semi-systematic literature review to extract the climate risk factors, i.e., physical, economic, social and management, and their associated resilient indicators. The association between the determinants, resilience strategies, and design and operation indicators will be explored using quantitative methods. It is expected that the outcome of this research will be a list of key indicators, probably in the form of an assessment tool, for assessing buildings' design and existing buildings to climate change resilience compliance.

Abstract No. 686: Power-Efficient and Content-Aware Resource Allocation: For OFDM Systems Based on a Utility Function

E. Danish, D.V.S.X. De Silva, W.A.C. Fernando, C. De Alwis, and A.M. Kondoz
University of Surrey
e.danish, d.desilva, w.fernando, c.dealwis, and a.kondoz@surrey.ac.uk

In the wireless network arena, excessive demand on the already scarce resources has raised the awareness of power-efficiency along with bandwidth utilization. Out of this prospect, several research efforts have been focusing on the issue of subcarrier and bit allocation while considering network energy consumption. Consequently, we take those efforts a further step by conducting methodical research of the power allocation schemes, suggesting a rate-adaptive joint algorithmic allocation scheme based on the genetic and greedy algorithms, and proposing a content-aware approach for bit-rate assignation to users based on their perceptual quality assessment. For this purpose, a model of OFDM wireless channels is simulated assuming digital video transmission in a multiuser environment. The proposed rate-adaptive power allocation scheme is evaluated and shown to outweigh other schemes. Furthermore, the QoE-based approach for user required bit-rate assignment is demonstrated to be fruitful in terms of bandwidth use and hence power consumption. In order to balance the demands of required-power and increased-quality in the suggested technique, a utility function is derived on the basis of network operator's advantage. Accordingly, in a comparison of 4 methods used for bit-rate allocation, the genetic algorithm based (GA) is shown to overcome other methods for efficiency with low complexity.

Keywords: resource allocation, OFDM, energy efficiency, content-aware, video transmission

Abstract No. 700: Reactions and Responses to the Risks of Climate Change on Buildings

Abdullah Mossa Alzahrani
The university of Liverpool
eng_amyz@hotmail.com

In the present there are many variables, which have affected and affect our daily life and the future by negative or positive impacts. One of these variables is climate change in our environment. The patterns of climate change threaten the environment in many aspects. The risks from these climatic patterns are based on the level and strength of its causes. There is worldwide argument about the causes of climate change, and according to that there are two groups one says it is a natural phenomenon and the other group says it is a phenomenon of human-induced activities on the earth and considered entering to industry era as one of the important human activities. The presentation provides an overview of the current stage of my research project, including summary of the literature review and outline of the research methodology. The research provides a brief over view about climate change and its scenarios, the impacts of these scenarios on buildings and classified them in a reasonable way to help discovering the relationship between these climate risks on buildings and humanity in terms of their response and reactions. The project aims to conduct a research considering the extent of the impacts of climate change which may affect buildings and to evaluate how people response and react to these climatic risks.

Keywords: climate change, risks and reaction.

Abstract No. 716: Operation and Control of Three Phase Grid Connected Inverter Uunder Abnormal Conditions

A. Althobaiti
Newcastle University
ahmed.althobaiti@hotmail.com

Recently, the increasing penetration has been cited in the demand for distributed power generation. Various configurations based on three-phase inverter VSCs are also used for distributed energy resources like photovoltaic and fuel cell systems. On the other hand, PV converters connected to the grid are commonly subjected to abnormal conditions. The abnormal conditions can be found in terms of unbalanced network conditions, short circuit faults, voltage sags, swell and injected harmonics. It is caused a ripple in the injected power and also high current harmonic distortion in the grid. Moreover, the percentage of the voltage decreases from 90% to 10% for longer than one or two cycles. While resolving these issues, several control schemes are addressed. This research is aimed to investigate the operation characteristics and the control methods that using Resonant controller (PR). The design of a suitable controller to deal with abnormal conditions is addressed. The results were verified experimentally.

Keywords: Grid connected inverter , PR controller , Voltage sags, Harmonic distortion.

Abstract No. 733: Power System Harmonic Analysis Using ETAP

Mohammed Mana Alsaaq
Saudi Arabia
alsaaq_m@hotmail.com

Power system study and analyses are significant parts of power system engineering. Delivering good quality power is one of the major purposes of any electrical service company. In recent times, power quality has been affected in the power network caused by increasing the use in amount of DC devices, non-linear loads. Power system harmonics is one of the main causes for incorrect power quality. This has become a major issue and needs to be solved for power quality problems and harmonic analysis by analysing the electric power network to minimise the harmonics distortion current or voltage. Power system harmonic analysis has been completed using ETAP software, and the entire process is explained in this project. ETAP software performs mathematical calculations of huge integrated power systems with magnificent speed as well, producing output reports. As a harmonic source a general load was demonstrated to inject harmonic current from side to side within the power network. Then, Harmonic Load Flow analysis was implemented and harmonic distortion identified to investigate the outcome of harmonic current. Lastly, an appropriate filter is advised for ETAP software to further improve the quality of the system.

Abstract No. 757: The Influence of Risks on Value Drivers in the Saudi Arabian Construction Industry

Wael Hamad Alattyih
University of Liverpool
Lecturer at the Department of Civil Engineering, College of the Engineering, Qassim University
w.alattyih@liverpool.ac.uk

Value in construction industry can be understood in a multitude of ways including economic, cultural and social interpretations. However, the indicator for perceiving value in construction projects is obtaining success in those projects, which involves tolerance level of risk, reasonable cost, timely and safe completion within specific quality parameters and meeting normal requirements. Some publications mention that value and risk management are two of the main management concepts relevant to the construction industry in improving important demands like quality and cost control. Value management aims to achieve the desired value with lower prices, without any sacrifice in quality and function. Risk management aims to identify, evaluate and choose strategies to maintain uncertainty and risk at a tolerable level for the organisation to maximize its performance. Therefore, this research investigates and reviews of the extant literature on existing value frameworks in construction projects. Representing and identifying the key characteristics of the value methodology i.e. value planning, value engineering and value reviewing during the project life cycle. This research aims to find the impact of risks on value drivers in the whole life cycle of construction projects in Saudi Arabia, and to develop a framework for integrating risk and value drivers in construction projects. The efficiency for delivering value by integrated risk and value drivers has a very significant future as a tool in the construction industry, and has become an important part of the construction industry's development in Saudi Arabia. Therefore, the Saudi Arabian construction industry will obtain significant benefits and milestones as soon as the full applications of value and risk management are implemented for all projects.

Abstract No. 760: Synthesis and Characterization of Components for New Hexaryl Aromatics and Polyphenylene Dendrimers

Jafar Alkabli, Xiao Xiao and John M. Gardiner
University of Manchester
Jejo.333@hotmail.com

This project is directed towards new precursors of tetraphenyl cyclopentadienones (CPDs), alkyne derivatives and derived novel hexaphenylbenzenes (HPBs) as approaches to functionalized polyphenylene- related dendrimers. The synthetic approaches using aldol condensation, Sonogashira coupling and Diels-Alder reactions to assembly the substrates and thence rapidly assemble the polyaryl targets, with work involving a range of newoptimisationsof the chemistry for theseprocesses. The target polyphenylene dendrimers can be constructed by using either divergent or convergent methods and in this project work will explore initially divergent routes to linked polyarlys, including those with differing levels of conformational restriction. A variety of polyphenylene dendrimers will be synthesised in this project and their differing properties evaluated. These include investigating effects of changing the electronics of functional groups (eg including fluorine or other electron-withdrawing groups), but also of steric effects on molecular rotation. These property of differences are intended to result in novel materials with the aim of being able to engineer in new valuable characteristics, relevant to new materials development.

Abstract No. 771: Land Use Planning: Sustainability of Shopping Malls in Jeddah, Saudi Arabia

Yasser A. Qaffas
University of Birmingham
Yasser_sss@hotmail.com

New forms of shopping malls (‘Mollat’) have started to appear in Saudi Arabia since 2000, having a major effect on both land use and the wider society such as sustainability of land-uses and services, urban form, conduction and transportation. These malls consist of two or more floors with a total area between 15,000m and 300,000m . Most have a mix of uses including entertainment, offices, medical centres, food courts and some residential accommodation. The new concept of shopping malls in Saudi Arabia and all the developments that affect the local needs, whether social, economical, psychological or technical, will affect land use directly and dynamically. These changes have brought about a new form of retailing which was not available in the past. Therefore, it is important to examine and analyse these changes and develop strategies and plans for the current and future status of malls planning. This research examines the sustainability of new shopping malls in Jeddah, Saudi Arabia, in relation to land use planning principles. The research question, “Are Jeddah's shopping malls sustainable and why?” and, “What is the impact of the newly developed shopping malls on land use planning of Jeddah City?” are examined through a case study: Jeddah. It examines the shopping system in Saudi Arabia and attempts to analyse the shopping system within the framework of city planning. It assesses the impact of this new style of shopping malls on both the city and the population. It highlight in more detail the positive and negative aspects arising from the evolution in the concept of shopping in Jeddah, examine how planners should deal with these changes, and try to find answers to the main questions of this research.

Keywords: Land-use planning – sustainability – Mixed-use – Shopping malls – Jeddah.

Abstract No. 791: Doping Rutile-TiO2 As Anode Materials for Li-Ion Battery

Nouf Hezam Alotaibi The University of Sheffield, Department of Materials Science and Engineering, Sir Robert Hadfield Building, Mappin Street, Sheffield, S1 3JD
mtp09nha@sheffield.ac.uk

Although widely used, the most promising Li-based energy storage systems still suffer from a lack of suitable electrodes. There is therefore a need to seek new materials concepts to satisfy the increasing demands for energy storage worldwide. TiO2 is a very promising anode material for lithium rechargeable batteries. It has a low-voltage insertion of Li and high theoretical specific capacity. However, Li insertion into bulk rutile is negligible at room temperature due to the dense close packing of the structure and poor Li ionic and electronic conductivity of rutile, which is related to the anisotropy of the rutile structure. To improve the conductivity of rutile, extensive work has been concentrated on structure modification, in particular the substitution of Ti4+ by different valence metal ions. In this study, the effect of doping rutile with different cations on the electrochemical performance is presented. Solid solutions of rutile have been prepared where Ti4+ is partially replaced by a combination of monovalent(Li+)-pentavalent(Nb5+) ions, and divalent(Cu2+)- pentavalent ions (Nb5+). Doped rutile shows a much higher electroactivity towards Li insertion than undoped rutile. The first discharge step reveals that up to 0.6 and 0.22 mole of Li can intercalate into Li-Nb and Cu-Nb co-doped rutile, respectively, at room temperature with a discharge capacity up to 145 and 79 mA.h/g, respectively, while only 0.08 mol of Li can be inserted into undoped rutile. Both undoped and doped rutile TiO2 show excellent retention of capacity during cycling. However until now, a major drawback in the electrochemical behavior of doped rutile is a significant loss of capacity on cycling.

Abstract No. 792: Developing an Integrated System of Auto-ID & Web-Based Technologies for Improving Project Knowledge Management of Public Construction Projects in Saudi Arabia

Sultan Mosfer Algithami, University of Reading
s.m.s.algithami@pgr.reading.ac.uk

In recent years, knowledge management has received considerable attention in many industries. The construction sector is one of the sectors that have realized the importance of knowledge management and its role in improving performance. There is a need to capture, share and utilize knowledge about completed projects using new IT technologies. Information and communication technology (ICT) makes processes faster, more reliable, and able to operate in real time. It embraces many areas and involves many aspects. Web-based technology and Auto-ID technology are subset of ICT. Ongoing research will investigate the main causes of knowledge loss in public construction project and explore the information and communication technologies (ICT) that have been deployed in public construction projects in Saudi Arabia in terms of capture, storage and sharing knowledge. Research will conceptualize and develop an integrated system to manage and retain knowledge in public construction project. A literature review is being conducted to conceptualize theories that underpinning this research. Questionnaire, interviews and brainstorming will be conducted to develop an integrated system for managing knowledge retention in public construction projects. In conclusion, this research will provide some recommendations for public sector in Saudi Arabia for managing knowledge in construction projects.

Keywords: Knowledge management, Web-based, Auto-ID and public construction projects.

Abstract No. 838: Investigation of the top ten causes of delay and cost overrun in public construction projects in The Kingdom of Saudi Arabia

Khalid Alzahrani
Aston University
eng_khalid@hotmail.co.uk

Time delayand cost overrun represents a common issue within the construction industry. It is one of the major causes of financial losses and reduced work efficiency. None of the stakeholders, from the owner and the contractor to the consultant and designer, is immune to its negative effects. In the Saudi Arabian construction industry the issue of time inefficiency is one of the essential problems investigated and evaluated by many researchers. This study has critically analysed the most key causes of time delay and cost overrun in construction enterprises in Saudi Arabia. It investigests the key factors leading to construction project delays and cost overrun and makes new insights into the relevant time management strategies. A quantitiatve and qualitative methods were used to identify five major categories of construction delay and cost overrun in Saudi projects, which comprise of 35 causes. All the project stakeholders - owner, consultant, designer and contractor participated in the interviews and questionnaire evaluation of these causes. The research revealed the most important delay and cost overrun factors; Based on the results, the research provided relevant recommendations to reduce such causes and to feed into possible future research.
Keywords: Time delay, cost overrun, construction

Abstract No. 854: Investigation of Nanomaterial for Antibacterial Applications

Alanod Alshareef
De Montfort University
respectablelady@windowslive.com

The interest in synthesising inorganic nanomaterials for biological application has increased in the last few years, especially for antibacterial applications; including investigations that demonstrate that the size of nanoparticles affects their antibacterial activity. However, it is only recently that efforts have been made towards understanding the relationship between nanoparticle shape and its effects on antibacterial activity. The purpose of this research is to synthesise nanoparticles with controlled shape and size of different metals such as silver, gold and copper and investigate their antimicrobial effects. To achieve this, a number of objectives need to be met: Firstly, investigate methods to control and tailor nanoparticle size and shape. Secondly, assesses the efficacy of the metal nanoparticles as antimicrobial agents against both a Gram positive (Enterococcus) and a Gram-negative (Escherichia coli) organism with reference to their shape and size. The Methodologies in this work will be experimental in the laboratory within Emerging Technology Research Centre (EMTRC) at De Montfort University. In this regards, the nanoparticles will be produced using solution-based techniques that will be characterised by Ultra-Violet/Visible Spectroscopy and Scanning Electron Microscopy. The efficacy of the nanoparticles against both a Gram-negative and Gram-positive bacteria will be investigated via culturing of the microorganism using nutrient agar. The interaction between nanoparticles and bacteria will be assessed by spread plating method. In addition, standard antimicrobial testing procedures will be employed such as disc diffusion method. Finally, microscopy techniques will be used (Fluorescence and Transmission Microscopy) to observe any changes in the cell membrane that might lead to bacteria death. In conclusion, at this stage of my project I have successfully achieved different shapes of the silver nanoparticles such as spherical, icosahedrons and hexagonal plate which can be used as antibacterial agent.

Keywords: nanoparticles, antibacterial.

Abstract No. 858: Microalgae as a platform for biofuels production: Examine the possibility to development of synthetic biology kits for microalgae

Einas Z Najdi
University of Sheffield.
hamys2000@hotmail.com

The large-scale use of fossil fuels and the associated increase in greenhouse gases emissions has encouraged the research and development of CO2-neutral energy resources. Given that substituting vast expanses of agricultural land with biofuel crops threatens global food production, biofuels from microalgae, such as bioethanol and biodiesel, offer a viable but costly solution, at the present. The potential of microalgae to replace food and non-food crops as feedstock for biofuel is strongly linked to their high growth rates, high lipid content, minimal requirements for arable land and water, and their applications in mitigating CO2, and eutrophication from waste-water effluents. Besides, the ability of microalgae to generate commercially valuable co-products increases their chances of being widely used for biofuel production. The major factors determining a viable biofuel production include the selection of strains with high lipid productivity and the production and harvesting costs. High lipid productivity can be either genetically engineered or induced by exposing the microalgae cultures to stress. Further research is needed to develop large-scale culture systems that enable high biomass yield with reduced cost. Current study aims to investigate the variation into lipid production when using different growth conditions. Special attention was given to the potential use of various organic carbon sources (Glucose, Sodium Acetate) for culturing Nannochloropsis Oculata and Dunalilla.Salina with the expectation of obtaining a higher microalgae oil production in Mixotrophic cultures. The seconed part from the project aims to increase the microalgae productivity levels under standardize production systems; the fully integrated microalgal host system products (biology kits) expected to be developed in the near future

Keywords: Biological Engineering, Synthetic Biology, Artificial Biology, Microalgae, biofuels.

Abstract No. 867: Understanding the Bistability of Emerging Two Terminal Resistive and Polymer Memory Devices

Zahra Al Halafi and S Paul
De Montfort University, The Gateway, Leicester, UK.
zh.uk@hotmail.com

Polymer and nanoparticles memory devices have become an important role in the development and improvement of the memory device. This study is aimed to understand the working mechanism(s) and electrical bistability observed in two terminal electronic memory devices based on organic materials and metal-oxide devices, which currently is unclear. This research will be focused on fabricating two types of memory, based on polymers and metal oxides. Devices made as sandwich layer between two metal electrodes using an admixture of small organic molecules, nanoparticles with polymers as active layer, and memory devices made from metal-oxides [3] have been shown to exhibit memory effects. Both show a marked difference in electrical conductivity between the 'on' and 'off' states, but there is still much speculation over the mechanism by which the change in conductivity is occurring. The Spin coating technique will be used to deposit the blend on to silicon and glass substrates to analysis. An investigation it was under taken using Capacitance-Voltage (C-V), Current-Voltage (I-V) techniques to unfurl the charging mechanism(s). Fourier Transformation Infrared (FTIR) Spectroscopy and Ultra-Violet-Visible (UV-Vis) spectroscopy techniques will also be used to understand the memory "element" properties. These results will then be related to conventional conduction mechanism's (through semiconductor and insulator materials) in order to understand fully the mechanisms by which the memory effect can be observed. Also, electrical force microscopy (EFM) will be used to study electrical phenomenon happening at the nanometer scale. In conclusions, in this type of memory it can be show two different conductivity states by applying different voltage biases, while the conductivity state by applying an intermediate voltage prejudice can be read.

Keywords: two terminal electronic memory devices, polymer, nanoparticles, electrical measurements.

Abstract No. 882: Springback Analysis and Optimization in Sheet Metal Forming

Abdulaziz Alghtani, P.C. Brooks, D.C. Barton, V.V. Toropov
Institute of Engineering Systems and Design, School of Mechanical Engineering, University of Leeds, Leeds LS2 9JT, UK
qhtanieng@gmail.com

An accurate prediction of springback in sheet metal forming processes requires complex hardening material models. In this research, numerical analysis of the springback in U-bending was conducted using the well-known Yoshida model, available and known as the YU model in LS-DYNA. This model has seven main parameters which describe the behaviour of the material as it undergoes metal forming processes. The main purpose of this study is to minimize the springback in U-drawing bending process. Initially, mesh sensitivity studies were conducted to derive a suitable mesh that represents an appropriate compromise between accuracy and computer time. It was found that for a relatively small mesh size is more accurate result can be obtained. Secondly, two design variables (die radius and clearance) were investigated. It was found that, the springback increases with the increase of the both variables. Finally the genetic algorithm GA optimization technique was employed using Hyperstudy v11 of Altiar packge. The main objective is to find optimal design variables that provides angles closet to 90 degrees or near. The optimum design variables that

lead to minimum springback angles were 2 and 0.245 mm for die radius and clearance respectively. The optimized springback (θ1 and θ2)for the certain design variable were 92.65 and 92.83 respectively. The error between the optimization results and numerical results was mild. The results show that the blank element mesh density has a significant effect on the springback prediction. Additionally the results demonstrate that certain geometrical parameters have a significant impact in controlling the springback but that optimised values can be identified to minimise the effect.

Abstract No. 899: Improving the Security of Bloom Filter Based Forwarding in Information Centric Netowks

Bander A. Alzahrani and Martin J. Reed
University of Essex
baalza, mjreed@essex.ac.uk

The in-packet Bloom filter forwarding mechanism is a source routing approach used in Information-centric networking (ICN). This mechanism is vulnerable to brute-force attacks that can be used for distributed denial-of-service (DDoS) attacks and unsolicited messages (spam). In this attack, a bad user will generate many packets with the aim to cause several false positive forwarding decisions until he reaches a victim. In this paper we analytically calculate the probability of brute-force attacks and determine the time required by the attacker to launch a successful attack. We find that using scenarios reported by other researchers this type of attacks is achievable in few seconds, which is unacceptable. The paper proposes a solution to mitigate the brute-force attacks by significantly increasing the time before a successful attack. Consequently, it is possible to change link identifiers before the attacker can adapt to the changes. This solution requires using larger size of Bloom filter than the one proposed in ICN in order to get longer attack time while keeping sufficient space for the link identifiers to be included in the filter. We evaluate the proposed solution in terms of network security and scalability. Results show that a better security level can be gained with longer delivery tree to be inserted.

Keywords: Information-Centric Networks; Bloom filter; Brute-force attacks; Distributed denial-of-service attack.

Abstract No. 902: An investigation of energy consumption patterns for residential sector in Saudi Arabia: multiple case study analysis

Naief Ali Aldossary
School of Engineering, Cardiff University, UK
Al-baha University, Saudi Arabia
dr_naief@hotmail.com

The poster provides the evaluations and debates residential energy consumption in Saudi Arabia distinguished by its scorching weather and its geographical position in a global area prominent for its increased energy consumption and carbon emission. The chosen cases within the research comprise several residences situated in various climate situations across Saudi Arabia. The case study concerns three typical houses and three typical flats in the scorching dry climate of Riyadh, three houses and three flats in hot and humid weather within Jeddah City and three houses and three flats the hot dry mountainous area of Al Baha city. The main objective of the evaluation is to identify the average energy consumption of the residential sector in Saudi Arabia based on (a) monthly electricity bills for each residence, (b) occupant behaviour by interviews for every chosen residence, and (c) analyse and discuss the

energy consumption by modelling and simulation for every selected dwelling using IES-VE software tool. The energy consumption for the residential division are thus explored and debated concentrating on structure architectural design, employed building materials and occupant conduct. Subject to failures that were established, several solutions were proposed with the objective of reduce the energy consumption, encompassing shading techniques, employee renewable energy technique, and efficient glazing. The proposed solutions were assessed by remodelling every residence with the use of ISE-VE and the outcome was a decrease in energy utilisation varying up to 37% subject to the local weather circumstances. The benefits of this energy savings was then presented regionally, financially and environmentally if implemented for existing dwellings across Saudi Arabia.

Keywords: Sustainable Construction, Energy Consumption, Building's modelling.

Abstract No. 916: A 3D computational analysis for an optimum heat sink fin and cold plate heights for liquid immersed server

Abdulmajeed Almaneea, N. Kapur, H. Thompson and J. Summers
Institute of Engineering Thermofluids, Surfaces & Interfaces (iETSI), School of Mechanical Engineering, University of Leeds, United Kingdom
eng-1425@hotmail.com

The work in this poster is for sever immersed in liquid. The CPU generate the heat in sever, then the heat is conducted via heat sink. The cold liquid removed the heat from the heat sink. The heat transfers throw the liquid to cold plate by natural convection. The objective of this work to reduce the temperature of the top center of CPU (Tcase) by changing two design variables height of fin (Hfin) and the height of the cold plate (Hcp) to find the optimum values that can offer lowest Tcase in this wok. The model in this work is validated with published experiment and showed a good agreement with experimental work. The model solved as turbulent model based on the Rayleigh number (Ra). The k-ω used as the turbulent model. The mesh sensitivity is checked to make sure that the mesh dose not affected the results accuracy. An Optimal Latin Hypercube design (OLH) of experiment was applied to create 30 different design variables which represent 30 models. The models solved using COMSOL v4.3a. Genetic Algorithm was performed to determine the optimum value. The results showed the optimum solution can reduce 22% of the temperature of Tcase.

Keywords: Conjugate heat, Immersed server, Fin height and cold height, natural convection in rectangular enclosure, Fin in Server.

Abstract No. 925: Environmental Impact of Concentrated Discharges From Desalination Plants on Marine Environments

Mohammed Al-Yaqout, Ahmed Al-Shamri, Bandar Makhdoum,Mashal Alotaibi & Fahad Alharbi
M.alyaqout1993@gmail.com
University Of Dammam

Seawater Desalination is a potential solution for the problem of water scarcity and insufficiency, as population increase water demand and lack of renewable natural water resources in regions such as Kingdom of Saudi Arabia increases as well. The impact of concentrated discharges on marine environment and multifactorial ecosystems in vicinity of desalination discharges is considerable. environmental engineering decisions and planning seek regional and national scale information on influential factors on such processes such as: intake and outfall locality zones, brine, (concentrate) discharge properties, relevant chemical characteristics, local effects, desalination activities and parameters concerning marine life (e.g. temperature, pressure and toxicity). This research work elaborates on availability, accessibility transparency of factors that shape desalination-related policies. The paper also addresses national environmental regulations towards controlling flow of concentrate discharges into receiving bodies of waters. Enormous amount of thermo-energy needed to run desalination plants directly affect environment in a negative way. Desalination process requires huge amounts of electricity to separate drinkable water from dissolved salts and other minerals. The combustion of fossil fuel is the most common method of obtaining that kind of energy, which, may lead to air pollution and global warming effects. Brine water returned to the sea after desalination process contains leftover chemicals and metals from the treatment process that may endanger marine surroundings. The paper addresses environmentally-friendly alternatives to ocean desalination for attaining clean drinking water such as: watershed management, water conservation, and rainwater harvesting.

Abstract No. 968: Fabric efficiency factors in textile reinforced concrete

Fahed Alrshoudi, Phil Purnell
School of Civil Engineering, University of Leeds, UK.
engfahd850@yahoo.com

The use of textile reinforced concrete (TRC) is becoming more widespread around the world, especially for thin concrete structures. Design methods to predict the load-bearing capacity of TRC structural members are currently underdeveloped, which impedes its more widespread use. Factors that have a considerable influence on the ultimate load include the orientation of fibre within the textile (and of the textile within the composite), the length of fibres, and the bond strength. All these factors can be modelled by assessing their contribution to the fibre and/or textile “efficiency factors”, which describe the degree to which the properties of the fibre are mobilised in the composite. Determining these efficiency factors is one of the major steps towards being able to model the ultimate load. In this paper, we present experimental work investigating the variation of fabric bond efficiency factor of uni and bi-directional carbon-fibre textile with volume fraction of textile reinforcement. The initial results show that the fabric bond efficiency factor of (0/90) biaxial and 0 axial carbon textile reinforced concrete beam is ~0.2.

Poster: Humanities

(Short Abstract only)

Abstract No. 62: Cosmopolitanism, Intercultural-Communication And Cultural Difference: The Cultural Practices Of Saudi Migrants Living In The Uk

Mai W Salamah,
King Abdulaziz University, Jeddah, Saudi Arabia
Nottingham Trent University, Nottingham, United Kingdom

The project will present a piece of novel research because it investigates an issue that has been neglected in the field of cosmopolitanism, with regard to communication and cultural differences in the context of everyday life. The study aims to investigate the process of intercultural communication of Saudi diaspora in the UK in the context of cultural differences in the areas of education and business; as well as, to explore the influence of the communication process on the intercultural competence in the everyday life of cosmopolitan Saudi migrants. The methodology in this project will be a qualitative combination of in-depth interviews and participant observation. A sample of 20 Saudi students and businessmen/women living in the UK will be interviewed in order to investigate about their cultural experiences in the UK. The reason for choosing 20 participants for the sample population is to get an in-depth understanding of their motivations and experiences as migrants living in a multicultural society. The sample will be comprised of academics and business people because they are the most representative group of the Saudi population living in the UK. They will be selected from the Saudi social club in Nottingham and Manchester, the Saudi cultural bureau and the Saudi embassy in London which are significant spaces where the Saudi community circulates. In addition to the interview, three Saudi families living in the UK will be involved in the participant observation method during a period of three months to focus on their daily activities in-depth in the domestic and public home spheres. The sample of the families will be chosen from the participants of the interviews. The result shows that most of the participants have experience intercultural communication positively in term of dealing with people from different culture and accepting the cultural differences in the personal level. The participants also agreed that Islam principals' media and cultural values never became a barrier to deal with cultural differences. In conclusion, most of Saudi people living in the UK have cosmopolitan outlooks in terms of accepting differences and being open minded.

Abstract No. 287: The explanation of the Social Representation "Obedience and Disobedience" and the Importance Cross-cultural

Hana Alharbi
Ministry of Higher Education, King Abdullah Scholarship Program
University of East London

This poster seeks to present a brief view about my MSc thesis which titled "The Development of a Measure of Obedience and Disobedience; A Qualitative Exploration of the Social Representation of (Obedience and Disobedience)". This research is underneath the social psychology approach. Social psychology has for many years been extensively considering two types of social behaviour: obedience and disobedience. However, compared with the frequently discussed obedience (e.g. Milgram, 1967) disobedience has received relatively little attention. This research aimed to begin the process of developing a measure of people's tendency toward disobedience. In order to progress this, it is necessary to better understand how people interpret and conceive obedience and disobedience. Specifically, the researchers were interested in comparing the responses to a questionnaire as part of an exploration of individual perceptions of what is meant by disobedience and the eventual design and validation of a new measure. 50 participants completed questionnaires of

obedience and disobedience. The results were analysed using thematic analysis to identify the superordinate and subordinate themes, 'Authority' and 'Social norms' emerged as superordinate themes in both analyses, and a third 'Religious' superordinate theme emerged from the responses to the obedience questionnaire. The analysis revealed that the respondents all held a very traditional view of both obedience and disobedience. The study enabled progress on the development of a measure and identified some interesting future research questions relating to social norms. Obviously, the purpose of this poster is to understand how individuals interpret and conceive obedience and disobedience. Furthermore, will discuss the importance of differing opinions in terms of social representation of both aspects obedience and disobedience cross-cultural, which would be one of the recommendations of future study.

Keywords: Social Representation, Obedience, Disobedience, Cross-cultural.

Abstract No. 518: The Impact of Media Globalisation on Saudi Arabian Youths' Culture: A Case Study of Twitter

Abdalhadi Almfleah
k5k5k5@hotmail.com

The objective of my research is to investigate the impact of media globalisation on the Saudi Arabian individuals aged 20-35. Additionally, this research investigates the impact of social media like Twitter on the youths in Saudi Arabia. Thirdly, this research investigates the possible government and private organisations such as Non-Governmental Organisations' (NGOs) interventions in Saudi Arabia to curb the impact of media globalisation steered by social media like Twitter. A quantitative approach using a Web-based questionnaire administered via Survey Monkey is employed where 1,843 questionnaires are completed within a seven-day period. This study finds out that media globalisation has a significant impact on the local culture of the youth in Saudi Arabia. However, the research further establishes that Twitter awareness does not affect cultural aspects per se. Instead, it is the effects of Twitter on a single aspect of culture that leads to effects on other cultural aspects like lifestyle, traditions and history, knowledge building and trends among others. Therefore, intervention initiatives by NGOs and the government are best placed to handle the effects of Twitter on the various cultural aspects. Chief among these recommendations is the need to initiate programmes that grant the youth access to culture and promote youth occupation in order to empower them.

Abstract No. 567: Developing A Strategy To Improve The Animation Industry In Saudi Arabia

Ohud Rasheid Alharbi
PhD student at De Montfort University
o.r.w.a@hotmail.com

It is not hard for any observer to see the dominance of the Japanese, European and North American animations in the animation industry at the global level. On the other hand, it is hard to locate any animation characters that originally come from Saudi Arabia. Therefore, this study focuses on the research of animation industry in Saudi Arabia This research aims to develop a strategy to improve the animation industry in Saudi Arabia by examining the existing Saudi animation industry to identify the factors that hinder or motivate animation industry in Saudi Arabia. Moreover, it aims to examine the success of establishing industrial cluster in the animation industry. The methodologies that have been used to accomplish the study aims are mixed methods including qualitative and quantitative methods. Furthermore, it

adopts a comparative approach since it compare four case studies through analyzing its industrial structure and its strategies for the animation industry. Beside that, it forms a research model that gives the foundation for the study. This research model was designed by choosing four factors. The rationale for choosing these four factors is that they have been highly considered in the existing literature on the issues of developing industries. Then, the research model will be tested by conducting the primary research that includes: interviews, focus group and field study in the case studies. The outcome of this study will present a strategy for improving the Saudi animation as well as document the history of Saudi animation industry.

Keywords: Saudi Animation, Animation industry, Developing strategy.

Abstract No. 607: Understanding the realization of culture heritage in video game contexts

Majed Slalah Balela
Balalaa50@yahoo.com

The purpose of the research is trying to examine how a culture is represented in modern video games, and also, how the designers of video games understand the difference elements of culture within digital video games. There is a clearly evidence of substantial investigative work that takes place in the construction of video game environments, there is still more that can be done to improve instances of miss-representation within such contexts of video game's culture. In this research, qualitative is used, as a method in order to understand the phenomena of environment video games culture. To obtain that clearly, the study will use observation some of the video games that focused on culture and interviewed with designers of video games as methods in order to pick up the data of the study. This study seeks to make the culture for designers of video games clearer and easier to understand. From this perspective, we are trying to reduce the mistake of culture that happened in some video games. Moreover, the study has created a new model of culture dimensions as solutions to understand the culture from perspective of both designers and players video games. The difference types of culture such as culture, culture heritage and culture artifact have been explained and also the most important differences between the culture of Middle Eastern and Western have been discussed in the literature review. To find more information about the natural of video games culture, the study will use different types of methods, such as, observation the culture in some video games and also interview with the designers of video games. As a contribution, the study will create a new model of dimensions video games culture that including the important elements of culture in order to make video games culture easier to understand from the designers who work in video games industry.

Abstract No. 655:Three-Dimensional Images within Mist Screen

Amani Althagafi, Professor. Martin Richardson
Umm-Al Qura University, Makkah, SA
De Montfort University, Leicester, UK
amany_abed@hotmail.com

This project focuses on the uses of high-tech, and into the gain of an in-depth understanding of holography and 3D imaging. The technology of holography has assisted in creating an innovative concept in artistic portrayal through projecting holograms in 3D on a mist screen. This research aims to develop a novel holographic process that may be applied to three-dimensional displays and contribute to our better knowledge of applied optics including laser speckle and light dispersion through diffused surfaces. Furthermore, it aims to research and develop a new form of display system, however, it will make use of the current technology in display systems, to test for the first time, the projection of holograms onto a mist display system. Moreover, it aims to exploit the possibilities of the use of high technology for holographic documentation of unique items to record and preserve history. In particular, items from historical and archaeological Saudi heritage. This research will focus mainly on objects from Saudi Heritage, which have been used in traditional costume and Jewelry. In order to experiment with hologram projection onto mist, several steps should be taken to determine the methods needed to create a display system that can project holograms successfully. This research will use the mixed research method consisting of quantitative and qualitative data collection, it could be described as an inquiry mode research. To conclude, it addresses the issue of how to then capture the mist in a controlled technique to create a 'curtain' of mist. However, the airflow control system may prove suitable for next step in this experiment design. Importantly, the use of mist has been chosen to be the 'screen' onto which the projection will happen. The choice of the mist is due to its ability to scatter light and maintain a 3D image auto stereoscopic.

Keywords: Hologram, three-dimensional, mist, archaeological and stereoscopic.

Abstract No 694: The Kiswah at Makkah: an ethnoarchaeological study

Noha Mohammad al-Sharif
University of Winchester

In my thesis I will be analysing the fabrication and design of the Kiswah, the black silk covering of the Holy Ka'ba at Makka al-Mukarrama (Saudi Arabia) from the Ottoman period (c 15th Century) to the present day. Today the Kiswah cover is placed over the Holy Ka'ba (shrine) once a year in the month of the Islamic pilgrimage (Hajj). It is made anew during each year for the year following at Makka al-Mukarrama in the factory established in 1927 at the Holy City by the Saudi government. Although seemingly just a ritual covering of one of Islam's most important holy shrines, its iconography and change over time reflects wider ritual and socio-political change. My research combines the following methodologies: ethnoarchaeological, art-historical and architectural. The making of the Kiswah today preserves an ancient technology transformed into increasingly modern form in the Saudi Arabian modern Kiswah factory at Makka al-Mukarramah. This is the first study which views the tradition of Kiswah fabrication and design against a wider social and cultural framework

Keywords: Makka al-Mukarrama, Ka'ba, Hajj, Kiswah, Tiraz, Mahmal, Ottoman Kiswah factory.

Abstract No. 836: A Structural and Contextual Study of Idiomatic Expressions in Arabic (Saudi press).

Hijab Mohammad Alqahtni

Interpreting the notion of idioms in Arabic linguistics remains a problematic issue for both users and learners of Arabic. This is due to the fact that these idioms are deeply-rooted in the Arabic culture. Thus, a sou interpretation of these idioms requires contextualising them both linguistically and culturally. In this context, the present research suggests a contextual view of meaning in the treatment of idioms in Arabic. This contextual treatment is based on the argument that there is a strong correlation between idioms, context and culture. Another central goal of the current research is to explore the notion of idioms in Arabic from a structural perspective. This will be approached through an examination of both the internal and external relations involved in the use of idiomatic expressions in Arabic. Syntactic variations involved in the use of Arabic idiomatic expressions will also be examined.

Methodology:

1. Examination the notion of idioms in Arabic from a structural perspective;
2. A contextual view of meaning in the treatment of idioms in Arabic.

Results:

- Structural analysis of idiomatic expressions in Arabic.
- Variations in the structure of idiomatic expressions.

Conclusion:

1) The idiom has a strong grammatical correlation between its components i.e. verb + subject, preposition phrase.
2) Also the use of idioms involves structural relations with surrounding co-text.
3) Variations in the structure of idioms are obvious. While there are fixed idioms, there are also some idioms, which are flexible to accept structural changes.
4) Linguistic/ co-text context is important in determining the literal or figurative meaning of idiom.
5) To understand some idiomatic expressions, the dimension of cultural context is required.

Keywords: A Structural, Contextual, Idiomatic Expressions, Arabic, Saudi.

Abstract No. 919: 'Mysticism' in Victorian Poetry and Poetics: A Constructivist Approach

Nada Alotaibi
University of Leeds, UK
Umm Al-Qura University
ndotaiby@gmail.com

This study investigates the relationship between Victorian poetry and mysticism, by adopting an approach that emphasizes the textuality and contextually of mysticism, rather than one that focuses on its phenomenological aspects. The approach comes as a response to the growing consciousness that, as far as the phenomenon of religious experience is concerned, epistemological certainty is impossible, and that what we normally refer to as the world's 'mystical traditions' is nothing but a chain of documents written within these traditions. It is particularly against the common essentialist interpretive strategy which assumes that mystical poetry is primarily a record of a private (and possibly supersensible) state of consciousness, and that it is the business of the literary critic to determine its mystical status. To assert the textuality of mysticism, on the other hand, is to view such poems as

public documents, with a communicative and performative function. Accordingly, the subject of analysis, in this study, becomes an inquiry into the cultural politics involved in Victorian poetry's various forms of interaction with 'mysticism', as a de-ontologized' category. Two examples are presented here. The study argues that, as one form of interaction with the mystical, Victorian poets and critics have attempted to defend mysticism against charges of 'obscurity' and 'vagueness', giving it instead the positive connotation of 'ineffability'. According the contextual-oriented approach of this study, this defense turns out to be a defense of the cultural authority of poetry against the empiricism and material philosophy of the nineteenth century. Moreover, applied to Tennyson's 'The Holy Grail', this type of analysis maintains that the poem should be read as an apologia for religious experience, one in which Tennyson consciously seeks to construct a 'mysticism' that is in keeping with the imperialist and scientific aspirations of the age.

Keywords: Victorian Poetry, poetic theory, mysticism, religion, science

Abstract No. 920: An Approach to the Editorial Problems of Double Falsehood

Naseem Alotaibi
University of Liverpool
Umm AlQura University

This study discusses the recent Arden Shakespeare edition of Double Falsehood (2010), a controversial play adapted in the eighteenth century by Lewis Theobald, and claimed to have been based on a 'possible' collaboration between William Shakespeare and John Fletcher. Double Falsehood basically gets its claim to a Shakespeare Arden edition, not on account of the existence of an original manuscript, but rather, on the basis of very little external evidence, one of which has been dismissed by some scholars as extremely unreliable. This study's main concern with the Double Falsehood problem focuses on the editor's approach in dealing with this complex text, and most importantly, on whether or not the edition solves the Double Falsehood enigma. The complexity of the text lies in how it poses a number of editorial problems: (1) the play is an adaptation; (2) a collaboration; and most importantly (3) a work of contested authorship. As a solution to these major editorial problems, the study employs the approach adopted by John Jowett in two of his editions: Measure for Measure and Sir Thomas More. In editing those plays, Jowett departs from the traditional reproduction of copy-text. He instead focuses on the importance of highlighting the process of adaptation, which he achieves by arguing in favor of presenting the text as a stratified text (the text in its multiple layers of transformation), as opposed to a linear text (the text as it survives in its printed form). Thus, any evidence of textual transformation as a result of revision/adaptation, argues Jowett, must be fully represented on the edited text, rather than manually reproducing the document. This study is aimed to highlight the ways in which the Arden Shakespeare's presentation of Double Falsehood as a linear text can be potentially misleading.

Keywords: Shakespeare, Lost Play, Double Faleshood, Theobald, Textual Studies, Arden, Hammond, Jowett.

Poster: ICT

(Short Abstract only)

Abstract No. 52: Domin-Specific Language for Enabling End-Users Model-Driven Information System Engineering

Ahmad Faisal Subahi
Department of Computer Science, University of Sheffield, UK.
ahmedsubahi@hotmail.com

In the real-world, there is a demand to adopt an accurate information system that satisfies the requirements and used effectively for the business. However, having vague or misinterpreted requirements causes errors and extra costs. Therefore, domain experts, who clearly understand the business logic, goals and aware of what exactly they need inside organisation without professional software developing skills, should play key roles in the development lifecycle using high level tools. There are many approaches that aim to tackle these issues and reduce the gap between initial requirements and implementation and accelerating the development process, such as Model-Driven Engineering (MDE), Domain-Specific Languages (DSL) and End-user Development (EUD). Although the Unified Modelling Language, UML, is commonly used to express structural and behavioural of a system within MDE approaches, it suffers from semantics ambiguity and complexity issues. This produces inconsistent UML models difficult to interpret. This lack of formality and more make UML cannot serve as a basis for MDE from business-users' perspective. This Paper presents an on-going research in the area of Model-Driven Engineering (MDE). The premise is that UML is too unwieldy to serve as the basis for model-driven engineering, from business-users' perspective. We need a smaller, simpler notation with a cleaner semantics. We propose ideas for a simpler Domain-Specific Language (DSL) notation with a clean semantics to achieve Business-User Model-Driven Engineering. The work includes a comprehensive revision on UML notations and semantics. A selection of the model are abstracted or replaced in our approach. As a result of this, we introduce a new MDE modelling language for supporting the end-users software development, known as mML, or the Micro-Modelling Language. The new Language has graphical notations, with underlaying XML parse trees that are formalised using First-Order Predicate Logic (FOPL).

Keywords: Model-driven Engineering, Model Transformation, Code Generation, Domain-specific Languages.

Abstract No. 58: Identifying the Determinants of Cloud Computing Adoption in a Government Sector– A Case Study of Saudi Organisation

Majed Alsanea, David Wainwright
Northumbria University, UK

majed.alsanea@northumbria.ac.uk, david.wainwright@northumbria.ac.uk

The adoption of Cloud Computing technology is an essential step forward within both the public and private sectors, particularly in the context of the current economic crisis. However, the trend is struggling for many reasons. The purpose of this study is to establish the foundations for the development of a framework to guide government organisations through the process of transferring to Cloud Computing technology. The main aim of this research is to evaluate the factors affecting the adoption of Cloud Computing in the government sector by conducting a multiple case study of Saudi government organisations, and to develop a Cloud Computing adoption framework. Investigating and identifying the main factors affecting the adoption of Cloud Computing is done by examining the literature and by conducting a mixed-method investigation. The most significant concerns are Service Quality, Usefulness, Security, Complexity, Cost, Organisation Size, IT Infrastructure

Readiness, Senior Management Support, Feasibility, Trust, Organisation Culture, Organisation Structure, Privacy Risk, Direct Benefits, Indirect Benefits, Culture, External Pressure, Industry Type, Government Support, and Regulatory Concerns. This study will apply the TOE (Technology-Organisation-Environment) framework and the Iacovou model to obtain improved knowledge, to better determine the most suitable Cloud Computing adoption factors. These models form the conceptual framework for this study. Two phases are performed in order to collect the required data: firstly, a questionnaire-based survey; secondly, interview-based case studies approach. The data and hypothesis are analysed and tested using descriptive statistics, AHP, multi-regression and Pearson Correlation. SPSS is used to analyse the collected data and all statistics and figures are extracted from this software. The initial results show some of the main factors that could affect the adoption of Cloud Computing, and show the relationship between the dependent and independent variables which indicate the positive and negative impact.

Keywords: Cloud Computing, Public Sector, Technology Adoption, IS innovation theories.

Abstract No. 155: Yusr: Speech Recognition Software for Dyslexics

Amal AlGhamdi, Reem AlSaggaf, Sultana AlSahafi, Heba Aldebari and Maha AlZebaidi, Dr.Mounira Taileb
King Abdul Aziz University,
amal_alghamdy@yahoo.com, mounira.taileb@gmail.com

Learning disability is a classification including several disorders in which a person has difficulty learning in a typical manner. Reading disability or difficulties in reading is one of these disorders. Many researchers assert that there are different types of reading disabilities, dyslexia is one of them. Dyslexic children suffer from reading difficulties. One of their core problems is the difficulty to learn how the printed word maps into spoken language. According to their needs, YUSR was built to be an assistant application for dyslexic children in learning Arabic letters pronunciation. This application aims to develop skills of reading and spelling, it provides an environment for dyslexics to use their senses in learning (vision – speech – hearing). YUSR is the first Arabic software directed to dyslexics. It is automatic speech recognition (ASR) software based on analyzing phonetic isolated Arabic alphabet letters. Features of the sound signal are extracted using Mel-Frequency Cepstral Coefficients (MFCC).The statistical model used in the recognition process is developed using Hidden Markov Model (HMM) and implemented in Hidden Markov Model Toolkit (HTK toolkit).The sound files used to train the application are prepared and recorded by the developers. The application is trained by more than 400 samples of the Arabic Alphabets with different volumes and sounds of males and females to provide variety. The recognition rate achieved by the application is 82 %.The kiddy user interface provides letter learning level, where the speech recognition is connected to it as a function with listening and writing simulation functions by taking into account the causes of confusion for dyslexics. In addition, another level displays the letter position in the word to support the vision sense and provides the words pronunciation to support the hearing sense; this can be further developed by including speech recognition for spoken words in the future.

Abstract No. 168: Developing a Framework for Evaluating e-Government Portals' Success

Obaid Almalki
Business and Management Research Institute, University of Bedfordshire, UK
almalki_obaid@yahoo.com

Many governments around the world have invested heavily into the e-government systems. They have been making significant efforts to provide information and services online. However, previous research shows that countries are varied in the rate of adoption and success of e-government systems. After the initial review of literature, an exploratory study was conducted as the first stage towards accomplishing this PhD study. The aim of this exploratory study was to explore the main aspects and factors for evaluating e-government systems success. To achieve the aim of this study, interviews were conducted with 49 Saudi citizens to explore their perceptions on e-government systems and their success. The findings reveal many issues regarding the factors that affect the e-government systems success. The initial framework was proposed as the result of reviewing literature and conducting an exploratory study. Then, a Delphi study was conducted as the second stage to investigate the relationship between e-government portals success and the ten distinct value types identified by Schwartz (1992). The aim of this Delphi study was to investigate which value types are particularly relevant to e-government portals' success or have a significant impact in the context of e-government portals; those values which were decided as the result of this Delphi study will be used later in my PhD research. Finally, a framework was finalized as the third stage of this PhD study. It uses different theories/models for evaluating e-government portal success from individuals' point of view. The proposed framework will be empirically tested in the context of e-government portals in Saudi Arabia. This framework integrates DeLone and McLean IS success updated model, Technology Acceptance Model (TAM), self-efficacy theory, perceived risk and theory of personal values.

Abstract No. 172: Euler Diagrams Usability

Mohanad Alqadah, Dr Gem Stapleton, Prof. John Howse, and Dr Peter Chapman
The School of Computing, Engineering and Mathematics University of Brighton, UK
msa12@brighton.ac.uk

Euler diagrams, used to teach set theory in schools and to build other visual languages, are known to be an effective representation of information when they are well-matched and well-formed. However, previous research used relatively simple diagrams to convey information, while in real world applications Euler diagrams can become more cluttered. Therefore, we want to know how much information we could put in a single diagram before user understanding is significantly reduced. A within group study was used with three levels of diagram clutter. The diagrams were designed using the results from previous studies the effect of layout on comprehension. The diagrams visualised information in a context familiar to the participants, to ensure any participant difficulties were solely as a result of interacting with the diagrams. We found a significant relationship between error rates, question completion time and complexity of the diagram (p-value<0.05). We observed that the error rate and the time taken to interpret Euler diagrams increase with the increase of the diagram clutter. Furthermore, we found a significant relationship between error rates, question completion time and complexity of the region where the answer was placed (p-value<0.05). We observed that the time taken to interpret Euler diagrams increases when the region clutter increase. Additionally, the medium region clutter had the highest error rate compared to the low and the high region clutter. Moreover, we found a significant interaction between the

overall diagram complexity, and the complexity of the region where the answer was placed (p-value<0.05). The medium region clutter showed an interesting result because it had the highest mean of the time taken to interpret Euler over the three diagram clutter. This could be because of the high error rate in the medium region clutter. In conclusion, both of diagram clutter and region clutter impact the interpretation of Euler diagrams.

Abstract No. 173: Computational Intelligence for Constructively Aligning Instructional Designs

Alaa Abdullah Bafail, Dr. Jonathan Tepper and Ann Liggett
School of Science & Technology, Nottingham Trent University,UK
alaa.bafail2009@my.ntu.ac.uk, alaabafail@yahoo.co.uk

The wide spread of models, frameworks, and toolkits in learning design serve to support teaching practitioners in producing well-structured learning designs for students. The concept of constructive alignment is considered to be one of the most influential ideas in higher education. Good teaching system ensures that all aspects of teaching, from intended learning outcomes, the teaching and learning activities used, and the assessment tasks are all aligned to each other (Biggs, 1996). This will guarantee effective student engagement and well-aligned teaching practice. The current learning design systems inherently lack an objective metric system which is able to measure the degree to which an educational design is well-formed according to the principle of constructive alignment theory. Such a metric system would enable teaching staff to make more informed design decisions such as which profile of activities/assessments to use for a particular learning outcomes and cohort needs. Therefore, this research project attempts to augment the current learning design system, such as the Learning Design Support Environment (LDSE) (Laurillard, 2011, 2012) with a metric engine by using and modifying Tepper's alignment metric (Tepper, 2006) to intelligently guide the formation of learning design patterns exported from the LDSE to create visibility of misalignment and to thus promote better aligned designs. The research project, has introduced a model that is based on an alignment metric computation to analyse a number of module design patterns, and to demonstrate successfully how it is possible to objectively measure and compute the degree to which a module design attains alignment and balance between all educational components in relation to the intended learning outcomes. This will help teachers and lecturers to quantitatively visualize the level to which their module or session design is constructively aligned and to be offered alternative design decisions to encourage stronger alignment. This session presents the progress of the system so far, highlighting strengths of the approach, current challenges and future work.

Keywords: Constructive Alignment Model, Alignment Metric, Bloom's Taxonomy, Educational Design Components, Alignment Tree

Abstract No. 226: Computational Intelligence for Constructively Aligning Instructional Designs

Alaa Abdullah Bafail, Dr. Jonathan Tepper and Ann Liggett
School of Science & Technology, Nottingham Trent University, UK
alaa.bafail2009@my.ntu.ac.uk, alaabafail@yahoo.co.uk

The wide spread of models, frameworks, and toolkits in learning design serve to support teaching practitioners in producing well-structured learning designs for students. The concept of constructive alignment is considered to be one of the most influential ideas in higher education. Good teaching system ensures that all aspects of teaching, from intended learning outcomes, the teaching and learning activities used, and the assessment tasks are all aligned to each other (Biggs, 1996). This will guarantee effective student engagement and well-aligned teaching practice. The current learning design systems inherently lack an objective metric system which is able to measure the degree to which an educational design is well-formed according to the principle of constructive alignment theory. Such a metric system would enable teaching staff to make more informed design decisions such as which profile of activities/assessments to use for a particular learning outcomes and cohort needs. Therefore, this research project attempts to augment the current learning design system, such as the Learning Design Support Environment (LDSE) (Laurillard, 2011, 2012) with a metric engine by using and modifying Tepper's alignment metric (Tepper, 2006) to intelligently guide the formation of learning design patterns exported from the LDSE to create visibility of misalignment and to thus promote better aligned designs. The research project, has introduced a model that is based on an alignment metric computation to analyse a number of module design patterns, and to demonstrate successfully how it is possible to objectively measure and compute the degree to which a module design attains alignment and balance between all educational components in relation to the intended learning outcomes. This will help teachers and lecturers to quantitatively visualize the level to which their module or session design is constructively aligned and to be offered alternative design decisions to encourage stronger alignment. This session presents the progress of the system so far, highlighting strengths of the approach, current challenges and future work.

Keywords: Constructive Alignment Model, Alignment Metric, Bloom's Taxonomy, Educational Design Components, Alignment Tree.

Abstract No. 238: Maintaining RDF Views in RDF Triple Stores

Sana Al Azwari1
Supervisor John Wilson
Department of Computer and Information Sciences, University of Strathclyde, Glasgow
sana.al-azwari@strath.ac.uk

RDF is widely used in the Semantic web for representing ontology data. Many real world RDF collections are large structures. Such large RDF collections evolve in consequence of their representation of changing world. Therefore, this ever-changing data needs to be managed and updated when a change occurs. The regeneration of RDF data after the application of a change or a set of changes might be expensive. This research is inspired by the process of view maintenance in databases and focuses in particular on updating RDF collections by automatically generating the appropriate SPARUL statements rather than regenerate an entirely new structure. The aim of this work is to assess the performance of basic view update operations on RDF data structures. This assessment involves three aspects: the first aspect is a comparison between insert and delete operations and in particular whether these operations use equivalent CPU time. The second aspect is concerned with assessing the performance of physically updating the RDF structure in comparison with the performance of searching the structure before updating. Finally, the third aspect is concerned with the issue of whether data volumes affect the issues discussed in the first and second parts. To assess the performance of view update, this work involves an experiment that compares two different update approaches. In the first approach, a fixed and variable number of triples are selected randomly and updates are performed against the in-memory view of the RDF structures. While in the second approach, specific triples are selected to be updated. Results from the experiment show that the random approach can process faster compared to the specific approach. However, in the random approach no searching is involved in the update process as the case in the specific approach. In addition, increasing the number of updates has a significant effect compared to increasing the size of the RDF structure.

Abstract No. 267: ICTs and Saudi Journalists: How journalists are practicing journalism in the age of Digital communication technologies?

Ahmed Ali Alzahrani
(BA, MA, PhD Student); Journalism Dep. University of Sheffield. UK
ahmed.alzahrani@sheffield.ac.uk

This study investigates the uses and effects of information communication technologies (ICTs) on journalism practices in Saudi Arabia. It tries to explore how Saudi journalists evaluate the impacts and uses of ICTs in journalism practices in Saudi Arabia. The study finds that 22 per cent of Saudi journalists use the internet, in their working routine, for five to eight hours a day, while 43 per cent spend from two to five hours using the internet. Saudi journalists agree, or strongly agree, that ICTs have affected all aspects of journalistic production process: their speed, their quality, their methods of gathering and editing news, and their interactivity with the audience. A large percentage of Saudi journalists tend to use Facebook and Twitter in their jobs. Finally, 60 per cent of respondents say that ICTs have improved journalistic quality; however, 45 per cent agree that ICTs put more pressure on journalists. Finally, Saudi journalists become more engaged with different tasks at the same time. This multiplication of tasks put extra pressure on journalists; 45 per cent of journalists agree that ICTs put more pressure on their working routine, whereas 47 per cent said that ICTs put less pressure on them, while only 6 per cent refuted changes in working pressure. In addition, ICTs create new challenges in their careers, with 90 per cent of the responding journalists strongly agreeing that working in a digital environment requires the continuous development of certain skills. Around 65 per cent strongly agree that ICTs create a new era of challenge and difficulty, while just less than 60 per cent strongly agree that new ICTs in the journalism industry will create promising journalistic practices, and will support a journalist's career.

Keywords: Saudi Journalists, ICTs and Journalism, Saudi Media.

Abstract No. 272: Transformation to Mobile Learning at the Nursing Institute in the Armed Force Hospitals in the Kingdom of Saudi Arabia based on Organisational and Technological Perspectives

Rahimah Abdulrahman, Dr. Clive Chandler, Dr. Alan Eardley
Faculty of Computing, Engineering and Sciences,
Staffordshire University Beaconside, UK
dr.rahimah2013@gmail.com

The overall aim of the research is to explore the main issues that impact on the deployment of ML in nursing institutes in the KSA at the Armed Force Hospitals (AFH). This is in order to be able to develop a generic model to assist the educational policy makers and implementers of ML to treat those issues effectively. Specifically, the research will explore the concept of ML, together with the reasons for the adoption of the learning method by educational institutes in the Kingdom; identify and analyse the main organisational and technological issues that relates to the adoption of ML methods; develop a model of ML in order to determine the main organisational and technological issues that affect the adoption of ML; investigate the perception and attitude of the students of the Nursing Institutes to the use of ML technologies for their programmes based on their experiences; conduct a validation of the ML model with the use of the nursing Institute of the AFH and evaluate the research project as a contribution to the body of knowledge. Activity Theory (AT) will be adopted for

the study due to the fact that it provides a conceptual framework that engenders an understanding of the structure, development and the context of computer-supported activities. The study will be adopted a set of data collection methods which engage 100 students in a quantitative survey, while 10 students and 20 course tutors are engaged through in depth qualitative studies. Also, observational techniques will be deployed to get first-hand information. The research will generate an exhaustive classification of the main organisational and technological issues as they relate to ML for the KSA. The original contribution will be a framework for developing ML material for work-based learning in the hospital environment that can have a general application.

Keywords: M-learning; saudi arabia; activity theory.

Abstract No. 281: Blind De-convolution Based On A Robust GCD Sylvester Matrix Method

Nora Alkhaldi * and Joab Winkler *
* Department of Computer Science, University of Sheffield, Sheffield S1 4DP, UK
n.alkhaldi@dcs.shef.ac.uk, j.winkler@dcs.shef.ac.uk

This research aims to solve the blind image de-convolution problem using a robust Sylvester matrix approach. The blind image de-convolution refers to the process that estimates an original image from its distorted versions, using partial information about the distortion function. Several algorithms have been established to estimate the original image based on the computation of the greatest common divisor (GCD) of two univariate polynomials. However, since the computations are performed in a floating-point environment the GCD computation algorithm is not appropriate and instead it requires an approximation to the GCD. It can be found in real world problem from astronomy, videoconferences to medical X-ray imaging applications. Here I present a new approach that does not require any prior knowledge about noise level. The computation of an AGCD is obtained by calculating the degree first, and then its coefficients. In particular, the degree of an AGCD is computed by using two methods that are residual and first principal angle. The 1D and 2D blurring have been considered, given one image with measurement errors and additive noise. The obtained results using GCD Sylvester matrix method show it can handle the measurement errors and the additive noise in a competent way.

Abstract No. 290: Diabetes Management for Under Served Populations: A Mobile Technology Solution

Bander Alkhudairi
Computing, Engineering and Mathematics
University of Brighton, UK
b.alkhudairi@brighton.ac.uk

In the Kingdom of Saudi Arabia (KSA), geographic isolation, culture, and an unequal distribution of healthcare resources have created severe shortages in healthcare access. A large part of the KSA's rural population, including women and children, expatriate workers and those with disabilities are largely detached from accessible and efficient healthcare support (Twaddle, 2002; Marsh, 2006). Additionally, lack of access to any institutional care, lack of information about healthy behaviours, and lack of finances have combined to result in an alarming growth of chronic disease among these populations in the KSA. Prominent among these disease epidemics is Type II Diabetes. In emerging markets like the KSA that have poorly distributed healthcare resources, but have widespread mobile connectivity and

high mobile device penetration, an immediate solution to this challenge is mobile health. Mobile health (or "mHealth") leverages wireless infrastructures, clinical tools and consumer electronics, and is scalable, adaptable, cheap and effective. MHealth apps can be tailored to address specific health issues like diabetes, and can be further refined to target specific populations. These apps can be employed to educate consumers, modify patient behaviour, establish communication between doctors and patients, remotely monitor patients, support field staff, track disease outbreaks, and to share patient data among care teams. The principal aim of this study is to explore the potential for mHealth on diabetes in Saudi Arabia. It examines the optimal configuration of an mHealth app solution, from the physician, patient, and technical perspectives, and how effectively such a new solution can impact population health in the KSA. Through published research, surveys and interviews, my investigation will determine the most efficient mobile app strategy, product characteristics, development hurdles, and implementation to address the needs of diabetes management among KSA's patients and providers.

Abstract No. 292: Risk in information technology projects: a complexity approach

Fahad Issa Harbi.
University of Liverpool, UK
fd_alharbi@hotmail.com

Purpose: This proposal aims to assess the impact of the complexity of risk strategies in the IT project approach used in Saudi Arabian public sector, as well as to investigate practices and procedures that used in Saudi IT projects in order to set up a framework to achieve the project's success, to deliver the project on time and to improve projects and systems.Looking at the experience of other countries that already implement risk management in IT projects life cycle and considering their respective situations. Design/methodology/approach Risk complexity in information technology system is the main concern of this study. Essential information data has been obtained in order to perform the quantitative method and it has been selected as the most effective method for this study. According to Venkatesh et al. (2003), several research study were performed by various researchers (Sang et al., 2009; Lam, 2005; OECD, 2003; Al-Shafi and Weerakkody, 2007; and Evans and Yen, 2006) in order to collect the information data through questionnaires. Any further methodology required to develop the research will be incorporated at that time Objectives. In order to achieve the previous aims, the researcher addressed the following adjectives: To review the practices and procedures for complexity of risk in IT projects in different organisations and practitioners in the developed countries and Saudi Arabia, and the underlying hypothesis and theories that strengthen them. To investigate the complexity of risk management approach and techniques used in the Saudi Arabian in IT projects. To determine the risk factors that can affect IT projects in Saudi Arabia. To identify the impact of emerging risk factors in relation to complexity of risk in IT projects. To reveal which risk strategies are more likely to be used in practice. To explore the relationship/interference between complexity risk and IT projects throughout the project life cycle. To put forward some recommendations and/or framework for improving the delivery of risk management in IT projects.

Keywords: Information systems, risk. IT projects, risk management. Complexity

Abstract No. 305: The Usability and Accessibility of Social Media Technology by Adult Arabs with Autism Spectrum Disorder

Alaa A. Mashat, Dr. Mike Wald and Dr. Sarah Parsons
University of Southampton
Southampton, UK
aam1f11@ecs.soton.ac.uk, mw@ecs.soton.ac.uk, s.j.parsons@soton.ac.uk

The prevalence of Autism Spectrum Disorder (ASD) is increasing globally. Social communication is the core diagnostic difficulty for individuals with ASD (Noterdaeme et al., 2010; Thede & Coolidge, 2007; Venkatesh et al., 2012). Technology can be used for teaching individuals with ASD social cues and rules to improve their understanding, and with the aim of improving their quality of life (Bolte et al., 2010). It has been reported by Benford (2008), that users with ASD prefer to interact with technology such as computers and robots rather than real humans because they find it safer and more interesting. Research focusing on developing technologies for people with ASD could help more in reducing the difficulties they face, and enhance their strengths and try to minimise their weaknesses (Hong et al., 2012). Additionally, services do not always support adults with ASD (Attwood, 2003; Brugha et al., 2011; Burke et al., 2010). The majority of technologies developed for people with ASD are for children, and mainly relevant to the Western culture (Samadi & McConkey, 2011). Other cultures might find the technologies difficult to use or inappropriate to their needs. In Arab countries, research regarding ASD has less attention (Al-Farsi et al., 2011), and the use of technology is not widely considered. Services and support for improving communication and interaction skills are also limited, especially for adults on the autism spectrum. The proposed research aims to investigate the usability and accessibility of social media technologies by adults with ASD in Saudi Arabia, in order to recognise the main cultural factors that could affect their usage of social technologies. In addition, this will help to design a prototype technology to be appropriate by the use of Arabs on the spectrum. At this stage, three adults with ASD and experts from 10 centres in different Saudi Arabia cities were interviewed. General data and data regarding the suggested factors that might have an influence on the usability of technologies were collected. After analysing the gathered data, results will indicate how to move on to the next step.

Abstract No. 319: Using negotiation approach for features interaction detection and resolution in smart homes systems

Ahmed Saeed Alghamdi
De Montfort University

Smart home systems have become an increasingly important technology in modern life. Apart from safety, security, convenience and entertainment, they offer significant benefits for the elderly, disabled and others who cannot live independently. Typical smart home systems comprise heterogeneous services and appliances that are designed by many different developers and that may meet for the first time in the home network. These services can interact with each other in an undesirable manner that may affect the functionality of the overall system. In this heterogeneous environment, the reasons behind interaction are varied. For example, service-based interaction occurs when there are conflict goals between two services, while policy-based interaction takes place when there is conflict in users' needs. Several studies have targeted feature interaction detection and resolution in smart home systems. However, none of these approaches adopts a mechanism of negotiation between the involved services to reach a compromise agreement. Therefore, this study focuses on designing and implementing a flexible mechanism of feature interaction detection and

resolution in smart home systems. The approach will be agent-based in order to benefit from the characteristics of the agent, such as mobility, interactivity and proactivity. Moreover, it will utilize the negotiation approach between conflicting agents to reach a compromise agreement enabling conflicting services of working simultaneously.

Abstract No. 332: Selection of Parameters for Adaptive Window in Entity-Finding Systems

Fawaz K Alarfaj
Al-imam Mohamad Ibn Saud University
School of Computer Science and Electronic Engineering University of Essex Wivenhoe Park, Colchester, CO4 3SQ, UK
falarf@essex.ac.uk

The adaptive window-size approach in expert-finding is one of the state-of-the-art approaches that proved to be very competitive and successful. Many researchers have used using static or fixed windows in the processes in finding expert. However, fixed windows do not take in consideration the different document features when selecting the window size. It rather treats all documents alike regardless of their characteristics. In this work we consider 4 document features to create an adaptive window-size. Using this each document in the collection will have its special window. These features have been chosen empirically as many other factors could be taken in consideration. The four features are, the document length, the average sentence size of the document, the number of entities in the document, and the readability index of the document. In this poster we report on an experiment on expert-finding using the adaptive window-size approach. We have used two different internationally recognized datasets (i.e. W3C and CSIRO) and four test collections (i.e. TREC enterprise track 2005-2008). The experimental results show noticeable improvement of about 30% over the baseline and about 5% of the best-reported result using the same datasets. We plan to test our method on different problems. We also interested to test this approach using bilingual collections.

Abstract No. 344: Protecting the End User Device in 4G Heterogeneous Networks

Hani Ali Alquhayz
Faculty of Technology, De Montfort University, UK
hani373@gmail.com

In recent years, there have been major developments in, and deployment of, diverse mobile technology. Security issues in mobile computing are now presenting significant challenges. Heterogeneous networks are the convergence of wired and wireless networks, other diverse end user devices and other communication technologies which provide very high speed connections. Major security challenges in 4G heterogeneous networks are inherent in current internet security threats and IP security vulnerabilities. In this paper, we propose a management system which is responsible for enforcing security policies and ensuring that security policies continued to be followed. The objective of this security management system is to prevent the mobile equipment from being abused or used as a malicious attack tool. The proposed security management system is consistent with the security specifications defined by ITU-T recommendation M.3400 TMN management functions. Finally, this paper will present a policy-based architecture for the security management system of 4G heterogeneous networks focusing on detection and prevention of malicious attacks.

Abstract No. 360: How Safe is This Neighborhood? Towards Understanding the Risk of Co-location in the Cloud

Abdulaziz Alabdulhafez and Paul Ezhilchelvan
Computing Science School, Newcastle University, UK
{Abdulaziz.Alabdulhafez,paul.ezhilchelvan}@ncl.ac.uk

This poster describes a current piece of research that aims to explore a hidden risk in public Infrastructure-as-a-service (IaaS) cloud environments. Looking at the nature of resource sharing in (IaaS) public cloud, it is possible to launch harmful cross-VM side channel attacks through the attacker co-residing a Virtual Machine (VM) with a target's VM resulting in the risk of comprising the co-resident VMs' confidentiality and security. There is a possibility an attacker can co-reside with targeted VMs in order to launch harmful VMs side channel attack against them. This probability is affected by a number of cloud elements such as the number of hosts, clusters, users and the VM allocation placement being used. This research aims to try to understand the factors that lead to VM co-residency in order to help understanding how to minimize co-residency possibility and use this information to quantify the risk of co-residency by estimating its portability using a novel simulation-based framework. This aim can be achieved through two steps. Firstly, to use the implemented cloud simulation framework to identify which cloud elements contribute the most to the co-residency probability? What are the most influential cloud elements that influence the VMs co-residency the most and to what extent they impact the results. The second step is to compare the impact of different VMs placement policies on co-residency probability. According to the simulation's early results of the optimal factors settings that can be used to minimize co-residency probability, IaaS providers should aim to increase the number of hosts as much as possible and control the maximum number of number of hosted VMs in a single physical host.

Abstract No. 379: Telepresence Robot Design Parameters for Optimal Human Robot Experience

Banan Bamoallem, Andrew Wodehouse, Gordon Mair
Design, Manufacture and Engineering Management, University of Strathclyde Glasgow
banan.bamoallem@gmail.com

Purpose: Recently, there has been a growing focus on the use of telepresence robotics systems as a means of remote communication and interaction. Such a system allows a remote operator to embody themselves within the robot at another location. However, a major concern with such technologies is that they often remove the sense of presence of the remote human at the location of the robot. Considerable research into the sense of presence of users within virtual reality environments has been done. However, there is little evidence of research into the sense of presence at a remote site experienced by the driver of a mobile telepresence robot and even less evidence of research into the sense someone at the robot end of the telepresence system might have of the presence of the remote driver. A need has therefore been identified to determine the design features necessary in a telepresence robot to allow a remote participant to comfortably and naturally communicate with the driver of the robot. Methodology: The project will investigate Human to Human interaction HHI, Human-Computer Interaction HCI and computer mediated communication. Aspects such as the significance of gestures, the effect of the 'uncanny valley', eye contact, size, height, and geometry of the robot, presence or absence of a video screen, etc. will be considered. Expected outcome: This understanding is vital from the practical viewpoint, as we need to design technologies that exploit visible information to provide more effective remote

communication. Nevertheless, It will allow engineers and media developers to identify the factors (and trade-offs between them) needed to optimise the level of visible information and in general the presence for the media use. The resulting contribution to knowledge will be a definitive list of design criteria that need to be fulfilled in order to produce an optimal human-robot communication experience.

Abstract No. 404: Matched Based Software Engineering

Hosam Hasan Al Hakami
De Montfort University (STRL), United Kingdom
P09050421@dmu.ac.uk

Matching processes are the corner stones of the widely spread software applications, in which the software approaches can be judged as perfect (fulfil the standard requirement) or poor. Current software areas such as clone detection and service selection need to increase the capability of its match process to accomplish the intelligence assignment between its candidates. SMP algorithm is one of the well-known mathematical matching algorithms, which used for multi purposes and several criteria with different derived versions. Therefore, with slight amendments (e.g. dual propose and multi propose) to this algorithm in order to take place and replace the current match process of such software applications, the intelligent is achieved. The matching process performance is challenging in several aspects of criteria for instance speed, accuracy and intelligence (satisfied matched candidates). Our approach is SMP-based and new strategy (choosy strategy) is proposed to accommodate the extended SMP algorithms to wide range of software matching processes. Two case studies are carried out on both program analysis and data analysis to proof the improvements of the proposed matching approach showing that the current state of the original SMP algorithm is lack to gain the satisfaction of both matched candidates and increase the fairness of the matching process. Also, shows that the new extended algorithm affects positively wide range of software engineering disciplines. Clone detection plays the role of the program analysis, in which the matching scheme (detection process) needs to find the similar fragments of code for several purposes such as removal repeated portions as maintenance part of legacy system. However, ontology alignments reflect the data analysis, in which matching process identifies the synonyms. Also, service selection is encountered, representing both program and data analysis.

Keywords: Stable marriage problem, clone detection, ontology alignments.

Abstract No. 414: Virtualising University Education

Nasser Nammas Albaqami
Faculty of Technology, De Montfort University, UK
Nsrksa@yahoo.com

A critical investigation into the information communication technology architecture supporting virtual universities focused on the Service Oriented Architecture (SOA) and SOAP protocol framework. The advancement and availability of high powered, efficient and effective computers has resulted in an upwards trend of large number of entities from organizations interacting in real time over large real geographic distances creating a virtual world. Therefore this study was motivated by an endeavour to understand in detail the ICT architecture to support virtualising university education. Using published work, the study established that different technologies and protocols; SOA, RPC, TP, SOAP, SMTP and XML can be used to support a third generation virtual university. Third generation is a real

university in the virtual space offering all its services to the learners in an integrated way. Its services will include online learning materials of different types, specialized virtual centres for development educational courses, library and administrative functions, interactive environment for asynchronous and synchronous communications and online collaboration.

Keywords: Service Oriented Architecture, virtual university.

Abstract No. 429: Using hybrid WSN approach and intelligent decision support systems for fire detection and mitigation in smart buildings

Falah Alshahrany,
STRL, De Montfort University,
Leicester, U.K.
falah88@hotmail.com

Intelligent decisions support systems are advocated to assist organisations in the design and implementation of wireless sensor networks (WSNs) to use in surveillance activities in general, and fire detection and mitigation in particular. The architecture of these WSNs varies greatly depending on the integration of the planning and the surveillance control activities. Their implementation will be evaluated using success factors which are the improvement of the network reliability, the interaction between the network nodes and the integration of the network devices, and also the increase of the process automation and the system responsiveness. The solution presented in the research shown in this poster is based on some key principles which are the full automation of the sensor nodes localisation, the configuration and reconfiguration of the WSN, the self configuration of sensor nodes by active sensor nodes, and the WSN management. It is based on the use of a hybrid WSN configuration composed primarily of homogenous sensor nodes grouping individually a set of sensors appropriately chosen to meet the sensing needs at the place of the sensor node deployment. Heterogeneous devices including opening and closing control mechanisms for doors and windows, people counters, tracking and video cameras, and sprinklers controllers, are integrated in the WSNs configuration to enable the integration of the surveillance control activities for a real time decision making. This solution aims at using a hybrid WSN approach for supporting multi-distributed system architectures enabling flexible and adaptive network configuration capabilities for sensor nodes and auxiliary devices deployment through the integration of intelligent agents and service composition to support the required policy change when reacting and adapting to the environment changes.

Abstract No. 438: SIP Signalling and QoS for VoIP over Next Generation Mobile Ad Hoc Networks (MANETs)

Mazin Alshamrani
Faculty of Engineering and Physical Sciences, Centre of Communication and Satellite Systems (CCSR), University of Surrey, UK
frommakkah@hotmail.com

One of the most efficient signalling systems for real-time applications is the Session Initiation Protocol (SIP). MANET wireless network system consists of where variable bandwidth and delays are relatively affecting on the Quality of Service (QoS) of real-time applications. Voice over IP (VoIP) is one of the most popular Internet applications, which provide real time Voice communications between different network systems. The QoS for VoIP Influenced by the performance metrics, which are signalling, bandwidth, packet loss, delay, and jitter. The signalling is the main parameter that manage and control VoIP calls.

This research review the performance Metrics of SIP Signalling over MANET Wireless Networks Over IPv6 using OPNET modeller with different voice Codecs. The simulation results show a comparable performance between the different MANET routing protocols. The SIP signalling is acting badly with IPv6, and both SIP signalling and IPv6need to be enhanced to support VoIP calls over MANET real time applications.

Keywords: SIP, VoIP, Network Systems, Quality of Service, MANET, Ad Hoc, Wireless Network Systems.

Abstract No. 470: Big Data Analysis for Bioinformatics (A User Friendly Approach)

Faris M. Abomelha [1], Dr. Paul Sant [2], Dr. Ingo Frommholz [3]
[1] Associate Dean, University Centre Milton Keynes, Milton Keynes
[2] Senior Lecturer in Computer Science, CATS Faculty , University of Bedfordshire, Luton
[3] PhD Researcher in Computer Science, CATS Faculty , University of Bedfordshire, Luton
[3] Research Assistant in Computational Genetics , Genetics Department , King Faisal Specialist Hospital & Research Centre , Riyadh Saudi Arabia
Fabomelha@yahoo.com

The research is expected to study and address the following questions: How can we make searching Data Bases (especially Big Data) an easy task for Scientists and be user friendly for them. Also to design and build a framework that will create a retrieval layer with an interface to extract data from both local and external databases. The main aim is to develop a novel multi-layered interface that will give the non-technical scientist the ability to perform a customized search on most of the relevant databases for specific data that they require without the need for an advanced knowledge in IT. This will gather all resources and tools that the scientist needs into one place that will save time, effort, and allows them to concentrate on their work. It will provide the resources needed To research the most common problems that scientists face when trying to search or retrieve certain data. Create a novel frame work for multi-data base big data retrieval system. Designing a user friendly interface that a non-technical person can use to store, analysis, and manage data. Develop a system that can handle Big Data. To implement the Hadoop Retrieval Platform. Collecting the main issues that scientists deal with regarding data retrieval and search through one on one interviews and questionnaires. Research current literature available. Develop a prototype and get feedback from the scientists.

Abstract No. 478: QoS Investigation of VoIP Traffic for VoIP Codecs Based on Increasing Frame Counts per Packet over IPv6 LANs

Dabiah Ahmed Alboaneen
Glasgow Caledonian University, UK
Dalboa200@caledonian.ac.uk

Recently, Voice over IP (VoIP) has become a more popular information technology than Public Switched Telephone Networks (PSTN). In this study, Quality of Service (QoS) investigation of VoIP traffic was performed in a real time network besides other types of network traffic such as web, database and video. The purpose of this study is to investigate the performance of various implementations of the VoIP Codecs over an IPv6 LAN, when the frame count per packet is increased. Each Codec was configured with different frame counts per packet to observe the impact of these differences on the VoIP QoS, in terms of voice packet end-to-end delay, jitter and Mean Opinion Score (MOS) statistics. We considered three main voice Codecs (G.711, G.723.1 and G.729a) and six frame counts per

packet values (1, 2, 4, 5, 7 and 10 voice frames/packet) in each Codec. OPNET Modeler 16 was used to simulate and investigate the VoIP performance. The results of simulation indicated that the end-to-end delay in all implemented Codecs was increased when frame counts were increased into each packet; therefore, the MOS value and Jitter were decreased. G.723.1 Codec experienced higher end-to-end delay in all experiments. However, the least packet end-to-end delay was observed in voice packets encoded with G.729a and G.711 for all configured values of frames/packet. As a result of G.711 had a higher MOS values and lower jitter, it considers the most appropriate VoIP Codec that can be implemented over IPv6 networks.

Abstract No. 503: How customers engage with brands on Twitter

Khaled Alodily
The University of Nottingham
kalodily@gmail.com

Social media has served to revolutionise the manner in which we as a society interact and communicate with one another, in addition to cementing itself as a permanent facet of 21st Century living. In this respect, whilst social media is recognised as being beneficial to the masses, the capabilities it affords to users has not gone unnoticed by those wishing to increase their profits and market share. To this extent, corporation and business alike have also noted the advantages offered by online communication tools and this in turn has resulted in social media tools being considered as a cornerstone of modern marketing strategy. In light of this, the following study placed social media tools at the centre of its focus, more specifically the social media tool- Twitter. Twitter is vastly used by business and corporations alike and currently has over 500 million registered users. As such, using an Interpretivist lens, the following study looked to examine the usage of Twitter by businesses, more specifically Starbucks, given that the company is considered to be the most socially engaging business on Twitter. In view of this, the study found that whilst a number of businesses have a presence of Twitter, they have fallen into a 'trap' of using this valuable tool as 'push' marketing tool whereby users are just bombarded with information regarding products and services. This fails to take advantage of Twitter given that it is highly regarded given that it allows for businesses to mine for data without any associated costs. In addition to this, it also emerged that Starbucks' success as far as Twitter is concerned, mainly lies in the fact that its Twitter 'followers' feel that the company has created a mutually beneficial relationship with them, as Starbucks benefits from direct consumer input and suggestions whilst followers are able to receive useful promotions and discounts.

Abstract No. 510: Behavioural Change Theory for A Smart Mobile Diabetes Management System Embedding Social Networking Platform

T.M. Alanzi, R.S.H.Istepanian and N.Philip
Medical Information and Network Technologies Research Centre, Kingston University, UK
k1148892@kingston.ac.uk

The Kingdom of Saudi Arabia (KSA) has the seventh-highest incidence of diabetes in the world. Furthermore, there is a lack of good educational and management programs concerning diabetes in the KSA. In parallel, there are increasing trends of mobile phone usage and access to social networking in the Kingdom. In this study, we have designed and developed a novel system that aims to provide smart social behavioural change intervention and management for Saudi diabetic patients (SANAD – Saudi Arabia Networking Aiding Diabetes).The key goals of SANAD are to close the diabetes management loop by providing

remote monitoring for diabetic patients, a further therapeutic channel to the patient, an opportunity to increase diabetic patients' health awareness, and feedback to help diabetic patients maintain a regular blood glucose level. The SANAD system is an advanced smart mobile diabetes management system that embeds social networking and cognitive behavioural therapy (CBT) modules tailored for Saudi diabetic patients. The key system components consist of: (i) a smart mobile diabetes management module (SMDMM) used for collecting blood glucose data; (ii) a social networking module (SNM), acting as an enhancement module for the SMDMM, the key function of which is currently focused on education purposes; and, (iii) a cognitive behavioral therapy module (CBT-M), acting as a supplementary module to SMDMM. This module is designed on the smart mobile platform and used only by patients who require CBT therapeutic intervention. The research work is currently ongoing, with a focus on evaluating the SANAD system in KSA healthcare sectors.

Abstract No. 517: The Roles of Artifacts to Facilitate Knowledge Transfer in Information System Development Projects

Wael Bukhary
Business School, University of Nottingham,UK
wael.bukhary@yahoo.com

The objective of this paper is to develop an in-depth understanding of the roles of knowledge artifacts within Information System Development activity, which is derived from human experience. The approach of Grounded Theory is adopted. Qualitative data was collected, using semi-structured interviews, from five-organizations in Saudi Arabia. A total number of 30-interviews with I.S. project managers were conducted using convenience and snowball sampling techniques. One section of the questions focused on the interaction and communication between customer and developers during the Requirements Elicitation (R.E.) process, in terms of the issues expected to arise, and the artifacts to be used in addition to their characteristics and functions. The analysis was able to identify five types of knowledge artifact. First, 'General requests', which is a form that cover some basic information about the target I.S. product, like the nature of the customer's business and the main purpose of developing this system. Second 'Features', which is a set of joint-papers contains the outcomes of the meeting and brain storming of the involved parties in the project. Third, 'Visual diagrams', which is a set of process model that clarify the business role of the I.S. product. Fourth, 'Prototype', which is a design for expected graphical user screens using pictures and text with almost no serious coding. Fifth, 'Requirements', which is the final form of customer's requirements in huge details. These artifacts are the result of the knowledge management process through three types of knowledge boundary, 'Syntactic', 'Semantic' and 'Pragmatic'. While numerous knowledge transfer studies focus on I.S.D. projects, very little is known about best practices of R.E. among the actors involved in a project. This paper took a step in that direction by emphasizing the roles of knowledge artifacts as boundary objects within this practice, and by investigating the most recommended expertise, in terms of how to utilize these to the fullest, based on project managers' actual working practices.

Keywords: Information Systems Development, Requirements Elicitation, Knowledge transfer Knowledge Artifact.

Abstract No. 522: Blended the approach toward Citizen Engagement in a Sustainability Community

Abdulrahman Abdullah Alsuliman, Prof Dr Y Rezqui, Dr A Kwan
Cardiff University, School of Engineering
AAlsuliman@cardiff.ac.uk

The poster focuses on a developing country, namely Saudi Arabia, and reports results from a field study survey (n=1173) conducted between April and June 2012, exploring public perceptions on climate change. In particular, the survey explores: (i) the role played by socio-emotional factors such as location loyalty, personal responsibility, and trust in sources of information, (ii) the level of people acceptance of external interventions using Information Communications Technology (ICT) to facilitate communications, at a local, national and international level, and (iii) ways in which these translate into sustainable lifestyles. Three factors emerge from the study as key determinants in Saudi's ability to engage with mitigation actions against climate change, namely: Locality, Humanity, and integration and involvement.

Keywords: public perception climate change, global warming, Saudi Arabia, Climate change responsibility, climate change & ICT.

Abstract No. 536: E-government in Saudi Arabia the Influence of Organisation Structure on E-Government Implementation in Saudi Arabia

Mohammed Abdullah Bindrees, Prof. R. Pooley
School of Mathematical & Computer Sciences, Heriot-Watt University
R.J.Pooley@hw.ac.uk, Moh.drees@gmail.com

E-government projects are developed independently based on each organisation's needs and requirements. Saudi Organisations are different in terms of their progressing in E-government competitions. This Poster concerns with the relationship between organisation structure and E-government projects in Saudi Arabia. Some organisations are faster than others because of many reasons. Their organisational structures and project environments could be among the most influential factors. Organisations worldwide remain stable until any project is being begun; an organisation must check its structure carefully prior to beginning a project. Based on the Project Management principles, Organisation structures have been divided into four categories: the functional structure, the dedicated project team structure, the matrix structure, and the network organisation structure. A qualitative evaluation approach was chosen because of the accuracy level needed in this type of studies. I conducted multi interviews in four layers based on the role of interviewees, who will help in choosing a suitable organisation structure, or even judging the current structure (Leader, top manager, IT managers and end users). Interviewees evaluated the current organisation structure and tested the effectiveness of the four organisation structures in supporting E-government projects from managerial and technical perspectives. The responses were unitized and grouped based on two dimensions: interviewee layer and interviewee main idea. We concluded with a number of recommendations such as; the strategic plans must be drawn up officially and project stages should announced, training plans regarding project management skills are desperately needed, the matrix organisation structure could be the best form for Saudi organisations, and Project Management Offices (PMO) should be adopted officially in most of the Saudi Organisations, as well as linked directly with the highest authority in the organisations.

Keywords: E-government, E-gov, Organisation structure, Information Technology, MOE, Ministry of Education.

Abstract No. 555: ViewPoint: An Augmented Reality Tool For revealing Deep Technology

Malek alrashidi
Phd in Computer Science, University of Essex
mqaalr@essex.ac.uk

This research will examine the application of augmented reality, and its capacity to highlight what are terms as 'hidden technologies' as a way of establishing more efficient instruments for students and/or developers examining embedded computing, which are characterised by a number of different topics, including the internet of things, pervasive computing and robotics, for example. Such an approach seeks to provide developers' and learners' experiences with enrichment through creating valuable insight into the invisible elements surrounding us. Accordingly, a generalised framework is suggested, referred to as ViewPoint, which comprises a number of different aspects, including augmented reality, centralised data, collaborative environments, learning design specification and physical objects. Moreover, in support of the suggested framework, a 4-dimensional learning activity task (4DLAT) is suggested, which assists in the structuring of the study into a number of different stages, through which progress is made from single-learner-discrete-task to group-learner sequenced-task, based on the scenario suggested. As a preliminary step towards such significant goals, this research will aim to develop an Internet-of-Things system centred on a small self-contained eco-system of networked embedded computers. These are referred to as Buzz-Boards

Keywords: Augmented Reality, Internet of things, Buzz board, Cloud of things, Mixed Reality.

Abstract No. 605: Approximation Algorithms for Disjoint -Paths with Min Activation Cost

Hasna Mohsen Alqahtani and Thomas Erlebach
Department of Computer Science, University of Leicester, Leicester, UK
{hmha1 | t.erlebach}@leicester.ac.uk

In network activation problems we are given a directed or undirected graph with a family of monotone non-decreasing activation functions from to where is a constant-size domain. The goal is to find activation values for all of minimum total cost such that the activated set of edges satisfies some connectivity requirements. Network activation problems generalize several problems studied in the network literature such as power optimization problems. We devise an approximation algorithm for the fundamental problem of finding the Minimum Activation Cost Pair of Node-Disjoint -Paths (MA2NDP). The algorithm achieves approximation ratio for both directed and undirected graphs. We show that a - approximation algorithm for MA2NDP with fixed activation values for and yields a - approximation algorithm for the Minimum Activation Cost Pair of Edge-Disjoint -Paths (MA2EDP) problem. We also study the MA2NDP and MA2EDP problems for the special case.

Abstract No. 627: CloudAdvisor – Framework for Measuring Cloud Providers' Trustworthiness and Transparency based on GQM approach and Cloud Providers' Business Factors

Mohammed Almanea, Prof. John Fitzgerald
Newcastle University, UK.
malmanea@gmail.com

Despite of the potential benefits gained from Cloud Computing, it is important to assist Cloud Customers (e.g. IT managers and executives) to avoid making costly mistakes in their adoption of cloud computing. "All Clouds are Not Created Equal" (Lambo, T., 2012), this has been a challenge to some Cloud Customers in making a correct or better informed decisions when deciding to adopt cloud computing and most importantly when comparing between different cloud computing offering provided by different competitive cloud providers (Lambo, T., 2012). Moreover, a security compliance is another challenge that could rise to cloud customers when selecting the appropriate cloud provider (Bhensook, N. and Senivongse, T., 2012) as well as assessing the history of the cloud providers (Lambo, T., 2009) and (Pauley, W., 2010) is of equivalent importance. Therefore, a CloudAdvisor's framework is proposed. Its contribution is helping cloud customers to choose carefully to some extent the best cloud provider that will meet cloud customers' requirements. That is basically done in two parts of the CloudAdvisor. The first part is to assess the cloud providers' trustworthiness based on some attributes defined by several existing literatures such as the History of Breaches. Increasing the confidence of Cloud Customers towards Cloud Providers is important when decision should be made when selecting the best Cloud Provider. Meanwhile, the second part is assessing the transparency of the Cloud Provider by consolidating the current Cloud Security Alliance (CSA) framework: Cloud Controls Matrix (CCM) and the Consensus Assessment Initiative Questionnaire (CAIQ) applying the Goal Question Metric Approach (Basili et al., 1994).

Abstract No. 684: Factors influencing the effective use of the CSCL approach as experienced by Saudi students in Saudi Universities

Bander Alzaidi
Durham University, UK
b.z.alzaidy@durham.ac.uk

The primary aim of this study seeks to strategically explore and identify the underlying factors that influence the learners' experience when using the computer-supported collaborative learning (CSCL) environment within a Saudi higher educational context. Upon analysis of these factors, one key objective of this research is to then provide effective guidelines for policy makers within educational institutes, in order to improve the use of CSCL environments in terms of pedagogy and technology. This will ultimately equip learners with the relevant skills when they leave formal education into employment. The adoption of such an environment necessitates researching it from the perspective of the learner, as the prerequisite for effective learning through E-learning collaboration is that learners must use the environment from the outset. The participants (n=400) of this study are Saudi students attending university, who have previous experience in using CSCL and are therefore able to expand on its use in greater detail. Hence, a deeper comprehension that relates to the factors influencing the implementation of this technology is gained. This research adopts a mixed methods approach, which empirically and theoretically investigates these factors in relation to the usefulness of CSCL. The outcome of this study will therefore assist in further

development and implementation of CSCL and LMS within diverse contexts and environments.

Abstract No. 690: UMLsec in Agile

Minahi Alotaibi
Software Technology Research Laboratory
De Montfort University, Leicester, UK
minahitawel@yahoo.com

It has become crucial to study and model security requirements for critical systems and take the information into account from the early phases. Proposed extension of Unified Modeling Language, UMLsec, is one of the most prominent examples of these attempts. However, it was built on the basis of object-oriented approach, whereas, most of current developments need to be implemented for projects that require rapid agile development methods, such as extreme Programming (XP), SCRUM, Feature Driven Development (FDD), and others. Due to the lack of UMLsec-like arrangements for Software Agile Development Methods, this study will investigate the usability of incorporating UMLsec in this iterative/incremental process to see if it is beneficial in use of software agile development methods, and to what extent (applicability) it can be adapted in agile projects. We will identify and analyse how to integrate the proposal of UMLsec with software agile development methods. This will be carried out using UMLsec in agile development methods such as XP and/or Scrum. Our research is a qualitative research of experimental study, simulation/implementation based to conclude the expected results/contributions. Quantitative survey (questionnaires/interviews) would be used. However, the output from proposed experiments should stand on participants' basic knowledge and background of security features and requirements of the target system, UML modeling skills, and ability to work as an agile team within agile projects. As results, we can see a methodology for extending and using the security features of UMLsec for agile development methods, and classification of UMLsec techniques for applicability in agile methods. Consequently, we conclude an integration of two major trends: UMLsec and agile methods, including the following advantages from this research:

- Use of UMLsec with agile to successfully improve SW development.
- Tests over documentation and reviews.
- Iterative refactoring over big-upfront-design phase.
- Consider new security requirements.

Abstract No. 695: Educational Game: Giving Tutorial and Exercise for Network Subnetting

Mohammad Adnan Hijji
Faculty of Engineering and Computing, Coventry University
Coventry, UK
e-tool@hotmail.com

Subnetting is an integral part of the network computing technique, and a very significant process for the network of any organization, where it plans and arranges the company's computer network. In fact, students who studied networking need to practice this concept during and after networking course, in order to gain and understand this concept effectively. Attracting students to practice Subnetting technique needs modern and entertaining methods of giving tutorials and exercises. From this perspective, the idea of this project came up.

Hence, this research presents an educational game which aims to support lecturers in computer networking classes. The proposed game provides tutorials and exercises regarding the concept of 'Subnetting technique' in an entertaining manner. The design of game takes into account the targeted audience, their pre-required knowledge and Human Computer Interaction (HCI). The Storyboard's method was used to design the interfaces sequence of the game, while Unified Modelling Language (UML) was used to design the software. The designed framework of the game was implemented by C# programming language. The game was constructed, tested and evaluated successfully. The evaluation process was through a process of primary data collection.

Keywords- Educational Game; Subnetting Game; Converting Decimal to Binary Game; Converting Binary to Decimal Game; IP address classes Game; IP hosts Game.

Abstract No. 701: QRMOF: A Multi-Perspective Framework for Quality Requirements Modelling

Kawther Saeedi[1*], Liping Zhao[1], Sam Supakkul[2], Pedro Sampaio[3]
[1] School of Computer Science, University of Manchester, Manchester, UK
[2]Department of Computer Science, University of Texas at Dallas, Texas, USA
[3]Manchester Business School, University of Manchester, Manchester, UK
saeedik@cs.man.ac.uk*

A considerable amount of research has been conducted to model Quality Requirements (QRs). However, in comparison with functional requirements (FR) the non-functional requirements (NFRs)/QRs models are still premature and not widely adopted. One of the fundamental reasons is the complex nature of QRs that made constructing a complete QRs model hard to achieve. Therefore, this research attempts to address a fairly complete set of QRs through integrating QRs with FRs. A multi-perspective modelling framework is developed offering a process oriented approach to model QRs in different views and phases of requirement. These models are brought together in a descriptive representation schema. The schema represents a logical structure to guide the construction of requirement models comprehensively and with consistency. The research introduced a generic meta-meta model model for QRMF to aid understand the abstract concepts, further guide the modelling process and a reference blueprint to develop a modelling tool applicable with the framework. This novel framework is guided by a novel constructive modelling process to facilitate building and integrating those models. The framework along with the modelling process guide requirement engineers to capture complete, traceable and comprehendible QR models for software system. The framework evaluated through a case study to evaluate the practicality and viability of the QRMF and theoretical evaluation to compare and contrast the framework features with other approaches found in the litterateurs.

Keywords: Quality requirements, Requirement engineering modelling, Multi-perspective modelling.

Abstract No. 703: Social Dynamic: (Environment Space, Crowd Density and Real World Social Distances): a NetLogo implementation

Omar Kurdi, Mariam Kiran, Marian Georghe and Daniela Romano
University of Sheffield - Faculty of Engineering - Department of computer sciences
kurdi@hotmail.co.uk

Pedestrian simulations have become widely recognised for their wide-ranging use in a number of different sectors, from disaster planning through to entertainment. There is much complexity inherent in human behaviours, which causes problems in creating a perfect framework for crowding. Pedestrians have varying specifications, with such distinctions impacting the crowd in its entirety. All researchers in this filed aims to attain accuracy in simulation through emphasising on the use of widespread parameters, such as group effects, communication between leaders and agents, psychological, physiological and social specifications. In this contribution, our study was made to evaluate the effect of social factors in crowd flows through investigating the relation between speed and density for different pedestrian types (i.e. disabled, elderly people, children, couples and groups), which will offer the opportunity to analyze this relation quantitatively. We present here a novel method using Pythagorean Theorem and sequential straightened frames of videos, to calculate the length of trajectories and pedestrians' speeds from CCTV surveillance cameras. Pedestrian's trajectories were extracted from images by using PeTrack software. The known physical measurement placed on images such as pedestrians height or car length were used to estimate pedestrians' travelled distances between frames. In addition, a Netlogo model was built to simulate pedestrian's behaviours against disabled in Al-Masjid Al-Haram, at Makkah Almukarramah city in Saudi Arabia, to establish solutions that can minimize the chance of crowd disasters there. Preliminary results of measurement were calculated from real clips of CCTV cameras deployed in Al-haram in Makkah, Meadow hall shopping centre in Sheffield, Farmer market in Birmingham and Hicks building in the University of Sheffield, although these cameras were not calibrated and the recorded videos can be tilted or zoomed. Finally, A Netlogo simulation model was built to examine the reliability of the obtained speed and density values.

Keywords: Pedestrian simulation, speed measurement, Pedestrian density.

Abstract No. 742: Faculty Members' Adoption of Mobile Learning at Higher Education

Leena Ahmad Alfarani,
University of Leeds, UK.
ml09laka@leeds.ac.uk

Mobile learning is a powerful modern teaching tool for the twenty-first century. One of the immediate results of mobile learning growth is that teachers at universities are increasingly expected to teach by using this technology in order to improve education and change the style of traditional teaching. As teachers play an active role in successfully integrating technology into education, it is important to understand the challenges that may accompany the adoption of new technology which is essential both for predicting teachers' attitudes towards it and for assuring its successful deployment (Ting, 2011). The main objective of this study is to better understand the acceptance factors of faculty members of mobile learning technology in Saudi higher education. This research examines the initiative of the adoption of mobile learning by measuring the degree of acceptance the faculty members of mobile learning. This study integrates the UTAUT's four factors: performance expectancy, effort expectancy, social influence and facilitating conditions (Venkatesh et al., 2003), the Diffusion of Innovation Theory's two factors (trialability, observability) (DIT; Rogers, 2003) and the extended constructs (resistance to change, social norms and voluntariness), these factors are hypothesised to have a direct effect on the current use of mobile learning. Therefore, this case study uses a mixed methods approach. A combination of quantitative and qualitative research will be conducted via online questionnaires and online synchronous interviews with groups of lecturers at one Saudi University. The results of this study will help Saudi universities to develop effective and reliable blended learning programmes by showing which attributes of mobile learning can be used to increase its adoption by teachers and showing how understanding the relationship between society, culture and faculty acceptance of mobile learning would greatly benefit Saudi Arabia and Middle Eastern countries that share a similar educational culture.

Abstract No. 754: Specification and Analysis of Service Oriented Architectures (SOA) within Higher Order Constructive Type Theory

Abeer S. Al-Humaimeedy
King's College London, Department of Informatics, WC2R 2LS, London
King Saud University, Department of Information Technology, P. O. BOX 2454, Riyadh 11451, Saudi Arabia
Abeer@ksu.edu.sa, Abiar.Al-Homaimeedi@kcl.ac.uk

The new SOA paradigm is based on service composition. Service composition refers to an aggregate of loosely coupled autonomous heterogeneous services, which are collectively composed to implement a particular task. To address some weaknesses of current dominant modelling methods for SOA systems, we propose, in this poster, a new formal framework which enables designers to formally describe and evaluate SOA systems within the Constructive Type Theory (CTT). CTT is a formal system which can serve as mathematical foundations for computer programs, where types play significant role, to reduce bugs. Firstly, we develop a new process calculus, based on the process calculus of Communicating Sequential Processes (CSP). CSP is a well-known formal modelling language to specify and analyse concurrent systems founded by (Hoare,1985). The new calculus is endowed with primitives to model compensation, mobility, service definitions, invocations and communications. Secondly, we implement the new calculus within CTT. The proposed framework provides mechanisms to prove: models bisimulation, trace equivalence, and trace refinement.We are interested in CSP as a modelling language for SOA systems, because of its flexible communication patterns and because it provides simple reasoning mechanisms to verify significant properties of models, such as good/bad traces, deadlock freedom and divergence.

Abstract No. 817: Business Intelligence Maturity Assessment (BIMA)

Thamir Alaskar
Manchester University
askarth@yahoo.com

Background: In recent years Business Intelligence (BI) has played a critical role for businesses in terms of organizational development, helping them to improve performance and create competitive advantages. However, more than half of BI projects either fail to fully deliver features and benefits that could help organizations in their decision-making, or they fail to complete at all. Therefore, most organizations start to use the BI maturity model to help define the level of maturity of BI inside an organization, to achieve better business value in the BI area. While the main uses of maturity models are to describe, explain and evaluate growth life cycles, many BI maturity models based on CMM have failed due to poor foundation of domain and design of the BI maturity model. Purpose of study: the purpose is to define the scope of the problem domain and design of the BI maturity model by presenting a comprehensive review of existing BI maturity models and elaborating on their methodical and conceptual characteristics, to determine their gaps in addressing the Human, organizational, Technical dominoes. Research Methodology: Literature review with content analysis technique have been used to answer the first question.Prasad (2008) addressed six main steps for completing content analyses; start with designing of the research objectives or questions, selection of content , developing content themes, completing units of analysis, preparing a pilot testing, and analysing the collected data. Result and conclusion: According to the analysis result, none of the existing BI maturity models have applied all the dimensions and benchmarking variables of BI within Human, organizational, Technical dominoes.

However, this link between the IMP and three BI key areas will be a base for new BI maturity model in future work.

Abstract No. 821: Real-World Instances for Generators Maintenance Scheduling Problem

Ahmad Almakhlafi and Joshua Knowles
University of Manchester
almakhla@cs.ma.ac.uk

The poster presents a test suite of 23 instances of a preventive maintenance scheduling problem from the power industry. The formulation of the problem and the suite are derived from real-world data collected recently. A first study of the landscape characteristics of these problem instances based on three different types of adaptive walk reveals a generally rugged landscape, with little global fitness-distance correlation. Initial results from a simple evolutionary algorithm shows indifferent performance compared to adaptive walks, suggesting that intensive local search may be an important component of a successful optimizer for this problem.

Keywords: Terms—Maintenance scheduling, fitness landscape analysis, benchmarks, genetic algorithms.

Abstract No. 823: Informative Priors For Learning Graphical Models

Eman Aljohani and James Cussens
York University
eman_ksa@ymail.com

Graphical models represent relations of conditional independence between variables, including, for example, those between various symptoms and causes of a disease. A hot topic in machine learning is the ability to learn such models from data. In some applications, it is crucial to include information not contained in data, i.e., prior information. The aim of this research is to design an efficient algorithm that utilises prior knowledge in a manner that enables users to express what they know about the problem domain. This involves creating a system in which the input is constituted by prior knowledge together with data connected to a Bayesian learning algorithm. The main purpose is to design prior information ahead of time in order to speed the process of learning up and ensure the achievement of learning that is more accurate. This research describes how different sorts of prior knowledge are incorporated into the developed learning algorithms. It assesses which algorithms work well and the types of prior knowledge that should be used in different algorithms. There are many types of prior knowledge, such as the knowledge that node A is not a parent of node B or that node A is a parent of node B, known ordering, and, most challengingly and the main subject of this research, known ancestor relations and conditional independencies. However, it is difficult to ensure that the graph that we are building will satisfy a given prior knowledge. The primary challenge is to decide what action to take when a branch of the search fails or reaches a dead end. The backtrack approach can overcome this problem. Overall, prior knowledge typically has an effect on the learning algorithm and if the prior knowledge v-structure was beneficial effect in learning.

Abstract No. 883: Towards Component-based Domain Engineering

Asmaa Alayed
University of Manchester, School of Computer Science
alayeda@cs.man.ac.uk

Most efforts have focused on the engineering of individual software systems (products). The focus has shifted from a stand-alone product to a family of similar products. This area of research is known as Software Product Lines Engineering (SPLE). The notion of SPLE emerged in order to reduce the cost of developing a collection of software products that have similar business objectives or belong to similar market sectors. It also reduces time-to-market due to its great emphasis on reusability. In general, SPLE consists of two main phases: domain engineering and application engineering. In domain engineering, the domain for the product family is analysed and modelled, and the domain architecture (reference architecture) is constructed in domain design. Based on this architecture, the implementation of the product line is performed. In application engineering, specific products from the product family are generated based on what has been built in domain engineering. The key artefact created by domain engineering for application engineering is a reference architecture for all possible systems or products in the domain. Existing domain engineering techniques do not derive reference architectures directly from the feature and functional models, and do not construct products as executable systems. Moreover, existing domain engineering tools mostly stop short of constructing reference architectures. In this research, we show how a component-based approach to domain engineering can provide a remedy. In particular, we show how the functional model can be defined in a component-based manner, using a suitable component model, as an architecture that contains all the variation points defined in the feature model. Such an architecture is of course a reference architecture, and so by defining the functional model in this way we automatically get a reference architecture as well.

Abstract No. 884: ATL: Adaptive Trust-Aware Location-Based Protocol in MANET

Helen Bakhsh
Manchester University
hbakhsh@kau.edu.sa

In a mobile ad hoc network (MANET), the vulnerabilities of the network and the mobility of nodes result in difficulties during the route discovery method when multi-path is required, without imposing additional traffic in the network. We design an Adaptive Trust-aware Location-based (ATL) protocol for achieving multi-paths discovery between the communications nodes in hostile MANETs environments with a minimum overhead impose in the network. ATL is a novel route discovery protocol that discovers more reliable or trustworthy paths to route high priority packets. To minimize the coast imposed on the network, the protocol discovers path(s) based on local trust with its neighbours. It use directional location method to discover multiple paths between the communication nodes. Furthermore, ATL use a novel ASA (Adjust Searching Area) method to adjust the size of the searching area dynamically, base on the network condition observation and the number of discovered paths. ASA adjust the size of the searching area. It can start from any of these points base on the real time information about the network (attacks level and the number of discovered paths). We study the impact of a resizing of the requested zone on the ATL framework performance and make comparisons with the most related existing routing protocol. Simulation results that ATL can resist attacks by malicious nodes effectively while searching for multi-paths with the minimum overhead required; furthermore, it also achieves

better performance than the LAR in terms of average end to end delay and packet delivery ratio.

Keywords: Mobile ad hoc network, MANET, Trust-aware, Location-based, Multi-path, Adaptive routing protocol.

Abstract No. 921: A Computational Intelligence Model for Constructively Aligning Instructional Designs

Alaa Abdullah Bafail , Dr. Jonathan Tepper and Ann Liggett
School of Science & Technology, Nottingham Trent University
alaa.bafail2009@my.ntu.ac.uk, alaabafail@yahoo.co.uk

The wide spread of models, frameworks, and toolkits in learning design serve to support teaching practitioners in producing well-structured learning designs for students. The concept of constructive alignment is considered to be one of the most influential ideas in higher education. Good teaching system ensures that all aspects of teaching, from intended learning outcomes, the teaching and learning activities used, and the assessment tasks are all aligned to each other (Biggs, 1996). This will guarantee effective student engagement and well-aligned teaching practice. The current learning design systems inherently lack an objective metric system which is able to measure the degree to which an educational design is well-formed according to the principle of constructive alignment theory. Such a metric system would enable teaching staff to make more informed design decisions such as which profile of activities/assessments to use for a particular learning outcomes and cohort needs.Therefore, this research project attempts to augment the current learning design system, such as the Learning Design Support Environment (LDSE) (Laurillard, 2011, 2012) with a metric engine by using and modifying Tepper's alignment metric (Tepper, 2006) to intelligently guide the formation of learning design patterns exported from the LDSE to create visibility of misalignment and to thus promote better aligned designs. The research project, has introduced a model that is based on an alignment metric computation to analyse a number of module design patterns, and to demonstrate successfully how it is possible to objectively measure and compute the degree to which a module design attains alignment and balance between all educational components in relation to the intended learning outcomes. This will help teachers and lecturers to quantitatively visualize the level to which their module or session design is constructively aligned and to be offered alternative design decisions to encourage stronger alignment. This session presents the progress of the system so far, highlighting strengths of the approach, current challenges and future work.
Keywords: Constructive Alignment Model, Alignment Metric, Bloom's Taxonomy, Educational Design Components, Alignment Tree

Abstract No. 934: Framework Behavioural of malware Detection Mechanism

Yazed Alsaawy
De Montfort University, Leicester, UK, Islamic University in Madinah, KSA
yazeduk@yahoo.com

Increasingly, there has been considerable damage caused by worms to machines using networks, this has resulted in large financial losses for industry. Malware, and specifically worms, are particularly a threat because they prey on vulnerable hosts within networks and are capable of irreversible damage of networks and data. There are currently a number of detection systems available that detect and stop malware before they inflict damage, however, if they fail to do so then the resulting damage can be serious. The unique contribution of this study is that the malware detection system allows damage to be inflicted in a dummy machine and detects the malware from a specific aspect of the malware's behavior; namely the damage. One of the main advantages to this approach is that it avoids damage of actual system machines. The study focuses specifically on worms. The malware detection system is designed as a network because the modus operandi of worms is to move around networks searching for vulnerable hosts. Therefore, the system network and the detection mechanism itself are designed to allow worms to behave normally. Moreover, the malware detection mechanism also functioned as the network handler, managing the sending and receiving of files and messages. The system was modeled using the formal specification Calculus Context Aware (CCA) and was implemented to demonstrate how the system observes behavior and detects worms. Experimentation was carried out using pre specified known worms and also unknown worms. The system was able to detect worms from specific types of damage such as corruption of the command port.

Keywords: Malware, Detection, CCA.

Abstract No. 937: ISTS: Implicit Social Trust and Sentiment Based Approach to Recommender Systems

Dimah Hussain Alahmadi
The University of Manchester
dimah_cs@hotmail.com

Recommender systems (RSs) provide personalized suggestions of information or products relevant to users' needs. Trust-aware recommendations have proven to be a powerful solution by building direct trust network to solve some inherent issues in traditional RS such as sparsity in user-item matrix, accuracy of rating predictions and cold start problems for users and items. However, due to the growth in the web environment and the widespread of Online Social Networks OSNs, in particular, microbloggings, trust relationships between friends and friends' opinion should be adapted in recommendations approaches. Most of the current researches ignore social relations in providing recommendations. In addition, explicit trust networks also suffer from sparsity problems. In this research, we introduce a framework of Implicit Social Trust and Sentiment based for recommendation (ISTS). This new method improves recommendation approaches by exploring another source of data represented in friend's text posts in microbloggings to be considered as micro-reviews. Furthermore, it infers the level of implicit trust between friends in term of communications behaviour, and analyses sentiment and opinion in friends' posts about items. We implemented experiments using real social data obtained from the popular microbloggings Twitter to show the potential of ISTS performance. We obtained promising results using the metric of accuracy such as precision and recall when applying different classification algorithms.

Poster: Politics and Law

(Short Abstract only)

Abstract No 331: Article 108 of the Charter of the United Nations and its impact on reform of the Charter

Yahya Alshammari
Brunel University
Yha_666@hotmail.com

Many international laws change according to the variables of lived experience and contemporary intellectual development. In public international law, the Charter of the United Nations forms the core that underpins and inspires all elements and components of public international law. However, the experience of international law has shown that Article 108 of the UN Charter is one of the primary obstacles confronting efforts to modernise the development of this field of law in accordance with contemporary human understanding. In particular, today's attention to human rights, self-determination and holding the perpetrators of crimes against humanity and genocide to account has run into a major obstacle in Article 108. This article gives the five permanent members of the UN Security Council the right to approve any amendment or change to the Charter, a right which has contributed greatly to the Charter's inability to reflect the widespread humans aspirations for security and global stability. In spite of the noble aspirations for the Security Council, Article 27 of the UN Charter requires the approval of all five permanent members for Security Council resolutions. It thus binds decisions on international security directly to the approval of the permanent members, who are free to vote based on their own narrow interests. Given the history of the past 68 years, we find that both conflicts and crimes against humanity continue to this day. Unfortunately for the world, the Charter of the United Nations cannot grow and evolve as it should, because under Article 108 the wishes of only five out of the 191 UN member states outweigh the rest of the world combine.

Keywords: United Nations, Security Council, Human Rights, Self-determination, Stability

Abstract No. 339: The Regulation of Remuneration Practices

Abdullah Almhmoud
Law, University of Liverpool
Schoolrydrtc@hotmail.com

Problems related to remuneration are not only associated with a high level of remuneration, but also with the fact that remuneration does not reflect the performance of the executives and their firms. In addition, the 2007-09 financial crisis exposed a failure in bankers' remuneration. This failure is related to the fact that remuneration structures had encouraged excessive risk taking and rewarded short-term performance regardless of the long-term ramifications. This research will examine the social, economic and legal aspects of remuneration policies in financial institutions, their flaws and failures contributing to the recent financial crisis, the role of the board of directors (executives and non-executives), shareholders, remuneration committee in fixing remuneration policies. The research will, also, evaluate the current, nationally, regionally and internationally, efforts to regulate and control remuneration in financial institutions. From a social perspective, imposing a limit on the maximum level of remuneration could solve the problem and this could be done in the same way as mandating a minimum level of wages. Therefore, we should have minimum and maximum levels for wages or remuneration. However, this solution is not preferred by politicians and regulators in a highly mobile market of executives, even in the case of firms which receive government financial support. Instead, the focus is on strengthening the link between remuneration and the financial and non-financial performance of an individual

business unit and the firm, using corporate governance mechanisms which are independent (the board of directors or the remuneration committee setting the remuneration structure), say on pay (to give shareholders [the owners] the power to vote and hence influence the level of payment) and disclosure (to facilitate shareholders' votes and influence outrage cost in the media). Moreover, there are some new international rules directing financial institutions to structure their remuneration in certain ways to prevent excessive risk taking and promote financial stability.

Abstract No. 500: The Post-9/11 Relationship Between the United States and Saudi Arabia: Trust, tension and counterterrorism

Sumaiah Redwan
somayahredwan@gmail.com

In 1933 the discovery of oil heralded the transformation of a backwater desert with a tiny population of nomads, whose only distinction was the Islamic holy cities of Mecca and Medina. Having the biggest oil reserves in the world and low production prices gave the Kingdom of Saudi Arabia international and geographical importance. The US quickly realised the importance of the future of oil and made ties with the Kingdom, first through oil companies and later in all aspects of relations. Both sides needed the other; the Saudis needed the defence implications of alliances with Western powers, and the Western economies (particularly the US) needed a secure flow of vital oil. The relations increased and remained good, with Saudi Arabia increasingly consuming more American products and US buying more oil, augmented by Saudi support of the US during the Cold War and US support of Saudi Arabia in regional inter-Arab issues. However, the attacks of September 11 fundamentally affected relations between Arabs (and Islam) and the US (and the West). The intense media interest and denigration of Saudi Arabia challenged fundamental and deep political currents favouring cooperation between the US and the latter. From this background, this dissertation seeks to recognise the new path that the US and Saudi Arabia took in repairing the damage pursuant to the 9/11 attacks. Interviews and analysis of official governmental statements and press releases from people aware of foreign policy and the relations between both countries were the tools used to explore US-Saudi relations since 9/11. The study finds that joint efforts in counterterrorism were the best response to the tension that arose after 9/11, and that this mutual interest has maintained and enhanced relations for the foreseeable future.

Abstract No. 559: Market Manipulation and Insider Trading in the Capital Market in Saudi Arabia: "A Case for Reform"

Saad Ali Aljloud
Law School, Brunel University

One of the most debated issues is that of market manipulation. The topic has been investigated by scholars from several scientific fields including the legal. Indeed, market manipulation and insider trading has been examined by a great number of law scholars, with particular regards to the improvement of various aspects. The main objective of this research is to suggest reformation to the Saudi market manipulation framework in order to achieve satisfactory market manipulation practices. The second purpose of this research is to examine the means adopted by the United States and the United Kingdom in combating the main two types of fraud that interfere with financial market trading. These are namely insider dealing or insider trading depending on the jurisdiction that is examined and market manipulation. Both these jurisdictions are examined in relation to the ways each uses differing methods of regulatory enforcement mechanisms to control these types of market fraud. The final aim is to determine how a Saudi market manipulation framework would most benefit market manipulation and insider trading from the Islamic perspective. This study intends to provide a regulatory analysis to influence those regulations that should be implemented to adjust market manipulation and insider trading practices as they affect the Saudi capital market. The researcher found that Saudi market manipulation and insider trading have been promulgated in accordance with principles of on-going international market manipulation and insider trading. Alternatively, the Islamic perspective on market manipulation and insider trading has been debated more recently, as an idea that needs to be progressed in order to provide associated benefits to the market manipulation framework in Saudi Arabia. Therefore, Saudi market manipulation and insider trading provisions can be seen as based largely on positive way.

Keywords: Islamic perspective, Market Manipulation, Insider Trading, Financial Market.

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