

جامعة الملك فهد للبترول والمعادن
King Fahd University of Petroleum & Minerals



عمادة البحث العلمي
DEANSHIP OF RESEARCH

أنباء البحوث RESEARCH NEWSLETTER

RESEARCH NEWSLETTER

January, 2013

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FOREWORD

This first issue of the University's *Research Newsletter* for the Academic Year 2012-2013 provides up-to-date information about the research and other scholarly activities undertaken by University faculty members for the period from July 2012 to December 2012. A healthy research program has the advantage of attracting the best faculty and students. The scope of research support has been expanded in response to global technological challenges and in order to support and sustain diverse faculty research interests. Our goals are to promote creativity; to address critical, scientific, technological and managerial issues; encourage research in areas of national importance; and to improve the quality of graduate education. This *Research Newsletter*, published by the Deanship of Research on a semi-annual basis, provides an overview of our faculty's research output, as well as the funding which the University provides its faculty to pursue research and scholarship. In particular, the *Research Newsletter* reports on faculty publications, conference presentations, funded projects, and many other features.

The Deanship of Research is making its best efforts to promote the new research grants among the faculty members so that they can actively participate in research, which is not only beneficial to their own professional career but also to the development of society at large.

Our sincere appreciation is due to Mr. R. Jayaraman for compiling this edition of the *Research Newsletter*.

Dr. Nasser Al-Aqeeli
Dean of Research

2. ABSTRACTS OF SELECTED RESEARCH PROJECTS

Abstracts for Approved Research Projects during the Fall Semester 2012-13

1. IN121001

Dr. Muhammad Arifuzzaman, Dr. Nedal T. Ratrou, and Mr. Mirza Ghouse Baig,

Civil Engineering Department, along with Dr. Anwar Ul-Hamid (RI) and Dr. Rafiqul A Tarefder, (Consultant)

Investigation and Modeling of Moisture Damage in Asphalt Binder at Nanoscale: Computational Intelligence Approach

Abstract: Although moisture damage in asphalt has been studied for decades, it remains an unsolved problem till today. It seems that traditional macro-scale tests and methods are not adequate to elaborate on the moisture damage phenomenon. Moisture damage in asphalt is mostly related to asphalt chemistry and adhesion characteristics, which are below the micron-scale phenomena. In this study, asphalt chemistry and adhesion values will be studied at nanoscale to understand moisture damage. All nanoscale measurements and tests will be conducted using an Atomic Force Microscope (AFM) in the laboratory. In an AFM test, adhesion forces of dry and wet asphalt samples are measured by probing the sample surface with AFM tips. Nano-scale pull-off force or adhesion between sample molecules and tip molecules are measured. To facilitate the study of asphalt chemistry, AFM tips are modified using chemical functional groups such as carboxyl (-COOH), hydroxyl (-OH), ammin (-NH₃) and methyl (-CH₃), representing the chemistry of asphalt binder. The primary aim of this project is to study the effect of functional groups on adhesion properties as well as the moisture damage. In the last phase of this project, a computational intelligence approach will be investigated to model the adhesion properties considering the percentage of polymers (such as Styrene-Butadyne, Styrene-Butadyne-Styrene) and an anti-stripping agent as input. The computational intelligence models will include artificial neural network (ANN), support vector machine (SVM), and hybrid models such as the neuro-fuzzy model. Some preliminary work done in this area suggests that computational intelligence models are suitable for modelling adhesion properties of asphalt at nano scale. This study will mainly focus on Arabian asphalt to investigate and model the phenomenon of moisture damage. It is expected that this investigation will contribute to the understanding of nano scale behavior of Arabian asphalt and reduce exhaustive experimentation due to the application of proposed computational intelligence models suggested in this study. The outcome of the proposed study would be published in international and local journals and it will be useful in updating the local asphalt concrete standards and codes of practices. It will impart training to students and other participants and help them develop useful skills. The proposed study would be conducted over a period of 36 months at a total cost of SR 842,600 (US \$224,693). The research team possesses sufficient experience to conduct the proposed work.

2. IN121002

Dr. Ahmad Mansour, Dr. Khalil Ziq and Dr. Ahmed F. Salem, Physics Department

Investigation of Doping and Lattice Distortion Effects on the Evolution of the Magnetic and Transport Properties of Nd(1-x)Sr(1-y)A'y)xMnO₃

Abstract: Intensive scientific efforts have been devoted to studying mixed-valent manganites since their discovery decades ago. The significance of these materials is not only related to their richness in physics but most importantly to their use in current applications like memory devices, bolometers, and spin-switches. These complex materials exhibit many exotic properties like: colossal magnetoresistance (CMR), giant magnetoresistance (GMR), paramagnet to ferromagnet/antiferromagnet and insulator-to-metal phase transitions with decreasing temperature. CMR and GMR are the result of a significant change in the resistance upon the application of an external magnetic field. Many of these properties are the result of strong interplay between charge, spin, and lattice degrees of freedom. Mixed-valent manganite

compounds take the form of $R(1-x)AxMnO_3$, where R stands for rare-earth elements and A are divalent alkaline earth metal elements. When a manganite is cooled below its transition temperature (TC), it undergoes paramagnetic-insulator to ferromagnetic/antiferromagnetic-metal transition depending on the doping level x. The level of doping in these strongly correlated electronic systems is a critical factor, since in addition to TC, the doping level also determines the different phases that can coexist or dominate the structure (e.g. ferromagnet versus antiferromagnet, metal versus insulator). In spite of the many research studies that have been conducted on manganites [1-17], the knowledge of the behaviour of these materials contains a number of significant gaps. Importantly, the combined effect of doping (which causes changes in bond lengths, hence changes in atomic magnetic interactions) and disorder (due to quenching the material's temperature from very high temperatures) on the transport, magnetic, and magneto-transport properties is not known for some compounds like $Nd(1-x)Sr_xMnO_3$. Here we propose to study the combined effect of changes in the bond lengths, lattice distortions and quenching on the transport and magnetic properties of $Nd(1-x)(Sr(1-y)A'y)xMnO_3$ at a doping level x and at different doping levels y (A' has a smaller ionic radius than Sr ion). In particular, we study the effects quenching the disordered phase formed at high annealing temperatures on the formation of ferromagnetic state and the corresponding effects on metallic-insulating transition. Doping with a second divalent element A' will change the bond lengths and angles with a certain degree. The degree of disorder due to quenching from high temperatures may also affect the (Mn^{4+}/Mn^{3+}) ratio, hence affecting the double magnetic exchange interaction and the formation of the magnetic state. These combined effects are expected to affect the mobility of the electrons and the atomic magnetic interactions. Formation of the spontaneous magnetization will be studied through Arrott-Kouvel plots and transport measurements will be extensively used to investigate the nature of transition as the degree of disorder is being changed. Understanding the evolution of the magnetic and transport properties of these materials due to the above-mentioned manipulations will give us better control of the material. This should eventually result in more controlled tunings of these materials to match potential applications.

3. IN121003

Dr. Magdi Mahmoud, Systems Engineering Department, and Dr. Yuaqing Xia of BIT, China

Analysis and Synthesis of Fault-Tolerant Control Systems [Book writing Project]

Abstract: In recent years, we have witnessed how sophisticated control systems are being designed to achieve improved performance and meet safety requirements for modern technological systems. Technical experience has indicated that conventional feedback control design for a complex system may result in an unsatisfactory performance, or even instability, in the event of malfunctions in actuators, sensors or other system components. In order to circumvent such weaknesses, new approaches to control system design have emerged with the purpose of tolerating component malfunctions while maintaining desirable stability and performance properties. These types of control systems are often known as fault-tolerant control systems (FTCS). More precisely, FTCS are control systems which possess the ability to accommodate component failures automatically. The main rationale adopted in writing the book is to bring together a coordinated pool of methods for analysis and design for FTCS. These methods are up-to-date and cover advanced technical methodologies. In this way, the target is to enrich the academic literature and industry with reliable and effective methods. This book provides a guided tour of the analysis and synthesis methods of fault-tolerant control systems. In this regard, the book unifies the methods for developing controllers and filters for a wide class of dynamical systems and reports on the recent advances in design methodologies. Particular consideration is given to covering wide topics that were treated in the literature and to presenting results of typical case studies. The key feature is to provide a teaching-oriented volume with research-supported elements. Throughout the book, the use of MATLAB is the vehicle for all methods of analysis and design. The book is complemented with examples, problems and end-of-chapter notes.

4. IN121004

Dr. Mohamed Ben Daya, Systems Engineering Department along with Dr. D.N.P. Murthy of University of Queensland, Australia, and Dr. Uday Kumar, Lulea University of Technology, Sweden.

**Introduction to Maintenance Engineering: Modeling, Optimization and Management
[Book writing Project]**

Abstract: Over the past few decades, maintenance has been recognized as essential to core business operations. Maintenance management and engineering have been vital in assisting organizations to gain a competitive advantage. The area of maintenance is multidisciplinary in nature and therefore proper understanding of maintenance requires an effective framework, and an interdisciplinary approach, combining engineering, science, mathematics (statistics and probability theory), management and economics. The book is aimed at undergraduate (U/G) students in engineering and management programs and introduces them to the framework and interdisciplinary approach based on the students' background at the senior level. Also, the book links theory with practice and exposes the student to the evolutionary trends in maintenance. The proposed book will cover both maintenance management and maintenance engineering at a level adequate for senior undergraduate students. As such, the book is divided into four parts: (i) Concepts and overview; (ii) Engineering and technology aspects; (iii) Models for decision-making; and (iv) Maintenance management. The contents cover all important maintenance aspects and will appeal to many audiences. The book will also include several appendices covering basic background material so that the book is self-contained. It will also emphasize pedagogy capitalizing on the extensive teaching, research and practical experience of the authors. This will include but is not limited to: - A list of learning outcomes at the outset of each chapter. - Detailed derivations and many solved examples for modeling and optimization chapters. - Cases for maintenance management chapters – End-of-chapter problems and exercises. Supplements of the book are as follows: - A solution manual will be prepared for all end-of-chapter exercises to accompany the book. - Power point slides for all chapters - The use of readily available software whenever possible. - A website containing the above material and important links.

5. IN121005

Dr. Bekir Sami Yilbas, Mechanical Engineering Department

Laser Drilling and Practical Applications [Book writing Project]

Abstract: With the recent advancement in laser technology and computational power, laser drilling applications have become almost an integral part of the aerospace, power, electronic, and sheet metal forming industries. In laser drilling operations, the physical processes are complicated in nature and they require deep understanding of the process to secure improved end-product quality. In laser drilling processes, the end-product quality is very important from the manufacturing point of view. The quality assessment of the end product, such as a drilled hole, can be possible through examining the geometric features of the laser-drilled hole section. One of the methods associated with the quality assessment is the factorial analysis; in which case, the affecting factors are varied randomly or with increments to generate the random blocks. Through the statistical testing of the measurable responses, the significant levels of the affecting parameters can be identified. In this book, the laser drilling operation is introduced and analysis related to the drilling mechanisms is presented in chapter 2. The qualitative and quantitative analysis of laser drilled holes is accomplished in chapter 3 to assess the end-product quality. Chapter four deals with the above surface phenomena, which influence the end product quality. In the last chapter concluding remarks are included for the laser drilling process.

6. IN121006

Dr. Wail Mousa, Advanced Digital Signal Processing of Seismic Data

Advanced Digital Signal Processing of Seismic Data [Book writing Project]

Abstract: Many books in geophysics have focused on geophysical background theory like seismic theory. Such books briefly describe various (digital) signal-processing methods used in the area of seismic

reflection data-processing and use the signal-processing methods simply as tools. *Advanced Digital Signal Processing of Seismic Data*, however, is a textbook on Digital Signal Processing (DSP) deterministic & statistical theories with various examples and case studies from and on seismic reflection data, which is used in oil and gas exploration. It provides a blended mix between the theoretical and the practical aspects of DSP and its application to the processing of seismic reflection data. For Electrical Engineers, particularly those in the area of DSP, it provides the necessary related geophysical background to understand seismic reflection data and, hence, prepare them to properly process such data. It also covers particular deterministic and statistical DSP theory in brief with a focus on the practical DSP aspects for seismic reflection data. This is accompanied with examples in seismic and some physical interpretation of the results of using such DSP methods for the seismic data sets. Also, the book includes new trends and advances in DSP like the theory of compressive sensing and shows some of its various applications to seismic reflection data. The book also serves as an important reference for Geoscience researchers and professionals interested in delving more deeply into the theory of DSP and attaining a more precise understanding of their applications to seismic data.

The book's main features are as follows:

- Suggested graduate-level and senior-level undergraduate Electrical Engineering course syllabi.
- Lab experiments of a complete seismic data workflow in MATLAB™.
- Computer assignment for various topics using MATLAB™ within each book chapter.
- Sufficient examples, illustrations, and figures along with homework problems for each chapter as applicable.
- Seismic synthetic and real data (provided by Saudi Aramco) for illustrative figures, computer assignments and lab experiments.
- PowerPoint slides for each chapter containing main bullets, figures, and tables for instructors.

7. IN121007

Dr. Mohammed Abdul Samad and Dr. Amro Al-Qutub, Mechanical Engineering

Surface Modification of Polyether Ether Ketone (PEEK) for High-Wear Durability

Abstract: Polyether ether ketone (PEEK), an engineering polymer with many advantages such as light weight, high thermal stability, and high strength coupled with toughness, has often been used as a substitute for metals in applications such as bearings, piston parts, pumps and even biomaterials. However, it shows a high coefficient of friction which results in a high-wear rate when used in tribological applications. This proposal seeks to solve the problems of high friction and wear for PEEK by applying appropriate surface modification techniques so that it can be used in various tribological applications.

8. IN121008

Dr. Nouari Saheb, Dr. Nasser Al-Aqeeli, and Dr. Syed Fida Hassan, Mechanical Engineering

Optimization of Processing Parameters for the Development of Al-SiC Nanocomposites with Improved Mechanical Properties

Abstract: The inadequacy of metals and alloys in providing both strength and stiffness to a structure has led to the development of metal matrix composites (MMCs) where rigid ceramic reinforcements are embedded in a ductile metal or alloy matrix. MMCs combine metallic properties i.e. ductility and toughness with ceramic characteristics i.e. high strength and modulus. These composites are extensively used in automobile and aerospace applications because of their attractive physical and mechanical properties. Further improvement of the properties of MMCs was possible using nano-size reinforcement and/or matrix; this led to the development of metal matrix nanocomposites (MMNCs). However, there are challenges associated with processing nanocomposites with the desired properties. These challenges include uniform distribution/dispersion of the nano-size reinforcement and grain growth of the matrix phase. Ball milling, a powder metallurgy processing technique which involves cold welding, fracturing and

rewelding of powder particles, is being used to achieve a uniform distribution of the nanoreinforcement phase. Also, spark plasma sintering, a binder-less process, which does not require a pre-compaction step, has been shown to be an effective non-conventional sintering method for obtaining fully dense materials with preserved nanostructure. Although, a few published works have reported the synthesis of Al-SiC nanocomposites using ball milling and spark plasma sintering, the process has not been fully investigated and not all critical sintering parameters i.e. compaction pressure, heating rate, sintering temperature, and sintering time have been optimized for processing Al-SiC nanocomposites with the desired properties. The main objective of this project is the optimization of processing parameters for the development of homogenous Al-SiC metal matrix nanocomposites with improved mechanical properties through ball milling and spark plasma sintering.

9. IN121009

Dr. Jameladdine Hassine, ICS Dept.

Abstract State Machines (ASM) Mutation Testing

Abstract: Mutation testing is a well-established fault-based technique for assessing and improving the quality of test suites. Mutation testing can be applied at different levels of abstraction, e.g., the unit level, the integration level, and the specification level. Designing mutation operators represents the key to conducting effective mutation testing and analysis. While mutation operators are well defined for a number of programming and specification languages, to the best of our knowledge, mutation operators have not been defined for the Abstract State Machines (ASM)-based languages such as CoreASM, AsmL, and AsmGofer. In this research, we aim to apply mutation testing to ASM formalism. More specifically, the goal of this project is to build upon our previous work on defining and classifying a subset of mutation operators for Abstract State Machines. The resulting operators will be implemented within an ASM-based mutation toolkit in order to automatically generate, validate and execute mutants. This would allow for an empirical evaluation of the proposed operators. Furthermore, we aim to find ways to reduce the cost of ASM-based mutation analysis.

10. IN121010

Dr. Kaukab Azeem and Dr. Varghese C. Anthony, Physical Education Department

Impact of Aerobics and Aerobic Cross-Training on Coronary Heart Disease (CHD) and Bio-motor Variables among Obese Males

Abstract: *Statement of the Problem:* The purpose of the study is to find out the effect of aerobics and aerobic cross-training programs on coronary heart disease and bio-motor variables among obese males from pre- and post-testing. *Introduction:* Obesity is a chronic disease and a growing threat globally today. Nowadays, obesity is a major global challenge that has attracted attention towards the role and importance of aerobic exercise to improve one's health. Aerobic exercise is designed to produce a sustained increase in the heart whose energy cost can be met by the body from aerobic sources, that is, from increased oxygen consumption (Cooper, 1970). Obesity leads to cardio-vascular disease and diabetes, (Haslam and James, 2005). *Objectives:* The investigation will focus on the following: 1. To design an effective aerobic training program for obese males; 2. To design an effective aerobic cross-training program for obese males; 3. To supervise, implement and administer the program; 4. To find the changes in the selected coronary heart disease (CHD) variables. 5. To find out the effect of aerobics and aerobic cross-training on selected bio-motor variables; 6. To find out the difference in performance between the aerobics training group and the aerobic cross-training group; 7. To make recommendations. *Methodology:* This study will involve experimental research with a pre- and post-test for two groups formed on the basis of body mass index (BMI). *Subjects:* Sixty obese male subjects from King Fahd University of Petroleum and Minerals will be selected to participate in the study. Age of the participants will be in the range between 18 and 22 years. Subjects will be segregated into two groups namely aerobics training group and aerobic cross-training group. The duration of the training program will be for 45 minutes, twice per week. All the participants from both groups will be tested prior and after 12 weeks of the program. The test procedures to be administered will be verbally explained and practically demonstrated. Queries and doubts, if any, will be answered. A handout and schedule will be circulated to elicit the information and details for the students'

daily exercise program, and its duration and intensity will be facilitated. The selected coronary heart disease (CHD) variables will be tested at the KFUPM Clinic laboratory. Bio-motor variables will be tested by the investigators at the Physical Education department. *Hypotheses*: 1. There will be no significant difference between aerobic and aerobic cross-training programs on coronary heart disease among obese males; 2. There will be no significant difference between aerobic and aerobic cross-training programs on bio-motor variables among obese males. *Statistical Analysis*: The hypotheses and the data will be analyzed using appropriate statistical methods. The level of significance will be set at .05 levels. For statistical analyses, SPSS 16 for Windows will be used. Descriptive statistics for pre- and post-data scores will be applied to see the difference among groups. Further t-testing will be used to determine the significance of any difference between the groups. *Significance*: □ This study will provide valuable information to the Physical Education department, Physical Education teachers, and parents regarding the best training program for coronary heart diseases. □ The results of the study will be useful for the obese male students to improve their bio-motor variables through aerobics or aerobic cross-training programs. □ This study will help the PE department to design a program for obese students that may satisfy their needs and contribute to their health and development.

11. IN121011

Dr. Rajai Al-Assar, Department of Mathematics & Statistics

Transient Forced Convection in Semicircular Tubes

Abstract: The purpose of this project is to study the problem of transient forced convection in semicircular tubes with constant wall temperature. The incompressible laminar flow is assumed to be hydrodynamically fully developed but thermally developing. An analytical exact solution of the velocity distribution of the flow field is to be used to numerically obtain the time developments of the thermal field. The results will be presented in the form of velocity distribution, the time developments of isotherms, and Nusselt number development. The results will be verified and compared to relevant published literature.

12. IN121012

Dr. Mohammad Deriche and Dr. Mohammad Mohandes, Electrical Engineering

Blind Image Quality Assessment Using Neural Networks

Abstract: Multimedia applications have experienced a tremendous growth in popularity in recent years due to the evolution of both wired and wireless communication systems, namely, the Internet and third-generation mobile radio networks. Despite the advances of communication and coding technologies one problem remains unchanged: the transmitted data suffers from impairments through both lossy source encoding and transmission over error-prone channels. This results in a degradation of quality of the multimedia content. For example, images pertaining to DTV (Digital Television) may contain a variety of elements, including text, graphics, and pictorial segments. As we evaluate the quality of images, we may notice that various elements of the image are not communicated as desired, mostly due to a lack of clarity in details of pictorial segments, noise in areas expected to be smooth, loss of information in highlights or darker areas, and inaccurate representation of color. These characteristics form the basis for defining sharpness, graininess, tone scale, and color rendition. These four attributes are significant factors that viewers consider when judging image quality. In order to quantify these losses, there is a need for robust quality indicators. Traditionally, this has been done with measures like signal-to-noise ratio (SNR), bit error rate (BER), or peak signal-to-noise ratio (PSNR). It has been shown that those measures do not necessarily correlate well with quality as it would be perceived by an end-user. In this work, we propose to investigate new approaches for image quality evaluation using neural networks.

13. IN121013

Dr. Aissa Guesmia, Department of Mathematics & Statistics and
Dr. Boumediene Chentouf, Consultant from Sultanate of Oman

Well-posedness and stability for coupled abstract evolution equations with one infinite memory

Abstract: In this project, we consider two coupled abstract linear evolution equations with one infinite memory acting only on the first equation. Our objectives are: 1. Proving that our abstract system is well-posed in the sense of semi-groups theory, 2. Proving that the stability of our abstract system holds for convolution kernels having much weaker decays than the exponential decay considered in the literature, where we want to get a general and precise estimate on the asymptotic behavior of solutions in function of the general growth of the convolution kernel at infinity and the arbitrary regularity of the initial data, 3. Presenting various applications to some hyperbolic distributed coupled systems such as wave-wave, Petrovsky-Petrovsky, wave-Petrovsky and elasticity-elasticity.

14. IN121014

Dr. Bekir Sami Yilbas, Dr. B. Bhushan and Mr. B.J. Abdul Aleem, Mechanical Engineering

Laser Treatment of Pretreated H188 Alloy: Microstructure and Wear Characteristics of the Surface

Abstract: The Haynes 188 alloy is widely used in industry due to its hot corrosion resistance and high-temperature strength. The tribological properties of the alloy can be improved through various surface treatment methods. One of the surface treatment methods is laser-assisted processing, which has considerable advantages over conventional methods. Some of these advantages include fast processing, local treatment, precision of operation, and the low cost. Depending on the laser surface processing parameters, surface defects including voids, cavities, and microcracks may form after the completion of the process. Therefore, the proper selection of the laser processing parameters is essential for improved surface properties. Moreover, tribological properties of the surface can be improved further through inserting carbide particles such as B4C at the surface vicinity of the alloy during the laser treatment process. To achieve the particle injection, multi-steps carbon film containing B4C particles is necessary at the workpiece surface prior to the laser treatment process. However, the presence of imbedded B4C particles at the surface influences the cooling rates at the surface vicinity and the difference in thermal expansion coefficients between B4C particles and the base material may cause crack network formation at the treated surface. Consequently, investigation into morphological and metallurgical changes in the laser-treated layer with the presence of B4C becomes necessary. In addition, the assessment of the wear resistance of the laser treated surfaces is important from the practical application point of view. The data can be used to optimize the process parameters.

15. IN121015

Dr. Mohammad El-Attar, Dr. Moataz Ahmed and Dr. Mohammad Alshayeb, ICS Dept.

Juxtaposing with Antipatterns to Improve the Quality of BPEL Processes

Abstract: The Service Oriented Architecture is constantly increasing in popularity. Web services offer their users an efficient means to solicit and research publicly available services. A user may be interested in acquiring the best deal on a particular service or a product from a number of competitors that offer that service or product. For example, a customer interested in purchasing a particular book will be interested in obtaining the best price from a number of book vendors. Alternatively, users can be interested in the collaboration of a number of web services to attain a higher-level goal. For example, a user can be interested in a set of web services provided by couriers that can interact with each other to provide tracking and history details of a current shipment. BPEL has become the standard high-level language to define web services in a SOA. BPEL processes can be created to specify the invocation order of web services to achieve the desired goal. Using BPEL, a great deal of interaction information between web services and the BPEL process user can be specified, commonly known as defining a business process. Every BPEL business process has a purpose to achieve; this purpose is usually to provide a

service to the process's user. It is not necessary for the user to be human; the user of a business process can be another system. In any case, it is the responsibility of an E-commerce analyst to define BPEL business processes that provide the services that are in demand. However, "BPEL workflows" developed are vulnerable to mistakes and poor modeling designs by inexperienced modelers. In this research work, we propose to utilize the antipatterns concept to improve the quality of the "BPEL workflows". The main objective of this research project is to identify antipatterns for BPEL processes to improve the quality of web services deployed using the Service Oriented Architecture in Saudi Arabia.

16. IN121016

Dr. Sadhan Kumar De and Dr. Mamdouh Al-Harthi, Chemical Engineering

Graphene Reinforced Starch/Polyvinyl Alcohol Biodegradable Nano-composites

Abstract: During the last four decades, the daily usage of polyolefinic thermoplastics and different types of thermosets has increased tremendously. These materials are not biodegradable and their waste causes serious environmental problems. Land filling, incineration and recycling are the commonly used techniques to minimize the disposal problems. But the methods have their own disadvantages and limitations. Development of biodegradable polymers based on natural resources is a good option for the fabrication of products where high strength is not essential as far as applications, such as films and packaging, are concerned. Previously, we have studied preparation, characterization and morphology of starch/polyvinyl alcohol (PVA) blends and it has been found that mechanical integrity and strength are the weakness of the systems and they need reinforcement. Lately, graphene has emerged as a promising nanofiller and surface groups present on the graphene surface have been reported to interact with PVA, thus causing exfoliation of graphene sheets. Accordingly, we have chosen the development of graphene-reinforced biodegradable composites based on starch/PVA as the topic for this project. We propose to develop graphene-reinforced starch/PVA composites using the solution cast method, followed by compression molding. Both starch and PVA are hydrophilic and biodegradable in nature. We are further motivated by the fact that the hydroxyl groups present in both starch and PVA are expected to interact strongly with the oxygen-containing functional groups in graphene oxide, which normally remain admixed with graphene. The advantage of adding a nano-filler such as graphene is that a small amount of filler is enough to enhance the strength of the otherwise weak starch/PVA blend system. Studies on mechanical properties, thermal stability, water absorption characteristics and morphology will be done by using different techniques to optimize the material formulations. Finally, after identifying the material combinations with optimum nano-filler, weathering study will be conducted under the natural conditions of Saudi Arabia. Based on the results, rheological studies of the starch/PVA/graphene will be conducted in the molten state on selected combinations in order to examine if the compositions are processable by conventional plastic processing techniques such as extrusion, in addition to solution casting. The composites are likely to emerge as materials for applications in indoor and outdoor areas, household items, thin film for agriculture and packaging industries

17. IN121017

Dr. Mohammad Al-Shahrani

Existence and Approximation of Solutions of Multivalued Complementarity Problem with Applications

Abstract: There are many applications of nonlinear complementarity problems in different disciplines such as Optimization theory, Operation Research, Economics, Management, Engineering and Physics. Techniques employed to solve nonlinear complementarity problems serve as an important tool in finding the solution to equilibrium problems, split feasibility problems, optimization problems and variational inequality problems. The study of nonlinear complementarity problems for single- and multi-valued mappings in the different directions is in a developing stage and there are many open questions lying at the heart of this theory. The limit to which this theory may be extended is a subject of interest and an attempt to find answers to several unanswered questions may result in publications of some quality work. For this reason, the matter is receiving the attention of many outstanding mathematicians around the globe. In this project, we intend to extend some aspects of nonlinear complementarity problems of

single-value in the setup of Hilbert spaces to multi-valued maps and to Banach spaces on which order is endowed by closed and convex sets. We believe that this study will open new avenues of research and the results obtained can be used to find solutions of variation inclusion. We anticipate that, as applications of our results, some well-known results in current literature on this topic would follow. We also expect that our investigations would unify and strengthen several known existing results in the literature on nonlinear complementarity problems involving single- and multi-valued mappings defined on sets endowed with different topological structures.

18. IN121018

Prof. Bekir Yilbas

Performance Analysis of Thermoelectric Power Generators

Abstract: The operating parameters and the geometric configuration of thermoelectric power generator pins influence the generator performance. In the proposed work, the influence of the operating parameters and the geometric feature of the device pins on the output power and the efficiency of the thermoelectric power generator will be examined. The thermodynamics irreversibility lowering device efficiency will be identified through the entropy analysis. The operating parameters and geometric features of the device pins will be identified for improved device performance.

19. IN121019

Dr. Abeeb

Global Optimization Strategies for Welltest Analysis in Oil Reservoirs

Abstract: Well test analysis through various techniques has been the subject of research for several decades. In order to properly characterize and develop a reservoir, the accuracy of parameters obtained from well testing is important. Thus, a proper well test analysis is essential for proper reservoir management. Traditionally, non-linear regression is used in well testing for parameter estimation. However this technique has the disadvantage of getting trapped in local minima. An approach is required that can locate a global optimum point and escape from local minima. In this research, we study the use of three global optimization techniques, Particle Swarm Optimization (PSO), Differential Evolution (DE) and Covariance Matrix Adaptation Evolution Strategy (CMA-ES), to estimate the values of reservoir and well parameters such as permeability, skin damage near wellbore, wellbore storage coefficient, drainage radius, fracture storativity ratio and interporosity flow coefficient. Optimal values of reservoir and well parameters are obtained for three different reservoir models which include radial flow in a circular reservoir with a closed outer boundary condition, radial flow in a bounded (closed), naturally-fractured, circular reservoir and linear flow in a linear composite reservoir, with an infinite outer boundary condition; all the cases assume constant rate condition. The results obtained from global optimization techniques will be compared to traditional non-linear regression analysis. Based on this study, recommendations for the best technique are made. Based on the best performing algorithms, hybridization could be made between them to increase their computational efficiency.

20. IN121020

Dr. Mohammad Kafini

Blow-up results in some viscoelastic wave equations in the whole space

Abstract: In this project, we discuss three major problems in viscoelasticity. In these problems, we deal with viscoelastic wave equations with linear or nonlinear dampings and nonlinear source terms in the whole space. We aim to investigate the existence and nonexistence issue and study the competition of the viscoelastic damping together with other types of damping against a nonlinear source and to set up conditions that give blow-up results. It is known that working in the whole-space domain is different from the bounded domain case. This difference is due to the fact that Poincaré's inequality and some embedding inequalities are no longer valid. This causes several difficulties which have to be overcome.

21. IN121021

Dr. Basheer Chanbasha

Designing and Developing an Electromembrane for the Application of Explosive Chemical Marker Detection

Abstract: The objective of the project is to develop simple analytical methods to quantify trace level contaminants in drinking water and food samples. There are many examples where food items supplied to the consumer may not be free from a hazard. Perchlorate, a known thyroid endocrine disruptor, contaminates surface waters near military installations where solid fuel rocket motors are manufactured or assembled. It is, therefore, very important to monitor these contaminants and take appropriate measures to eliminate risks of such food contaminants in the Kingdom of Saudi Arabia. Due to the intricate nature of food and biological matrices, complex, time-consuming, sample preparation steps are required in order to quantify contaminants such as perchlorate. Hence, conventional sample preparation methods such as solid-liquid extraction and soxhlet extraction may be a source of errors or additional contamination. Therefore, we propose to develop a novel and simple sample preparation step based on microwave-assisted extraction (MAE) and electro-membrane extraction (EME) for perchlorate in food samples and the EME method alone for water samples. In the proposed work, independent methods for the extraction of perchlorate from complex food matrices and water samples will be developed. Optimization of the methods will include the determination of linearity, recoveries, and precision and matrix interferences. The proposed methods will be applied to a real sample (which will be collected in all provinces of Saudi Arabia) which includes seafood, seafood and milk-related products to monitor the contamination level of perchlorate.

APPROVED JUNIOR FACULTY GRANTS PROJECTS DURING THE FALL SEMESTER, 2012-2013

1. JF121001

Dr. Harun Pirim and Dr. Umar Al-Turki (Consultant), Systems Engineering Department

Graph-based Optimization Models to Cluster Relational Networks

Abstract: Many real-life problems are modeled using a network perspective. Networks are utilized in biological, sociological, and industrial contexts among others. Gene expression networks, ego networks, supply chain networks are some common examples. Some biological and social networks are constructed regarding the relations of objects, i.e., genes and actors. It is also easy to convert a network to a relational network using certain thresholds. The genes of an organism or the actors of a community are numerous. Massive populations comprise complex relations. It is important to understand and reveal sub-groups of populations which have a greater effect than others. In other words, focusing on the most remarkable components of relational networks helps in understanding complex relationships among objects. Many clustering algorithms are proposed to identify coherent sub-groups. However, viewing the clustering of relational networks as an optimization problem and developing network-based optimization models is not well studied. Integer programming formulations that will guide clustering algorithms are necessary to fill the gap that exists in the literature. The objective of this proposed research is to develop new optimization models for clustering relational networks, solving them for small problem instances, and validating the results. Integer programming and/or dynamic programming models will be used for that purpose. A commercial solver will be used to solve models for some published and simulated data sets. There are databases storing experimental biology data such as micro-array data sets. There are benchmark problems in a social network context. Hence, data sets from diverse fields will be utilized to obtain relational networks. The models will be solved for obtained and simulated relational data. Partition indices such as adjusted rand index and Jaccard index will be utilized to validate the performance of proposed optimization models.

APPROVED SABIC/FAST TRACK GRANTS PROJECTS DURING THE ACADEMIC YEAR 2012-2013

FAST TRACK PROJECTS

1. FT121001

Dr. Ahmed Khalifa, Finance & Economics Dept.

Oil Price Volatility and Systemic Risk across Financial Companies in the GCC Economies

Abstract: The project investigates the impact of oil price volatility on the systemic risk across the financial firms in the GCC economies. To achieve this goal, the project will follow two steps. The first step is to estimate both the short-run and long-run Marginal Expected Shortfalls (MES) based on the volatility of a firm's equity price, its correlation with the market return and the co-movement of the tails of distributions. The following dynamic parameters approach will enable us to estimate the impact of important variables (oil price volatility, the 2007/2009 financial crisis and macroeconomic variables) on the systemic risk of the GCC financial firms. This project focuses on constructing measures of systemic risk in the GCC financial market based on public market data. Furthermore, the project will use a methodology to determine which financial firms deserve more careful scrutiny and regulation in the GCC economies. Having estimated the results of the MES in the previous step, the second step will enable us to estimate the impact of the oil price volatility and the financial crisis on the systemic risk of those financial firms. We will make recommendations on spillover versus diversification strategies based on the hedge ratios (Kroner and Sultan, 1993) and optimal portfolio weights (Kroner and Ng, 1998).

2. FT121002

Dr. Salam Zummo, Electrical Engineering

Impact of Co-Channel Interference on Dual-Hop Opportunistic Relaying with Interference at Relay and Destination in Nakagami- m Fading Environments

Abstract: In wireless networks, space diversity can be achieved by using one or multiple relays to help the source node send its message to the destination. These are known as cooperative or relay networks. A lot of work has been conducted on the performance of such systems assuming noisy environments. It is well-known that co-channel interference inherently exists in wireless systems and networks. This problem arises as a result of network users sharing the same channels. Based on the operating conditions, the interference effect can be considered at the relay node, at the destination node, or at both. In the proposed work, we investigate the impact of interference on the performance of opportunistic decode-and-forward (DF) relay networks. More specifically, we will consider the schemes of opportunistic and incremental opportunistic dual-hop DF relay networks with interference at both the relay and destination nodes in Nakagami- m fading environments. We propose to investigate the impact of interference on the performance of the considered opportunistic relaying systems by analyzing the outage and symbol error probabilities. This work is expected to result in exact closed-form expressions for both outage and symbol error probabilities of the considered systems. Furthermore, we propose to evaluate the asymptotic behavior of the opportunistic DF relay system by deriving the outage probability at high signal-to-noise ratio values in addition to the diversity order and coding gain. In order to make sure of the accuracy of our proposed analyses, we propose to develop a Monte-Carlo simulator for the considered relay systems. Finally, we will provide numerical results that will be essential to illustrate the effect of interference on the considered systems performance. Our proposed results will be general and very useful in predicting the interference impact on the performance of opportunistic and incremental opportunistic DF relay systems.

3. FT121003

Dr. Khalid Furati, Department of Mathematics & Statistics

Inverse problems for fractional heat equation with Hilfer derivative

Abstract: In this project we intend to study the inverse problem for one dimensional fractional heat equations. In particular, we consider finding the temperature distribution and the heat source associated with given initial and boundary conditions. Also we investigate the existence and uniqueness of the solution.

4. FT121004

Dr. Khurram Qureshi and Dr. Shaikh Sharif Iqbal, Electrical Engineering

Development of all-optical logic devices using injection locking technique in Distributed Feedback Lasers

Abstract: Logic devices perform a certain Boolean logic operation on one or more logical inputs and produce a single logical output. These devices are the building blocks of today's digital electronics and computing systems that we see around us. Logic gates are inherently bistable devices as the output of these devices results in one of the two possible stable output states. These states are either logical high (true) or logical low (false). Similar to the transistors used in electronic circuitry, these logical devices turn light on or off based on a certain threshold. Some hybrid devices have been developed where the electro-optic effect is utilized to vary the refractive indices of optical waveguides to make voltage-controlled switches. The problem in all these devices is that they are restricted by the switching speed of electronics. To overcome this speed barrier, optics provides the viable solution. The big question here is how one can perform all this switching optically. A number of attempts have been undertaken to perform this switching all-optically. In this work we propose to develop all-optical logic gates based on injection locking in Distributed Feedback (DFB) lasers. Injection-locking techniques have recently gained a lot of attention because of their potential applications in the field of optical communications, optical signal processing, and in the study of various properties of lasers, to name a few. Various studies involving

injection-locking in semiconductor lasers have been undertaken. Most of the experimental and theoretical studies were performed on the Fabry Perot (FP) laser diodes. FP lasers exhibit multi-longitudinal mode spectra with comparable gain profile for most of the longitudinal modes. The presence of these multi-modes prevents an in-depth study of injection locking in this type of lasers. Another type of semiconductor laser is called distributed feedback (DFB) laser. These lasers inherently operate in a single longitudinal mode. All the side modes in this type of laser are greatly suppressed due to the presence of a distributed grating. In this study we propose to use the injection-locking technique for the development of all-optical logic devices. We plan to develop all-optical inverters and all-optical logic gates based on injection-locking techniques in DFB lasers.

5. FT121005

Dr. Luai Al-Hadhrani

Dr. Shafiqur Rahman, Mechanical Engineering

Feasibility of using small wind Turbines for Small off-grid Load in Saudi Arabia: A Case Study

Abstract: Providing electricity to remotely located dwellings in a vast country like Saudi Arabia is a challenge both technically and economically. This study looks into the possibility of utilizing small wind turbines to meet such loads

6. FT121006

Dr. Kamal Harb and

Dr. Samir Al-Abduljawad, Electrical Engineering

Broadband Satellite-Based Very Small Aperture System (VSAT) at the Ka-Band

Abstract: Ka-band has become the band of choice for many satellite operators due to its increasing capacity availability and its applicability for broadband services. So, in high-frequency satellite communications, especially at the Ka-band, enhancing estimation of channel attenuations can be of immense value in improving the quality of signals. Such a presentation of weather-related attenuation factors for the impending weather conditions in the Saudi Arabian areas (SAUDI- ARAMCO) is one of the objectives of this project. The project will also introduce a new achievement that uses previous work in this area and the work made for dust and sandstorm combined together in order to improve the quality of service (QoS) in channels that are impacted by the weather attenuations in the area under study. Based on that, a three-dimensional relationship will be proposed using a new adaptive scheme to estimate atmospheric attenuations with both propagation angle and estimated weather changes at a given location along with operational frequency. This novel method of predicting weather characteristics supplies valuable data for mitigation planning and subsequently for developing an enhanced back-propagation-learning algorithm to iteratively improve signal-to-noise ratio (SNR) to its optimal values for different cases.

7. FT121007

Dr. Salim Messaoudi

On some damped wave equations and Timoshenko systems by means of infinite history

Abstract: In this project, we consider some problems related to damped wave equations and damped Timoshenko systems, where the relaxation function satisfies $g'(t) \leq -Ks(t)g(t)$, $\forall t \geq 0$. We try to extend some general decay results, known for the case of finite history, to the case of infinite history. We also compare the obtained results with those obtained by Guesmia under different conditions on the relaxation functions. This, when obtained, will generalize the usual exponential and the polynomial decay results.

SABIC PROJECTS**1. SB121001**

Dr. Abul Kalam Azad, Mr. Mohammed Al-Osta of Civil Engineering Dept. and Dr. Shokri Selim, Systems Engg Dept.

Reliability Assessment of Corroded Reinforced Concrete Columns and Beam-Columns

Abstract: Columns and beams-columns are the key load-bearing elements in structures such as buildings and bridges, where exterior columns are the structural components most exposed to chloride attacks. This chloride-induced corrosion of steel reinforcement is the single most prevalent cause of concrete deterioration. Since the problems associated with corrosion of reinforced concrete are in general complex and random, the use of the reliability analysis will help to compute the probability of failure of the reinforced concrete beam-columns subjected to different degrees of corrosion damage. Such prior knowledge is helpful in deciding on a timely repair. In this study, an approach for predicting the residual strength of concrete columns and beam-columns subjected to reinforcement corrosion will be developed and a reliability analysis will be carried out using Monte Carlo simulation (MCS), and the reliability or safety index will be calculated by determining the probability of failure.

2. SB121002

Dr. Rached Ben Mansour and

Dr. Mohammad Habib of

Mechanical Engineering

Characteristics of oxycombustion of liquid fuels in a model furnace

Abstract: Oxyfuel combustion is one of the most promising aspects of carbon capture technology in the world. In this technology, oxygen is burnt in a combustion chamber with fuel and the combustion products include only CO₂ and H₂O which can be separated easily by a condensation process leaving behind only CO₂ that can be recycled or stored through the sequestration process. Due to the shortage of natural gas, liquid fuels are currently used. In addition, liquid fuels are by-products of other industries and are used for producing energy. Liquid fuels produce large amounts of carbon dioxide that need to be captured. The present work aims at studying the performance of a package boiler utilizing oxycombustion of liquid fuels. In the proposed work, a CFD model will be developed for the combustion of liquid fuels with oxygen in a model furnace of a package water tube boiler. This will be achieved through the development of droplet combustion modeling for a spray of liquid fuel with oxygen in the model furnace. The influence of CO₂ circulation on the combustion process in the liquid fuels will be numerically investigated. The performance of the oxy-fuel boiler will be compared to that of the conventional air-fired boiler. Temperature distribution and CO₂ concentration will also be calculated. The comparison of the oxy-fuel boiler against the conventional air-fired boiler is expected to provide new development in boiler furnace design.

3. SB121003

Dr. Jaafer Bin Mousa, Dr. Nesar Merah of Mechanical Engineering Dept. and Dr. Yanyao Jiang

Investigation on Fatigue Crack Orientation Prediction Based on Critical Plane Approach

Abstract: Fatigue failure is a phenomenon resulting from the application of cyclic loading. Most machines, such as automobiles, aircraft and rotating equipment, operate in a cyclic way. so their components are subjected to cyclic loading. Fatigue is considered to be a significant cause of mechanical component failure in oil and gas, petrochemical and manufacturing industries in Saudi Arabia. Fatigue analysis is considered as the primary tool in designing and/or analyzing machine components. Fatigue life prediction requires three aspects: fatigue damage parameter, fatigue life equation and material constants. Fatigue damage parameters are classified based on the definition of the parameter that quantifies fatigue

damage. This can be stress, strain or energy. In a critical plane approach, parameters are evaluated at specific planes; hence, both the fatigue life and the crack orientation can be predicted. Critical plane criteria have been widely used to analyze uniaxial and multiaxial loading conditions as well as isotropic and anisotropic materials. However, it was found that while critical plane criteria can provide a reasonable prediction of fatigue life, their predictions of the physical fatigue cracking plane are not in agreement with the experimental observations. This proposal aims to analyze existing critical plane models and closely investigate the merit of their predictions of physical cracking plane resulting in the development and/or recommendations for model improvement. Among the outcomes of the proposed work are a set of subroutines for critical plane search and a procedure for conducting fatigue testing related to critical plane methods.

4. SB121004

Dr. Muhammad Mysorewala and Dr. Lahouari Cheded, Systems Engineering Department

A Study of Sensing and Communication Energy Consumption in Wireless Sensor Network-Based Real-Time Water-Pipeline Leak Detection

Abstract: Complex industrial systems, such as pipeline systems consist of a large number of physical variables that are always subjected to a number of changes, for example pressure, temperature, and flow fluctuations. An efficient monitoring of such systems therefore requires that a large number of sensors be employed to gather the necessary amount of information. The development of an efficient scheme for the network's energy utilization and management is therefore of vital importance as it leads to the minimization of not only the network's energy, resources and running cost, but also ensures the sustainability of its operation and an increase in its lifetime and reliability. Other areas of great benefit and economic impact to the Kingdom include monitoring and leak detection in oil and gas pipeline networks, estimation of environmental parameters (salinity and moisture distribution in a crop field, etc), and several areas of condition-based maintenance, such as smart corrosion detection and vibration analysis networks. The purpose of this work is to investigate the overall effectiveness of existing approaches for pipeline leak detection from the viewpoint of energy efficiency, when implemented using Wireless Sensor Networks (WSN). This will be an extension of our previous work on "Adaptive Sampling" of environmental parameters where we developed the quantitative information measure for maximizing the information gains of the field-of-interest and reducing the sampling time, but did not take into account, in our scheme, an awareness of sensing and communication energy, which are vital aspects of any efficient WSN, regardless of the application it is applied to. Traditional pipeline leak detection methods generally use two types of sensors: invasive (or in-pipe) sensors, and non-invasive sensors. This work will focus on non-invasive-sensor-based approaches for pipeline leak detection, where the energy consumption in sensing and communication among the nodes will be thoroughly investigated and estimated. We will evaluate the leak detection approaches using available powerful simulation packages (e.g. PIPENET and EPANET), and use real data obtained from a simple scalable testbed to be developed in our lab. Based on the results of our study, we will then conclude by proposing solutions that will minimize the energy consumed in sensing and communication, while at the same time, ensuring an accurate and timely leak detection.

5. SB121005

Dr. Sheikh Sharif Iqbal, Dr. Khurram Karim Qureshi, and Dr. Raj Mitra,
Electrical Engineering Department

A Novel Phase-Shifter-less Beam Scanning Technique Using Engineered Gyrotropic Superstrate

Abstract: Beam scanning antennas are currently used in flexible wireless communication devices which need reconfigurable coverage. The principles of beam scanning in a phased array are well established, where radiating elements are excited with signals having constant phase progression. Typically, this progressive phase is established using electronically controlled phase shifters. Recent phased array antennas often require a large number of phase shifters, which increases the size, weight and integration complexity of the antenna array. Techniques, including aperiodic thinned arrays, are used to reduce the cost, weight and power consumption of the antenna by reducing the number of array elements and the

related amplitude/phase controlling mechanism. However, the method deteriorates the gain and side-lobe characteristics of the antenna. Another method to achieve beam scan without using phase shifters involves coupled oscillators, where active patch antennas are used to adjust the frequencies of the oscillators to adjust the direction of the radiated beam. But the tradeoff between the scan-range and bandwidth remains one of the limiting factors. This research project proposes to design an engineered gyrotropic superstrate, which when externally biased can control the beam scanning properties of a phase shifterless microstrip array antenna. Engineered dielectrics with an array of metal strips have been widely used as lightweight superstrate to influence the radiating characteristics of an antenna. By placing the superstrate at a specific distance from the microstrip antenna, a Fabry-Perot (FB)-like cavity can be formed, which demonstrates improved gain, directivity and beam-squinting properties. In this research, an engineered gyrotropic superstrate will be used to form a FB cavity resonator, which when optimized improves the interaction between the radiating EM wave and the gyromagnetic properties of the superstrate. The superstrate will be externally magnetized to introduce tapered insertion phase, needed to generate a beam scanning of at least 15° . The antenna will be optimized to achieve a directivity increase of at least 30%. Professional software (HFSS and COMSOL) will be used to optimize the components of the array, namely linear array of 4-patches, engineered gyrotropic superstrate and the FB cavity resonator. Results from the professional simulators are widely accepted, provided the simulation model is created by a competent user. The authors have already published papers, where simulated results using HFSS are experimentally verified.

APPROVED RESEARCH GROUP PROJECTS DURING THE ACADEMIC YEAR 2012-2013

1. RG1301-1 RG1301-2

Dr. Bekir Sami Yilbas and
Dr. Saad Bin Mansour, Mechanical Engineering

Phonon Transport across Thin Films in Relation to Thermoelectric Applications

Abstract: Phonon transport in thin films will be investigated in relation to thermoelectric applications and frequency-dependent Boltzmann Transport Equation and will be solved numerically using the discrete ordinates method. The influence of film size on the phonon transport will be examined through computing an equivalent equilibrium temperature in the film. Thermal boundary resistance across the films will be incorporated in the analysis. The study will be extended to include phonon transport in the dielectric-metal film pairs and their interfaces. Electron-phonon coupling and modified two-equation model will be considered to compare the findings of the solution of the Boltzmann equation in terms of phonon lattice and electron temperatures.

2. RG1302-1 RG1302-2

Dr. Shakhawat Chowdhury, CE
Dr. Mohammad Al-Zahrani, CE
Dr. Mohammed Al-Suwaiyan, CE
Dr. Muhammad T. Rahman, CRP

Selecting dam locations for maximizing rainwater harvesting in Saudi Arabia

Abstract: The rapid growth of population, insufficient recharge, increased agricultural and landscaping activities and the implications of global warming have stressed the water resource systems in Saudi Arabia. Water demands for the Kingdom were approximately 18,500 million cubic meters (MCM) in 2009, in which 83.5% were for agriculture. The domestic and industrial water demands in 2009 were 2330 and 713 MCM, respectively. The water demands are currently satisfied by the non-renewable groundwater, renewable surface and groundwater, desalinated water and treated wastewater, in which the

non-renewable groundwater sources supply the most followed by renewable surface and groundwater, desalinated water and treated wastewater. However, the available sources of water are limited. Using data from the 1980s, the non-renewable ground water reserves were estimated to be 259,100 – 760,600 MCM with an effective annual recharge of 886 MCM. Approximately 141,100 MCM of this reserve was exhausted by 1996. The total internal renewable water was estimated to be 2400 MCM/year, in which approximately 1400 MCM/year of runoff was stored in 302 dams across Saudi Arabia. The purposes of the dams were to control floods and store water to recharge the shallow aquifers, and supply water for agriculture and drinking. The country produces approximately 1060 MCM desalinated water annually, which is blended with groundwater for domestic water supplies. The generation of domestic wastewater was approximately 1600 MCM/year, in which approximately 730 MCM/year is treated but 325 MCM/year is recycled for reuse. The water demands and available resources demonstrate that Saudi Arabia must act on finding new sources and conserve water. To conserve water, the Ministry of Economy and Planning (MOEP) has adopted a policy to reduce agricultural water demands from 15464 MCM in 2009 to 12794 MCM in 2014 (-3.7%/year) mainly by reducing the cultivated area, which might have implications for the food security of the country. Increasing the storage of surface runoff might provide significant support toward maintaining water balance. The average rainfall in the country is approximately 125 mm/year, while the averages in the northern and southern regions are 70.1 and 264.6 mm/year. It is not uncommon to see approximately 600 mm/year of rainfall in the south-western region of the country. The largest quantity of runoff (60% of total runoff) occurs in the western region although it covers only 10% of the total area of the country. The remaining 40% of the runoff occurs in the far south of the western coast covering approximately two percent of the total area. Approximately 89 dams in Asir, Jazan, Al-Baha and the coast of the south-western region store about 600 MCM of surface runoff for control, drinking and irrigation purposes. The annual rainfall in these four areas is likely to be approximately 4000 MCM per year, which might produce much more surface runoff than the present capacity of the dams. It is important to maximize the storage of surface runoff to recharge the shallow aquifers, control floods and satisfy agricultural, industrial and domestic water demands in Saudi Arabia. This may assist in achieving food security for the country and lower the cost of producing and distributing drinking water. The proposed research will investigate the maximum amount of surface runoff that can be stored in the south-western region of Saudi Arabia and the locations of the new dams to be built for this purpose. Two key points will be investigated: (i) characterizing the rainfall patterns and surface runoff in the south-western region of Saudi Arabia; and (ii) identifying the areas with high runoff potential and possible locations for the runoff storage dams.

3. RG1303-1 RG1303-2

Dr. Mohammad Abido, EE

Dr. Ibrahim El-Amin, EE

Mr. F.R. Zarooof, EE

Dr. Mohammed El-Gebeily, Math

A New Harmonic Estimation and Mitigation System Using Wavelet Packet Transform

Abstract: The Saudi oil & gas and petrochemical industries are currently utilizing advanced automation technologies, which are very sensitive to harmonics. Any small exist for harmonics beyond the standard values can cause a loss of millions to these sensitive industries. On the other hand, a large number of bulk industrial customers are directly connected to the transmission network in Saudi Arabia. Industrial loads such as rolling mills in steel works and resistance welders, in addition to load categories such as motor starting and sudden load switching, produce various power quality problems in transmission networks. These harmonics drastically affect the quality of the energy distributed by electrical companies. This situation is expected to worsen in Saudi Arabia in the near future when massive industrial loads are expected. Serious action must be considered to improve the quality of power being supplied to the industrial customers and relief more transmission capacity. Modern electric power systems with new distributed renewable power sources such as wind power and solar power have seen the participation of a large number of new power electronic devices. The recently developed technology related to the concept of “smart grid” in power systems also contributes to making the system more complex. The increasing use of power electronics devices contributes further to the increasing power quality problem. This problem is becoming increasingly serious, and has been a great threat to the safety of electric power

systems and the national economy as a whole. This project aims to apply novel methods of digital signal processing to build real-time intelligent mitigation strategies to achieve electric networks with higher power quality, greater efficiency, and higher reliability. The mitigation strategies will be implemented in a laboratory scale prototype using advanced software, advanced digital signal processors, developed data acquisition cards, power electronic converters, and a simplified model for the network with its associated bulk loads. The project entails four main phases. In the first phase, a comprehensive literature review on digital signal processing applications for real-time mitigation systems will be conducted. In the second phase, digital signal processing-based intelligent detection of harmonics components and the proposed control strategies will be developed to achieve higher supply quality and reliability. The third phase of the project will focus on implementing the developed control strategies in a laboratory environment. The required experimental work to validate the proposed mitigation and control strategies will be carried out in the fourth phase. In addition, the developed prototype system will help in building research capacity in the area of digital signal processing applications for power quality and reliability in electric networks. The project will be completed within 36 calendar months at a total cost of 341,000 USD.

**3. RESEARCH PROPOSALS SUBMITTED DURING
THE FALL SEMESTER OF 2012-2013 UNDER REVIEW**

Proposal #	Title of Proposal	Name of Investigators	Dept.
IP121-CS-01	Transient Forced Convection in Semicircular Tubes	Dr. Rajai Alassar	MATH
IP121-CES-02	Low-Density Parity-Check Codes for ARQ-based Cooperative Diversity Schemes	Dr. Maan A. Kousa,	EE
IP121-CES-03	Laser Treatment of Pretreated H188 alloy: Microstructure and Wear Characteristics of the surface	Dr. Bekir S. Yilbas Prof. B. Bhushan Mr. Abdul Aleem	ME
IP121-CES-04	HVOF Spraying of Carbide-Blended Powders on Steel Surfaces: Metallurgical Characterization and Wear Analysis	Dr. Bekir S. Yilbas Prof. B. Bhushan Mr. Abdul Aleem	ME
IP121-CES-05	Numerical Investigation of High-Speed Jet Impingement Tones	Dr. Mohammed Khalil Ibrahim Prof. Ahmed Z. Al-Garni	AE
IP121-CES-06	Numerical Investigation of Propagation of Shock Waves in a Variable Porosity Medium	Dr. Mohammed Khalil Ibrahim Prof. Ahmed Z. Al-Garni	AE
IP121-CS-07	Blow-up results in some viscoelastic wave equations in the whole space	Dr. Mohammad Kafini Prof. Mohammad Islam Mustafa	MATH
IP121-CS-08	Well-posedness and stability for coupled abstract evolution equations with one infinite memory	Dr. Aissa Guesmia Prof. Boumediene Chentouf,	MATH
IP121-CS-09	Benthic foraminiferal taxonomy and distribution in the Arabian Gulf, offshore Saudi Arabia: Relation to substrate parameters	Dr. Michael A. Kaminski Dr. Khalid Al Ramadan Dr. Lamidi Babalola Dr. Fabrizio Frontalini	ES
IP121-CIM-10	Student Preference for Conventional and Islamic Finance – Comparative Analysis of Saudi Arabia and South African Students	Dr. Mohamed A. Ramady Prof. Sadiq Sohail Dr. Johan Coetzee	FINEC
IP121-CS-11	Enlarging the class of activation functions in neural networks theory	Dr. Nasser-eddine Tatar	MATH
IP121-CCSE-12	Abstract State Machines (ASM) Mutation Testing	Dr. Jameleddine Hassine	ICS
IP121-CS-13	Stretched Flame Velocities in Hydrogen and Hydrocarbon Flames Using Realistic CHEM	Dr. Nadeem Malik	MATH

Proposal #	Title of Proposal	Name of Investigators	Dept.
IP121-CS-14	Coincidences and approximation of multi-valued mappings with applications	Dr. Dr. A. R. Khan Dr. H. Fukhar-ud-din Dr. M. Abbas	MATH
IP121-CS-15	Existence and Approximation of Solutions of Multivalued Complementarity Problem with Applications	Dr. Mohammed Alshahrani, Prof. Suliman Al-Homidan, Prof. Qamrul Hasan Ansari, Dr. Mujahid Abbas	MATH
IP121-CS-16	Cathode/Anode Channels Optimal Shape Designs For PEM Fuel Cells	Dr. Jamal Hussain Al-Smail Dr. Sleem Ur. Rahman Prof. Yves Bourgault	MATH
IP121-CES-17	Development of Austenitic Stainless Steel Alloy with Si addition for Improved Corrosion Resistance Properties	Dr. Ihsan Ul Haq Toor Prof. Naseer Al aqeeli Mr. Murtaza Ali Baig Mirza Mr. Faheemuddin Patel	ME
IP121-CASS-18	Impact of Aerobic and Aerobic Cross-Training on Coronary Heart Disease (CHD) and Bio-motor Variables among Obese Males	Dr. Kaukab Azeem Dr. Varghese C Antony	PE
IP121-CS-19	On Exact Solutions and conservation laws of Wave equation in a 4-spacetime	Dr. Ashfaq H. Bokhari Prof. F. D. Zaman Dr. Andrew G. Johnpillai,	MATH
IP121-CIM-20	Analysis of Comparative Economic Performance and Energy Efficiency at Macro Level: A Novel Approach for Assessing Energy-Economy Nexus,	Dr. Reza Aghdam, Dr. Mohsen Al-Hajji Mr. Omar Altiti	FINEC
IP121-CES-21	Surface modification of Polyether ether ketone (PEEK) for high-wear durability	Dr. Mohammed Abdul Samad Prof. Amro Al-Qutub	ME
IP121-CES-22	Optimization of Processing Parameters for the Development of Al-SiC Nanocomposites with Improved Mechanical Properties	Dr. Nouari Saheb Dr. Nasser Al-Aqeeli Dr. Hassan Syed Fida	ME
IP121-CES-23	Development of Magnesium-based Hybrid (metallic + ceramic) Nanocomposites by Powder Metallurgy Process	Dr. Syed Fida Hassan Dr. Nasser Al-Aqeeli Dr. Nouari Saheb Mr. Faheemuddin Patel Mirza Murtuza Ali Baig	ME

Proposal #	Title of Proposal	Name of Investigators	Dept.
IP121-CCSE-24	Optimal Production Quantity When Machine Undergoes Coorective and Preventative Maintenance	Dr. Shokri Z. Selim	SE
IP121-CCSE-25	Juxtaposing with Antipatterns to Improve the Quality of BPEL Processes	Dr. Mohamed El-Attar Prof. Moataz Ahmed Prof. Mohammad Alshayeb	ICS
IP121-CIM-26	Econometric analysis of various dimensions of the Australian experience from liberalization of its electricity market: Would there be any policy lessons for the evolution of Saudi Arabia's electricity sector?	Dr. Reza Fathollahzadeh Aghdam, Prof. Mohammad Al-Sahlawi Mr. Omar Altit, Prof. Stefan Trueck	FINEC
IP121-CES-27	Modeling and Experimental Validation of Pre-Rolling Resistance through Pendulum Oscillations under various functional conditions	Dr. Samir Mekid Dr. Shafique Khan Prof. Igor Gilavdary	ME
IP121-CS-28	Growth, Characterization and Optical Study of non-metal (Nitrogen and Carbon) doped Titanium Dioxide (TiO ₂) by Sputtering Technique.	Dr. Shankar Kunwar Prof. Nour TAbet	Physics
IP121-CES-29	Graphene-Reinforced Starch/Polyvinyl Alcohol Biodegradable Nano Composites	Dr. Prof. Sadhan Kumar De Prof. Mamdouh Al-Harthi	CHE
IP121-CASS-30	Construction of Soccer Skill Norms For University-Level Players of Saudi Arabia	Dr. Abdussalam Kanniyar Prof. Yahya Daoud Prof. Adewale Adejumo	PE
IP121-CASS-31	State Anxiety and Self-Efficacy among Low and High Performer Athletes - A Comparative Study	Dr. Dr. Syed Ibrahim Mr. Hassan Al Moslim	PE
IP121-CES-32	Global Optimization Strategies for Welltest Analysis in Oil Reservoirs	Dr. Dr. Abee Abotunde	PETE
IP121-CASS-33	Effect of Physical Activity and General Motor Fitness on Social Adjustment Level and Academic Achievement of Secondary School Students in Saudi Arabia	Dr. Abdussalam Kanniyar, Prof. Ertan Tufekcigolu, Prof. Hamed Abu Hilal	PE

Proposal #	Title of Proposal	Name of Investigators	Dept.
IP121-CIM-34	The Effect of Crude Oil Prices on Herding Behavior among Investors in the Gulf Cooperation Council (GCC) Equity Markets	Dr. Talat Ulussever Prof. Riza Demirer	FINEC
IP121-CS-35	Designing and Developing an Electromembrane for the Application of Explosive Chemical Marker Detection	Dr. Basheer Chanbasha, Dr. Mohammed Essa	CHEM
IP121-RI-36	Investigation of efficacy of Shape Memory Alloys (SMAs) for strengthening and retrofitting of Beam-Column Joints (BCJs)	Dr. M.K. Rahman Dr. Muhammad Baluch Dr. Ali Al-Gadhib	RI – CER
IP121-CES-37	Blind Image Quality Assessment using Neural Networks	Dr. Mohamed Deriche Dr Mohamed Mohandes Prof. Azzedine Beghdadi	EE

**4. JUNIOR FACULTY GRANT PROPOSALS RECEIVED
IN THE FALL SEMESTER OF 2012-13 UNDER REVIEW**

Project Code	Title	Investigators	PI Dept.
JP121-CS-01	Mathematical Modeling and Computation for Fluid Dynamics Partial Differential Equations Using FreeFem	Dr. Jamal Al-Smail	MATH
JP121-CED-02	Ultimate Failure Envelope of Square Columns Confined with FRP and Steel Ties.	Dr. Ahmed Abd El Fattah, Prof. Sadi Assaf	ARC
JP121-CCSE-03	Graph-based Optimization Models to Cluster Relational Networks	Dr. Harun Pirim Prof. Umar Al-Turki	SE
JP121-CES-04	Energy Transport in Dielectric and Metallic Thin Film Pairs	Dr. Saad Bin Mansoor Prof. Dr. Bekir Sami Yilbas	ME
JP121-CASS-05	The Proposed Gulf Union: Prospects and Viability	Dr. Mark Thompson Dr. Shafi Aldamer	GS
JP121-CED-06	Development of a Prediction Tool to Evaluate Wind Energy Production for Building Integrated Wind Turbine toward the realization of net Zero Energy Buildings	Dr. Mohammad Babsail Dr. S.A.M. Said	ARC
JP121-CCSE-07	Formal Specification and Verification of Service Compositions in Orc Based on	Dr. Musab A. AlTurki Dr. Moataz Ahmed	ICS

**5. BOOKWRITING PROPOSALS RECEIVED
IN THE FALL SEMESTER OF 2012-13 UNDER REVIEW**

Project Code	Title	PI Department	Department
BW121-CCSE-01	Analysis and Synthesis of Fault-Tolerant Control Systems	Dr. Magdi Mahmoud	SE
BW121-CCSE-02	Introduction to Maintenance Engineering: Modelling, Optimization and Management	Dr. Mohamed Ben-Daya	SE
BW121-CES-03	Aircraft and Wind Turbine Icing	Dr. Farooq Saeed	AE
BW121-CES-04	Laser Drilling and Practical Applications	Dr. Bekir Yilbas	ME
BW121-CES-05	Advanced Digital Signal Processing of Seismic Data	Dr. Wail Mousa	EE

**6. FAST-TRACK AND SABIC PROPOSALS RECEIVED FOR
FUNDING DURING THE FALL SEMESTER OF 2012-2013**

Project code	Title	Investigators	PI Department
SF121-CES-01	Characteristics of Oxycombustion of Liquid Fuels in a Model Furnace	Dr. Rached Ben-Mansour Prof. Mohamed A. Habib	ME
SF-121-CES-02	Current Comparator	Dr. Munir Al-Absi	EE
SF121-CS-03	Cooling Donuts	Dr. Rajai Alassar	MATH
SF121-CS-04	On some damped wave equations and Timoshenko systems by means of infinite history	Dr. Salim Messaoudi Dr. Aissa Guesmia	MATH
SF121-CES-05	Analysis of Two-Phase Flow Maldistribution in Heat Exchangers	Dr. S.A.M. Said Prof. M. A habib Dr. R. Ben-Mansour	ME
SF121-CIM-06	Internal Marketing, Employee Satisfaction And Impact On Service Quality	Dr. Mohammed Sadiq Sohail,	MGT MKT
SF121-CS-07	Inverse problems for fractional heat equation with Hilfer derivative	Dr. Khaled Furati, Prof. Mokhtar Kirane	MATH
SF121-CCSE-08	A Study of Sensing and Communication Energy Consumption in Wireless Sensor Network-based Real-time Water-Pipeline Leak Detection	Dr. Muhammad Mysorewala, Dr. Lahouari Cheded	SE
SF121-CS-09	Iterative construction of pseudocontractive type maps with applications	Dr. H. Fukhar-ud-din Prof. Abdul Rahim Khan Dr. A.Razani	MATH

Project code	Title	Investigators	PI Department
SF121-CES-10	Reliability Assessment of Corroded Reinforced Concrete Columns and Beam-Columns	Dr. Abul Kalam Azad Mr. Mohammed Al-Osta Prof. Sokri Selim	CE
SF121-CIM-11	Oil Price Volatility and Systemic Risk across the Financial Companies in the GCC Economies	Dr. Ahmed Khalifa Prof. Shawkat Hammoudeh,	FINEC
SF121-CS-12	Random Product of Linear and Nonlinear Operators	Dr. Issam Louhichi Prof. Mohamed Amine Khamsi	MATH
SF121-CES-13	An Exploratory Study of Hollow Core Slab Construction Using Ultra-High-Performance Concrete	Dr. Abul Kalam Azad Mr. Ibrahim Y. Hakeem	CE
SF121-CES-14	Feasibility of Using Small Wind Turbines for Small Off-grid Load in Saudi Arabia: A Case Study	Dr. Luai Al-Hadhrami Dr. Shafiqur Rehman	RI – CER
SF121-CES-15	Performance of Incremental Opportunistic DF Relaying with Interference at Relay and Destination over Nakagami- m Fading Channels	Dr. Salam A. Zummo	EE
SF121-CS-16	Development of solid-phase extraction (SPE) procedure based on synthesized nanocomposites	Dr. Tawfik Abdo Saleh Dr. Khalid R. Alhooshani	CHEM
SF121-CES-17	Broadband Satellite-Based Very Small Aperture System (VSAT) at the Ka-Band	Dr. Kamal Harb Prof. Samir Abdul-Jauwad	EE

Project code	Title	Investigators	PI Department
SF121-CES-18	Development of All-optical Logic Devices Using Injection Locking Technique in Distributed Feedback Lasers	Dr. Khurram Qureshi Dr. Sheikh Sharif Iqbal Prof. Prof TAM Hwayaw	EE
SF121-CES-19	Investigation on Fatigue Crack Orientation Prediction Based on Critical Plane Approach	Dr. Jafar Albinmousa Prof. Nesar Merah Prof. Yanyao Jiang	ME
SF121-CES-20	A Novel Phase Shifter-less Beam Scanning Technique Using Engineered Gyrotropic Superstrate	Dr. Sheikh Sharif Iqbal Mitu Dr. Khurram Karim Qureshi Prof. Raj Mittra	EE
SF121-CCSE-21	An Improved Hybrid Computational Intelligence and Linear Discriminant Analysis System for Face Recognition	Dr. Amar Khoukhi	SE
SF121-CES-22	Impact of Co-Channel Interference on Dual-Hop Opportunistic Relaying with Interference at Relay and Destination in Nakagami- m Fading Environments	Dr. Prof. Salam A. Zummo	EE

**7. LIST OF RESEARCH GROUP PROPOSALS SUBMITTED FOR FUNDING
DURING THE FALL SEMESTER OF THE ACADEMIC YEAR 2012-2013**

Project code	Title	Names of PI	Department
RG121-CES-01	Phonon Transport Across Thin Films in Relation to Thermoelectric Applications	Dr. Bekir S. Yilbas Dr. Saad Bin Mansoor	ME
RG121-CES-02	Selecting dam locations for maximizing rainwater harvesting in Saudi Arabia	Dr. Shakhawat Chowdhury Dr. Muhammad Al-Zahrani Prof. Mohammed S. Al-Suwaiyan, Prof. Muhammad Tauhidur Rahman,	CE
RG121-CS-03	Projective and Injective Semimodules (Revisited)	Dr. Jawad Abuihlail	MATH
RG121-CES-04	A New Harmonic Estimation and Mitigation System Using Wavelet Packet Transform	Dr. M. Abido Prof. M. A. Abido Prof. I. M. Elamin Prof. M. El-Gebeily Mr. F. R. Zaro	EE
RG121-CS-05	Transport Properties in Layered Graphene Systems	Dr. H. Bahlouli Prof. Jellal and Al-Haidari	PHYS
RG121-CES-06	Robust Monitoring and Control of Power System Smart Grids	Dr. Ibrahim Omar Habiballah, Prof. M Abido Prof. A Rahim	EE
RG121-CCSE-07	Recognition of Unconstrained Handwritten Arabic Text Using HMM-Based Script Appearance Modeling	Dr. Sabri A. Mahmoud Mr. Irfan Ahmad Prof. Dr. Gernot A. Fink,	ICS
RG121-CES-08	Seismic Deconvolution of Sparse Reflectivity Using Compressive Sensing Techniques	Dr. Tareq Y. Al-Naffouri, Prof. Aldo Vesnaver Mr. Muhammad S. Sohail	EE
RG121-CES-09	Flood Modeling Using WMS Software: A Case Study of Hafer Al-Baten City, Eastern Province, Saudi Arabia	Dr. Mudammad Al-Zahrani Dr. Shakhawat Chowdhury Dr. Muhammad Tauhidur Rahman, Dr. Rajai Samih Alassar	CE
RG121-CES-10	Equalization for Wideband Fast Varying Wireless Communication Channels	Dr. Abdelmalek Zidouri Dr. Azzedine Zerguine Dr. Samir Alghadban Prof. Asrar Ul Haq Shaikh	EE
RG121-CES-11	A Feasibility Study of One New Solar-Powered Adsorption Refrigerator at Dhahran	Dr. Mostafa H Sharqawy Prof. Esmail M Mokheimer	ME

**LIST OF SPECIAL SOCIETAL GRANTS RESEARCH PROPOSALS SUBMITTED
FOR FUNDING DURING THE FALL SEMESTER OF THE ACADEMIC YEAR
2012-2013**

Project code	Title	Names of PI	Department
SS121-CASS-01	Educational and Scientific Ethics in Schools and Universities of the Kingdom of Saudi Arabia	Dr. Akram Reda Dr. Ashraf Farahat Dr. Emad Ramadan	GS

**LIST OF SABBATICAL LEAVE RESEARCH PROPOSALS SUBMITTED FOR
FUNDING DURING THE FALL SEMESTER OF THE ACADEMIC YEAR 2012-2013**

Project code	Title	Names of PI	Department
SL121-CES-01	Performance Analysis of Thermoelectric Power Generators (Release time)	Dr. Bekir S. Yilbas	ME
SL121-CS-02	Geostatistical Characterization of a Groundwater Aquifer: A Water Resource Management and Optimization Approach	Dr. Mohammad H. Makkawi	ES

8. PUBLICATIONS IN REFEREED JOURNALS REPORTED AFTER JULY 2012

College of Engineering Sciences

Civil Engineering

1. "Decision Making with Uncertainty: An Example of Water Treatment Approach Selection", **Chowdhury S.**, Water Quality Research Journal of Canada (WQRJC): 47(2): 2012, p. 153-165.
2. "Heterotrophic Bacteria in Drinking Water Distribution System: A Review", **Chowdhury S.**, Journal of Environmental Monitoring and Assessment, 184(10), 2012, p. 6087-6137.
3. "Letter to Editor: On Risk Assessment", **Chowdhury S.**, Journal of Hazardous Materials, 237–238, 2012, P. 384–385.
4. "Implications of Using Steady-State Conditions in Estimating Dermal Uptakes for Volatile Compounds in Municipal Drinking Water: An example of THMs", **Chowdhury S.**, Journal of Human and Ecological Risk Assessment 18(5), 2012. P. 1051-1068.
5. "Numerical Simulation of Chloride Diffusion in RC Structures and the Implications of Chloride Binding Capacities and Concrete Mix". **Ali H. Al-Gadhib**, International Journal of Civil & Environmental Engineering, IJCEE-IJENS, Vol: 10 No. 05.
6. "Assessment and Modeling of Qualitative Damage Induced Chloride Diffusivity on Concrete Durability". **Ali H. Al-Gadhib, Jinyan Wang and Faisal Muktar**, International Congress on Durability of Concrete, June 18-21, 2012.
7. "A Study on Effect of Coarse Aggregate Type on Concrete Performance" **Shamsad Ahmad and Saeid A. Al-Ghamdi**, , The Arabian Journal for Science and Engineering, Vol. 37, August 2012, pp. 1777–1786.

Chemical Engineering

1. Effect of Glycerol on the Physical and Thermal Properties of Starch/PVA blends", **Sreekumar P.A., Mamdouh A. Al-Harthi, S. K. De**, Journal of Applied Polymer Science, 123, 135-142, 2012.
2. "Effect of Phenol Functionalization of Carbon Nanotubes (CNT) on Properties of Natural Rubber Nanocomposites", **Selvin Thomas P, A Abdullateef, Mamdouh A Al-Harthi, De S. K. , Bandyopadhyay S, Basfar A A, and Atieh M A**, Journal of Applied Polymer Science, 124, 2370-2376(2012).
3. "Natural Rubber Nanocomposites with Functionalized Carbon Nanotubes: Mechanical, Dynamic Mechanical and Morphology Studies", **Abdullateef A A, Selvin Thomas P, Al-Harthi M A, De S. K., Bandyopadhyay S, Basfar A A, and Atieh M A**, Journal of Applied Polymer Science, 125, E76-E84 (2012).

4. "Electrical Properties of Natural Rubber Nanocomposites: Effect of 1-Octadecanol Functionalization of Carbon Nanotubes", **Selvin Thomas P, Adedigba A Abdullateef, Mamdouh A Al-Harhi, Muataz A Atieh, S. K. De, Mostafizur Rahaman, T. K. Chaki, D. Khastgir, Sri Bandyopadhyay**, Journal of Materials Science, 47, 3344-3349(2012).
5. "Easy One-Pot Method to Control the Morphology of Polyethylene/Carbon Nanotube Nanocomposites Using Metallocene Catalysts", **Bijal Kottukkal Bahuleyan, Muataz Ali Atieh, Sadhan Kumar De, Masihullah J, and Mamdouh Al-Harhi**, Journal of Polymer Research, 19, 9744-9751(2012).
6. "Studies on Compatibility of Biodegradable Starch/Polyvinyl Alcohol Blends", **Sreekumar P.A., Mamdouh A. Al-Harhi, S. K. De**, Polymer Engineering & Science, DOI 10.1002/pen.23178.
7. "Effect of Aluminium Nitride on the Properties of Polyethylene Obtained by In Situ Polymerization using Ni(II) Diimine Complex", **Bijal Kottukkal Bahuleyan, S. K. De, P. U. Sarath, Sarfaraz Ahmed Furquan, J. Masihullah, Abdul Hamid Emwas, Mamdouh A. Al-Harhi**, Journal of Macromolecular Research, 2012, DOI:10.1007/s13233-012-0105-3.
8. "Reinforcement of Starch/Polyvinyl Alcohol Blend using Nano-Titanium Dioxide", **Sreekumar P. A., Mamdouh Al-Harhi, S. K. De**, Journal of Composite Materials , 2012, DOI : 0021 998312436998.
9. "Natural Weather Ageing of the Low Density Polyethylene: Effect of Polystarch", **Ruhul M. Amin, Sreekumar P.A., Mamdouh A. Al-Harhi, S. K. De, Basel F. Abu-Sharkh**, Journal of Applied Polymer Science, 2012: DOI; 10.1002/app.37786.
10. "Rheological Behaviour of Polypropylene Nanocomposites at Low Concentration of Surface Modified Carbon Nanotubes", **Selvin Thomas P, Salihu Adamu Girei, Muataz Ali Atieh, S. K. De, Abdulhadi Al-Juhani**, Polymer Engineering & Science, 52, (9), 1868–1873, (2012).
11. "Effect of Mn Doped-Titania on the Activity of Metallocene Catalyst by In-situ Ethylene Polymerization", **Abdul Kaleel S.H, Bijal Kottukkal Bahuleyan, S. K. De, Masihullah, Rachid Sougrat and Mamdouh Al-Harhi**, J. Industrial & Engineering Chemistry 2012 D.O.I. 10/1016/j.jiec.2012.04.010.
12. "Effect of Aluminium Nitride on the Properties of HDPE", **Omer Bin Sohail, Sreekumar P.A., S. K. De, Mamdouh A. Al-Harhi**, J.Nanomaterials, DOI: 10.1155/2012/250364.
13. "Impact of Nanomaterials on Health and Environment-A Review", **Selvin Thomas P, Eid M. Al-Mutairi, S. K. De**, Arabian Journal of Science and Engineering 2012 D.O.I 10.1007/s13369-012-0324-0
14. "Investigation of Artificial Neural Network Methodology for Modeling of a Liquid Solid Circulating Fluidized Bed Riser", **S.A. Razzak, S.M. Rahman, M.M. Hossain, J. Zhu**, Powder Technology, 229 (2012) 71-77.

15. Artificial Neural Network and Neuro-Fuzzy Methodology for Phase Distributions Modeling of a Liquid-Solid Circulating Fluidized Bed Riser, **Razzak, S.A.**, Rahman, S.M., Hossain, M.M., Zhu, J., I&EC Research, 2012, 51(38), pp. 12497-12508
16. "Hydrodynamics Modeling of an LSCFB Riser Using ANFIS Methodology: Effects of Particle Shape and Size", **S.A. Razzak**, Chem. Eng. J., 2012, 195-196, pp.49-61.
17. "Rheology and Enhancement of Extrusion of Linear and Branched Polyethylenes Using Low Amount of Organoclay", **Ayuba A. Adesina, Abdulhadi A. Al-Juhani, NouarTabet, Anwar Ul-Hamid, Ibnelwaleed A. Hussein**, Journal of Applied Polymer Science, 126(2), 713-723, 2012.
18. "Effect of Phenol Functionalized Carbon Nanotube on Mechanical, Dynamic Mechanical, and Thermal Properties of Isotactic Polypropylene Nanocomposites", **Selvin Thomas P., SalihuAdamuGirei, Abdulhadi A. Al-Juhani, KhaledMezghani, S.K. De, Muataz Ali Atieh**, Polymer Engineering and Science, 52, 525-531, 2012.
19. "Effect of -COOH Functionalized Carbon Nano Tubes on Mechanical, Dynamic Mechanical and Thermal Properties of Polypropylene Nanocomposites", **SalihuAdamuGirei, Selvin Thomas, Muataz Ali Atieh, KhaledMezghani, Sadhan Kumar De, Abdulhadi A Al-Juhani**, Journal of Thermoplastics Composite Materials, 25(3), 333-350, 2012.
20. "Study of the Effect of EPDM Structure on the Compatibility of PP/LDPE Blends", **Abdulhadi A. Al-Juhani, M. A. Suleiman**, Arabian Journal for Science and Engineering (AJSE), 37(4), 863-875, 2012.
21. "Rheological Behaviour of Polypropylene Nanocomposites at Low Concentration of Surface Modified Carbon Nanotubes", **Selvin Thomas P, SalihuAdamuGirei, Muataz Ali Atieh, S. K. De, Abdulhadi A. Al-Juhani**, Polymer Engineering and Science, 52(9), 1868-1873, 2012.
22. "Co-Pd/ γ -Al₂O₃ Catalyst for Heavy Oil Upgrading: Desorption Kinetics, Reducibility and Catalytic Activity" **M.M. Hossain**, Canadian Journal of Chemical Engineering, Vol. 90 (2012), 946-955.
23. "Kinetics Modeling of Ethylbenzene Dehydrogenation to Styrene over a MesoporousAlumina Supported Iron Catalyst", **M.M. Hossain., L. Atanda, N. Al-Yassir, S. Al-Khattaf**, Chemical Engineering Journal, 207–208 (2012) 308–321.
24. "Simple Batch Distillation of a Binary Mixture", **Housam Binous, Mamdouh Al-Harathi**, Computer Applications in Engineering Education, DOI 10.1002/cae.21556 - 2012.
25. "Synthesis and Characterization of Microporous, High Surface Area Activated Carbon from Palm Seeds", **Saeed al-Ghamdi, Mamdouh Al-Harathi, and Reyad Shawabkeh** Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, (In press).

26. "Development of Polyelectrolyte Multilayer Thin Film Composite Membrane Fabricated through Spin Assisted Layer by Layer Assembly", **FaridFadhillah, S.M. Javaid Zaidi, Zafarullah Khan, Mazen M. Khaled, Paula T.HammondJ.** Applied Polymer Science, Vol. 126, no. 4, pp1469-1474.(2012),
27. "Novel Sulfonated Poly(ether ether ketone) / PhosphonatedPolysulfone Polymer Blends for Proton Conducting Membranes"**Abu-Thabit, Nedal Y; Ali, Shaikh Asrof; S.M. Javaid Zaidi; Mezghani, Khaled,** Journal of Materials Research, Vol. 27, number 15, pp 1958-1968(Cover page)(2012).
28. "Morphology, Viscosity and Rheology of SulfonatedPoly(ether ether ketone)", **Abdullah S. Sultan, Amir-Al-Ahmed, S.M. Javaid Zaidi,** PEM Fuel Cell Membrane Material, Macromol. Symp. 2012, 313-314, 182–193,(2012)
29. "Application of Titanium Dioxide (TiO₂) Based Photocatalyticnanomaterials in Solar and Hydrogen Energy",**A. Al-Ahmed, M. Bello, S. Hossain, S. M. Javaid Zaidi, S.U. Rahman** A Review, Materials Science Forum, Vol. 712, p 25-47 (2012).
30. "Impact of Orgnoclay and Maleatedpolyethylene on the Rheology and Instabilitites in the Extrusion of High Density of Polythene" **Ayuba A. Adesina, Ibelwaleed A. Hussein, J.** Applied Polymer Science, 123, 866-878, 2012.
31. "Anomolous Heat Capacity of High-Density Polyethylene Melt at High Temperatures", **M.C. Williams,I.A. Hussein, J.** Applied Polymer Science, 124, 466-469, 2012.
32. "Transport Properties of Natural Gas through Nanocomposites at High Temperature and Pressure", **JimohK.Adewole, Lars Jensen, Usamah A. Al-Mubaiyedh, Nicolas von Soms, Ibelwaleed A. Hussein, J.** Polymer Polyethylene Research, Vol. 19, p. 9814, 2012.
33. "Rheology and Enhancement of Extrusion of Linear and Branched Polyethylenes Using Low Amount of Organoclay", **Ayuba A. Adesina, Abdulhadi A. Al-Juhani, NouarTabet, Anwar Ul-Hamid, Ibelwaleed A. Hussein,** Journal of Applied Polymer Science, Vol. 126, 713–723, 2012.
34. "N-Butane Dehydrogenation over Mono and Bimetallic MCM-41 Catalysts Under Oxygen Free Atmosphere" **B.P. Ajayi, B. RabindranJermy, K. E. Ogunronbi, B. A. Abussaud, S. Al-Khattaf,** Catalysis Today (August 2012).

Electrical Engineering

1. "Experiences of a Multidisciplinary Course on Geo-Signal Processing from a DSP Perspective Offered in Electrical Engineering at King Fahd University of Petroleum & Minerals", **W. Mousa,** IEEE Transactions on Education, Vol. 55, Issue 3, pp. 394 – 405, August 2012.
2. "Iterative Design of 1-D Efficient Seismic L_p IIR f - x Digital Filters", **W. Mousa,** IET Signal Processing, Vol. 6, Issue 6, pp.541 – 545, August 2012.

3. "New Single-Parameter Models for Nonlinear Electronic Systems and its use in Predicting Intermodulation Performance", **M.T. Abuelma'atti**, Analog Integrated Circuits and Signal Processing, Vol. 72, 2012, pp. 243-250.
4. "Harmonic and Intermodulation Performance of Moderate Inversion MOSFET Transconductors", **M.T. Abuelma'atti**, International Journal of Electronics and Communications (AEU), Vol. 66, 2012, pp. 892-896.
5. "Design and Implementation of a Real Time Wideband Channel Simulator", **M. Akram** and **A.U.H. Sheikh**, EURASIP Journal of Wireless Communications and Networks, December 2012.
6. "On the Statistical Properties of Nakagami Hoyt Vehicle to Vehicle Fading Channel under Non-Isotropic Scattering", **M. Akram** and **A.U.H. Sheikh**, International Journal of Antennas and Propagation, Hindawi Publications, September 2012.
7. "A low Voltage and Low Power Analog Computational Circuit", **M.A. Absi**, **A. Hussain**, and **M.T. Abuelma'atti**, Journal of circuits, system and signal processing, published online, 2012.
8. "Wireless Networking for Monitoring and Control System of a Steel Plant", **A. U. H. Sheikh**, and **Y. M. Dawood**, Wireless Personal Communications (WPC), Volume 66, Issue 4 (2102), pp. 771-788, Springer, 2012.
9. "A Comparative Study of Spectrum Awareness Techniques for Cognitive Radio Oriented Wireless Networks", **U. Raza**, and **A. Sheikh**, Physical Communications, Elsevier Publishers, 2012, published online, August 2012.
10. "An 8-Element Printed V-Shaped Circular Antenna Array for Power Based Vehicular Localization", **M.S. Sharawi**, **F. Sultan** and **D.N. Aloï**, IEEE Antennas and Wireless Propagation Letters, Vol. 11, pp. 1133-1136, 2012.
11. "A Comparative Performance Analysis of Two Printed Circular Antenna Arrays for Power Based Vehicle Localization Application", **M. S. Sharawi**, **F. Sultan** and **D.N. Aloï**, International Journal on Antennas and Propagation, Vol. 2012, pp. 1-8, 2012.
12. "A Dual-Element Dual-Band MIMO Antenna System with Enhanced Isolation for Mobile Terminals", **M. S. Sharawi**, **A.B. Numan**, **M.U. Khan** and **D. N. Aloï**, IEEE Antennas and Wireless Propagation Letters, Vol. 11, pp. 1006-1009, 2012.
13. "A Variable Parameter Normalized Mixed-Norm (VPNMN) Adaptive Algorithm", **A. Zerguine**, EURASIP Journal on Advances in Signal Processing 2012, 2012:55 doi: 10.1186/1687-6180-2012-55.
14. "Evaluation and Enhancement of Dynamic Performance of a Microgrid Including PV and Wind Generation", **A. H. M. A. Rahim** and **M. T. Hussain**, Mathematical and Computer Modelling of Dynamical Systems, pp.1-19, 2012.
15. "Modeling Global Solar Radiation using Particle Swarm Optimization (PSO)", **M. Mohandes**, Solar Energy, Vol. 86, Issue 11, pp. 3137-3145, November 2012.

16. "Splitting Global Solar Radiation into Diffuse and Direct Normal Fractions Using Artificial Neural Networks", **S. Rehman** and **M. Mohandes**, Energy Sources, Part A: Recovery, Utilization and Environmental Effects, Volume 34, Issue 14, pp. 1326-1336, 2012.
17. "On the Practical Application of Compressive Sensing to UWB Channels", **A. Muqaibel** and **M. Tamim**, IET Communications 2012, Doi: 10.1049/iet-com.2012.0179.

Mechanical Engineering

1. "A Review of Hybrid Solar-Fossil Fuel Power Generation Systems and Performance Metrics", **E. J. Sheu, A. Mitsos, A. A. Eter, E. M. A. Mokheimer, M. A. Habib and A. Al-Qutub**, ASME Journal of Solar Engineering, Volume 134, Issue 4, November 2012, 17 pages.
2. "Buoyancy Effects on Entropy Generation in the Entrance Region of Isothermal/Adiabatic Vertical Channel", **E. M. A. Mokheimer**, AJSE, September 2012, Volume 37, Issue 6, pp 1681-1700.
3. "On the Need for Energy Labeling for Villa Air Conditioners and its Economical and Environmental impact in Saudi Arabia", **E. M. A. Mokheimer**, Energy & Environment, 23(1), (2012), P. 51.
4. "Analysis of Dart Impact Resistance of Low Density Polyethylene and Linear Low Density Polyethylene Blown Films via an Improved Instrumented Impact Test Method", **Mezghani K., Furquan S.**, Journal of Plastic Film and Sheeting, 28(4), 298–313, 2012.
5. "Effect of Blend Ratio of H-LLDPE and LDPE on the Tear Properties of Blown Films", **Mezghani K.; M.; Furquan S.; Tabatabaei S.; Ajji A** International Polymer Processing, 3, 392–398, 2012.
6. "Novel Sulfonated Poly(ether ether ketone) / Phosphonated Polysulfone Polymer Blends for Proton Conducting Membranes" , **Abu-Thabit Nedal.; Ali S. A.; Zaidi S. M. J.; Mezghani K.**, Journal of Materials Research, 27 (15), 1958-1968, 2012.
7. " Dynamic Response of an Electrostatically Actuated Microbeam to Drop-Table Test", **Ouakad, H.M., Alsaleem, F., and Younis, M.I.**, Institute of Physics (IOP), Journal of Micromechanics and Microengineering, Vol. 22, Issue 9, 2012, pp. 095003.
8. "Onset of Convection and Advection in the CO2 Sequestration Problem Using the Lattice Boltzmann Method", **Ouakad, H.M., and Nasrabadi, H.**, International Journal of Advanced Science and Engineering Technology, Vol. 2, Issue 1, 2012, pp. 68-75.
9. "Dynamic Response of Slacked Single-Walled Carbon Nanotube Resonators", **Ouakad, H.M., and Younis, M.I.**, **Springer**, Nonlinear Dynamics, Vol. 67, Issue 2, 2012, pp. 1419-1436.
10. "Ultrathin Si/C Graded Layer to Improve Tribological Properties of Co Magnetic Films," **E. Rismani, M. Abdul Samad, S.K. Sinha, R. Yeo, H. Yang and C.S. Bhatia**, Applied Physics Letters, Vol.101, Issue 19, November 2012, pp 191601: 1 – 5.

11. "Selective Molecular Transport through Intrinsic Defects in a Single Layer of CV Graphene", **Sean C. O'Hern, Cameron A. Stewart, Michael S. H. Boutilier, Juan-Carlos Idrobo, Sreekar Bhaviripudi, Sarit K. Das, Jing Kong, Tahar Laoui, Muataz Atieh, and Rohit Karnik**, *ACS Nano*, Published online October 2nd, 2012 (IF = 11.42)
12. "Bubble-Induced Damping in Displacement-Driven Microfluidic Flows", **Jongho Lee, Faizur Rahman, Tahar Laoui, Rohit Karnik**, *Physical Review E* 86, published online August 2012, 9 pages.
13. "Spark Plasma Sintering of Metals and Metal Matrix Nanocomposites: A Review", **Nouari Saheb, Zafar Iqbal, Abdullah Khalil, Abbas Saeed Hakeem, Nasser Al-Aqeeli, Tahar Laoui, Amro Al Qutub, René Kirchner**, *Journal of Nanomaterials*, Vol. 2012 (2012), Article ID 983470, 13 pages.
14. "Synthesis, Characterization and Mechanical Properties of SiC-reinforced Al-based Nanocomposites Processed by MA and SPS", **N. Al-Aqeeli, K. Abdullahi, A.S. Hakeem, C. Suryanarayana, T. Laoui, S. Nouari**, *Powder Metallurgy*, available online July 29, 2012.
15. "Wear Behavior of Spark Plasma Sintered Al₂₁₂₄ Aluminum Alloy Containing Carbon Nanotubes" **A.M. Al-Qutub, A. Khalil, N. Saheb, Al-Aqeeli, T. Laoui**, *Sci. Adv. Mater.* 4, (2012), pp. 1166-1173.
16. "B. Effect of Drag Reducing Polymers on Water Holdup in an Oil-Water Horizontal Flow", **Al-Yaari, M., Al-Sarkhi, A. , Abu-Sharkh**, *International Journal of Multiphase Flow*, (Sept. 2012), 24, 29-33.
17. "Performance Assessment of a Novel System using Parabolic Trough Solar Collectors for Combined Cooling, Heating, and Power Production", **Al-Sulaiman, F.A., Hamdullahpur, F., Dincer, I.**, *Renewable Energy*, Volume 48, December 2012, pp. 161-172.
18. "Energy and Exergy Analyses of a Biomass Trigeneration System using an Organic Rankine Cycle Original Research Article" **Al-Sulaiman, F.A., Hamdullahpur, F., Dincer, I.**, *Energy*, Volume 45, Issue 1, September 2012, pp 975-985.
19. "Investigation on Wall Mass Transfer Characteristics Downstream of an Orifice", **M. Al-Gammal, Wael H. Ahmed, and C.Y. Ching**, *Nuclear Engineering and Design*, Vol. 242, pp. 353-360, 2012.
20. "Dual-injection Airlift Pumps: an Enhanced Performance", **Wael H. Ahmed, and Hassan M. Badr**, *Particulate Science and Technology*, Vol. 30, pp. 497–516, 2012.
21. "Flow and Mass Transfer Downstream of an Orifice under Flow Accelerated Corrosion Conditions", **Wael H. Ahmed, Mufatiu M. Bello, A. Al-Sarkhi, and M. El Nakla**, *Nuclear Engineering and Design*, Vol. 252, pp. 52-67, 2012.
22. "An Innovative Vibration Sensor for Flow Accelerated Corrosion Measurement", **Wael H. Ahmed, Atef M. Mohany, and Yehia A. Khulief**, *Recent Patent on Corrosion Science*, Vol. 2, pp. 61-65, 2012.

23. "Heat and Mass Transfer from Annular Fins of Different Cross-sectional Area. Part II. Optimal Dimensions of Fins", **A. Moinuddin, M.H. Sharqawy, S.M. Zubair**, *International Journal of Refrigeration*, 35 (2012) 365-376.
24. "Heat and Mass Transfer from Annular Fins of Different Cross-sectional Area. Part I. Temperature Distribution and Fin Efficiency", **M.H. Sharqawy, A. Moinuddin, S.M. Zubair**, *International Journal of Refrigeration*, 35 (2012) 377-385.
25. "Bubble Columns for Condensation at High Concentrations of Non-condensable Gas: Heat Transfer Model and Experiments", **G.P. Narayan, M.H. Sharqawy, S. Lam, S.K. Das, J.H. Lienhard V**, *AIChE Journal*, (in press) (2012).
26. "A Review of Hybrid Desalination Systems for Production of Power and Water: Analyses, Methods, and Considerations", **Gina Zak, Amin Ghousey, M.H. Sharqawy, and A. Mitsos**, *Desalination and Water Treatment*, (in press), 2012.

Petroleum Engineering Department

1. Characterization of Filter Cake Generated by Water-Based Drilling Fluid," **Mahmoud, M.A., Elkatatny, S.M., and Nasr-El-Din, H.A.**, *SPE Drilling and Completion Journal*, Vol. 27, No. 2 (2012) 282-293, Society of Petroleum Engineering.
2. "Propagation and Retention of Viscoelastic Surfactants Following Matrix-Acidizing Treatments in Carbonate Cores," **Yu, M., Mahmoud, M.A., and Nasr-El-Din, H.A.**, *SPE Journal*, Vol. 16, No. 4 (2011) 993-1001, Society of Petroleum Engineering.
3. "Optimum Injection Rate of A New Chelate That Can Be Used to Stimulate Carbonate Reservoirs," **Mahmoud, M.A., and Nasr-El-Din, H.A.**, *SPE Journal*, Vol. 16, No. 4 (2011) 968-980, Society of Petroleum Engineering.
4. "Evaluation of a New Environmentally Friendly Chelating Agent for High Temperature Applications," **Mahmoud, M.A., and Nasr-El-Din, H.A.**, *SPE Journal*, Vol. 16, No. 3 (2011) 559-574, Society of Petroleum Engineering.

Aerospace Engineering Department

1. "Application of Back Propagation Neural Network Algorithms on Modeling Failure of B-737 Bleed Air System Valves in Desert Conditions," **Abdelrahman, W.G., Al-Garni, A.Z., and Al-Wadie, W.**, *Applied Mechanics and Materials*, Vol. 225, 2012, Pages: 505-510.
2. "Aircraft Family Concept for High Performance Transport Aircrafts", **Prasetyo Edi**. *International Journal of Mechanics* Volume 6, Issue 3, 2012. (ISSN: 1998-4448). Pages: 195-202.

College of Sciences

Chemistry Department

1. "Synthesis and Structural Characterization of Cadmium(II) Complexes of Tetramethylthiourea (Tmtu); X-ray structure of $[\text{Cd}(\text{Tmtu})_2\text{Cl}_2]$ ", **R. Mahmood, S. Sadaf, A. A. Isab, M. Akkurt, S. Sharif, I. U. Khan, S. Ahmad**, Russ. J. Coord. Chem., 38, (2012) pp 456-460.
2. "Mercury Cyanide Complexes with Alkyldiamines: Solid State, Solution NMR and Antimicrobial Activity Studies", **M.N. Shaikh, B.A. Al-Maythalony, M. Fettouhi, M.I.M. Wazeer and A.A. Isab and S. Ahmed**, J. Coord. Chem., 65, (2012) pp 2074-2086.
3. "Heptadecyl-tailed Mono- and Bis-imidazolines: A Study of the Newly Synthesized Compounds on the Inhibition of Mild Steel Corrosion in a Carbon Dioxide-saturated Saline Medium", **Mohammad W. S. Jawich, G. A. Oweimreen and Shaikh A. Ali**, Corrosion Science 65 (2012) 104-112.
4. "The Depletion of Dibenzyl Disulfide from a Mineral Transformer Insulating Oil", G. A. Oweimreen*, **A. M. Y. Jaber, A. M. Abulkibash and N. A. Muhanna** IEEE Trans. Dielectr. Electr. Insul., Vol.19, Issue 6, pp.1962-1970, Dec. 2012.
5. "A DFT Analysis of the Molecular Structures and Vibrational Spectra of 4,4' Sulfonyldiphenol.", **Förner, W. and Badawi, H.M.**, Journal of Theoretical and Computational Chemistry 11, 821-832 (2012).
6. "Analysis of the Infrared and Raman Spectra of the Symmetrically Substituted 1, 3-Diphenyl-urea and 1,3-Diphenylacetone (Dibenzyl Ketone).", **Badawi, H.M and Förner, W.**, Spectrochimica Acta A , A95, 435-441 (2012).
7. "A Novel Class of Bisquaternary Ammonium Salts in Inhibition of Mild Steel Corrosion in HCl and H_2SO_4 ", **Ali, S.A., El-Sharif A.M.Z.** Corrosion Engineering Science Technology, 47 (4), 2012, pp 265-271.
8. "Novel Sulfonated Poly(ether ether ketone)/Phosphonated Polysulfone Polymer Blends for Proton Conducting Membranes", **Abu-Thabit, N.Y., Ali, S.A., Zaidi, S.M.J.; Mezghani, K.**, Journal of Materials Research, 27(15), 2012, pp. 1958-1968.
9. "Diallyl-1,12-Diaminododecane-based Cyclopolymers and Their Use as Inhibitors for Mild Steel Corrosion", **Ali, S.A., Saeed M.T., El-Sharif, A.M.Z.** Polymer Engineering and Science, 52 (12), 2012, pp. 2588–2596.
10. "pH-Responsive polyphosphonates using Butler's Cyclopolymerization", **Al-Hamouz, O.C.S., Ali, S. A.** Journal Polymer Science, Part A Polymer chemistry, 50(17), 2012, 3580-3591.
11. "Cyclopolymers from *N,N*-Diallyl-*N*-propargyl-(12- *N'*-formylamino)-1-Dodecylammonium Chloride and Their Use as Inhibitors for Mild Steel Corrosion", **Ali, S.A. Zaidi, S.M.J. El-Sharif, A.M.Z., Al-Taq, A.A.**, Polymer Bulletin, 69(4), 2012, pp. 491-507.

12. "Phase Diagrams for Urethanized Polyvinyl Alcohol and a Series of Hydrophobically Modified pH-responsive Diallylammonioethanoa-Tecyclopolymers", **Ali, S.A.**, Korean Journal of Chemical Engineering, 29(10), 2012, pp.1426-1437.
13. "Comparative Solution Properties of Cyclocopolymers Having Cationic, Anionic, Zwitterionic and Zwitterionic/Anionic Backbones of Similar Degree of Polymerization", **Ali, S.A., Al-Hamouz, O.C.S.**, Polymer 53, 2012, 3368-3377.
14. "Removal of Heavy Metal Ions using a Novel Cross-linked Polyphosphonate", **Al Hamouz, O.C. S., Ali, S.A.**, Separation and Purification Technology , 98, 2012, pp. 94–101.
15. "Heptadecyl-tailed Mono- and Bis-imidazolines: A Study of the Newly Synthesized Compounds on the Inhibition of Mild Steel Corrosion in a Carbon Dioxide-saturated Saline Medium", **Jawich, M.W.S., Oweimreen, G.A., Ali, S.A.**, Corrosion Science 65, 2012, pp. 104–112.
16. "Novel Cross-linked Polyphosphonate for the Removal of Pb²⁺ and Cu²⁺ from Aqueous Solution", **Al Hamouz, O.C. S., Ali, S.A.**, Industrial Engineering. Chemical Research, 51(43), 2012, pp 14178–14187.
17. "Recycling of Poly(ethylene terephthalate) Waste Through Methanolic Pyrolysis in a Microwave Reactor" **Siddiqui, M. N.; Redhwi, H. H.; Achilias, D. S.**, Journal of Analytical and Applied Pyrolysis, November 2012, Vol. 98, 214–220.

Earth Sciences Department

1. "Seismic Tomography from the Old to the New Millennium", **Vesnaver, A.**, Arabian Journal for Science and Engineering, 2012, DOI:10.1007/s13369-012-0380-5.10.
2. "Borehole Receiver Orientation using a 3D Velocity Model", **Menanni, G., Vesnaver, A.**, and Jervis, M., Geophysical Prospecting, 2012, DOI: 10.1111/j.1365-2478.2012.0116.x.21.
3. "Enhancement of First Arrivals using the Tau-p Transform on Energy-ratio Seismic Shot Records", **Mousa, W.A. and Al-Shuhail, A.A.**, Geophysics, Vol. 77, Issue 3, 2012, pp. V101-V111.
4. "Imaging Subtle Faults using Azimuthal Coherence Attribute: A Case Study from Central Saudi Arabia", **Alqahtani, F. and Al-Shuhail, A.A.**, Geoarabia, Vol. 17, Issue 4, 2012, pp. 43-54.
5. "Calibration of the Benthic Foraminiferal Oxygen Index in the Marmara Sea", **Kaminski, M.A.**, Geological Quarterly, Vol. 56, Issue 4, 2012.
6. "Functional Morphology and Paleoecology of the Agglutinated Foraminiferal Genus *Colominella* Popescu, 1998 in the Mediterranean Pliocene (Liguria, Italy)", **Mancin, N., Basso, E., Pirini, C., and Kaminski, M.A.**, Geological Carpathica, Vol. 63, Issue 6, 2012, pp. 489-500.

7. "Economic Potential of Brines of Sabkha Jayb Uwayyid, Easter Saudi Arabia", **Al Shaibani, A.M.**, Arab J Geosci., 2012, DOI 10.1007/s12517-012-0521-x.
8. "High Resolution Facies and Porosity Models of Upper Jurassic Arab-D Carbonate Reservoir Using an Outcrop Analogue, Central Saudi Arabia", **Eltom, H., Makkawi, M., Abdullatif, O., and Al-Ramadan, K.**, Arabian J. of Geosciences, ISSN 1866-7511 (published online on Oct. 23, 2012).
9. "Rapid Late Pleistocene/Holocene Uplift and Coastal Evolution of the Southern Arabian (Persian) Gulf", **Wood, W.W., Bailey, R.M., Hampton, B.A., Kraemer, T.F., Lu, Z., Clark, D.W., James, R.H.R., and Ramadan K.**, Quaternary Research, Vol. 77, Issue 2, 2012, pp. 215-220.
10. "Macrobenthic Community Structure in the Northern Saudi Waters of the Gulf, 14 Years After the 1991 Oil Spill", **Joydas, T.V., Qurban, M.A., Al-Suwailem, A., Krishnakumar, P.K., Nazeer, Z., and Cali, N.A.**, Marine Pollution Bulletin, Vol. 64, Issue 2, 2012, pp. 325-335.
11. "Effect of Blending Ratio on the Formation of Bromoform and Bromate in Blended Water Samples Disinfected with Chlorine or Ozone", **Tawabini, B.**, Int. J. Environmental Engineering, in press.
12. "Reduction of Escherichia Coli Bacteria from Contaminated Water by Combining Hydrogen Peroxide, Ozone and Ultraviolet light", **Tawabini, B., Khalil, A. and Abussaud, B.**, Water Science and Technology, 2012, in press.

Department of Mathematics & Statistics

1. "Generalized Invex Sets and Preinvex Functions on Riemannian Manifolds," Agarwal, R.P., **Ahmad, I., Iqbal, A., and Ali, S.**, Taiwanese Journal of Mathematics, 16, no.5, (2012), 1719-1732.
2. **Agarwal, R.P., Ahmad, I., Iqbal, A., and Ali, A.**, "Geodesic G-invex Sets and Semistrictly Geodesic η -priinvex Functions," Optimization, 61, no.9, (2012), 1169-1174.
3. "On Geodesic E-Convex Sets, Geodesic E-Convex Functions and E-Epigraphs," **Iqbal, A., S. Ali, and Ahmad, I.**, Journal of Optimization Theory and Applications, 155, no.1, (2012), 239-251.
4. "Optimality and Duality for Nondifferentiable Multiobjective Programming Problems Involving Generalized (F, α, ρ, d) Type I Functions," Agarwal, R. P, **Ahmad, I.**, and **Al-Homidan, S.**, Journal of Nonlinear and Convex Analysis, 13, no 4, (2012), 733-744, 2012.
5. "Mann Iteration Process for Asymptotic Pointwise Nonexpansive Mappings in Metric Spaces ," Ibn Dehaish, B.A., **Khamisi, M.A. and Khan, A.R.**, Journal of Mathematical Analysis and Applications, no.397, (2013), 861-868.
6. "Fixed Point Results for a Generalized Nonexpansive Map in Uniformly Convex Metric Spaces" **Fukharuddin, H., Khan, A.R. and Akhtar, Z.**, "Nonlinear Analysis: Theory, Methods & Applications, no.75, (2012), 4747-4760.

7. "Common Fixed Point of Multivalued Mappings in Ordered Generalized Metric Space," **Mujahid, A., Khan, A.R. and Nazir, T.,** Filomat, 26, (2012),1045-1053.
8. "A General Decay Result for a Viscoelastic Equation in the Presence of Past and Finite History Memories", **Guesmia, A., Messaoudi, S.,** Nonlinear Analysis, no.13, (2012), 476-485.
9. "Uniform Decay in Mildly Damped Timoshenko Systems with Non-equal Wave Speed Propagation", **Guesmia, A., Messaoudi, S., Wehbe, A.,** Dynamic Systems and Applications, 21 (2012), 133-146.
10. "On the Stabilization for a Linear Timoshenko System with Infinite History and Applications to the Coupled Timoshenko-heat Systems", **Guesmia, A., Messaoudi, S., Soufyane, A.,** Elec. J. Diff. Equa., no.2012, (2012), 1-45.
11. "Nonlinear Power Laws in Stretched Flame Velocities in Finite Thickness Flames: A Numerical Study Using Realistic Chemistry", **Malik, N. A.,** Combustion Science and Technology, vol.184. No.10-11, (2012), 1787-1798.
12. "The Response of Transient Inhomogeneous Flames to Pressure Fluctuations and Stretch: Planar and Outwardly Propagating Methane/Air Flames", **Malik, N. A., and Lindstedt, R.P.,** Combustion Science and Technology, vol.184, no.10-11, (2012), 1799-1817.
13. "Energy Decay in Thermoelasticity Type III with Viscoelastic Damping and Delay term", **Apalara, T., Messaoudi, S.A., and Mustafa, M.I.,** Electronic Journal of Differential Equations, 2012, (2012), no.128, 1–15.
14. "On the Stabilization for a Linear Timoshenko System with Infinite History and Applications to the Coupled Timoshenko-heat Systems", **Guesmia, A., Messaoudi, Abdelaziz Soufyane, A.,** Electronic Journal of Differential Equations, 2012, (2012), no.193, 1–45.
15. "Harmonic Morphisms Projecting Harmonic Functions to Harmonic Functions," **Mustafa, M.T.,** Abstract and applied analysis, (2012), Article Number: 315757.
16. "Asymptotic Behavior of Second Sound Thermoelasticity with Internal Time-Varying Delay", **Mustafa M. I.,** Zeitschrift für Angewandte Mathematik und Physik, DOI: 10.1007/s00033-012-0268-y.
17. "Energy Decay in Thermoelasticity Type III with Viscoelastic Damping and Delay term", **Apalara T. A., Messaoudi S. A., and Mustafa M. I.,** Electronic Journal of Differential Equations, 2012, no.128, (2012), 1-15.
18. "Asymptotic Behavior of Second Sound Thermoelasticity with Internal Time-Varying Delay", **Mustafa M. I.,** Zeitschrift für Angewandte Mathematik und Physik, DOI: 10.1007/s00033-012-0268-y.
19. "Existence and Uniqueness for a Problem Involving Hilfer Fractional Derivative", **Furati, K., Kassim, M., and Tatar, N.-e.,** Computers Math. Appl., no. 64 (2012), 1616-1626.

20. "Oscillating Kernels and Arbitrary Decays in Viscoelasticity", **Tatar, N.-e.**, Math. Nachr., no. 285 (2012), 1130-1143.
21. "On the Nonexistence of Blowing-up Solutions to a Fractional Functional-Differential Equation", Kirane, M., Medved, M., and **Tatar, N.-e.**, Georgian Math. J., 19, no.1 (2012), 127-144.
22. "A New Class of Kernels Leading to an Arbitrary Decay in Viscoelasticity, **Tatar, N.-e.**, Mediterr. J. Math., (2012), DOI 10.1007/s00009-012-0177-5.
23. "Viscoelastic Timoshenko Beams with Occasionally Constant Relaxation Functions", **Tatar, N.-e.**, Appl. Math. Optim., no.66, (2012), 123-145.
24. "On a Differential Equation Involving Hilfer-Hadamard Fractional Derivative", **Kassim M., K. Furati, K., and Tatar, N.-e.**, Abstr. Appl. Anal., (2012), Article ID 391062, 17 pages.
25. "Well-posedness for an Abstract Semilinear Integro-differential Fractional Problem", **Tatar, N.-e.**, Mediterr. J. Math., no.9, (2012), 199-210.
26. "Asymptotic Behavior for a Non-dissipative and Non-linear System of Kirchhoff Viscoelastic Type", **Tatar, N.-e.**, Journal of Applied Mathematics, vol. (2012), Article ID 936140, 17 pages.
27. "Existence of Mild Solutions for a Neutral Fractional Equation with Fractional Nonlocal Conditions", **Tatar, N.-e.**, Electron. J. Diff. Eqs, no.153, (2012), 1-12.
28. "A New Implicit Algorithm of Asymptotically Quasi-nonexpansive Maps in Uniformly Convex Banach Spaces," **Fukharuddin, H., Khan, A.R. and Khan, M.A.A.**, IAENG International Journal of Applied Mathematics, vol. 42, (2012), 171-175.

Physics Department

1. "Effect of Crystallinity on the Toxicity of ZnO Nanoparticles to Cancer Cells", A. Selim, **A. Al-Sunaidi** and **N. Tabet**, Materials Science and Engineering C 32 (2012) 2356–2360.
2. "Ambipolar Operation of Hybrid SiC-carbon Nanotube Based Thin Film Transistors for Logic Circuits Applications" **B. Aissa, M. Nedil, A. H. Esam, N. Tabet, D. Therriault, and F. Rosei**, Applied Physics Letters, 101, 043121 (2012).
3. "Electromagnetic Energy Absorption Potential and Microwave Heating Capacity of SiC Thin Films in the 1–16 GHz Frequency Range" **B. Aissa, N. Tabet, M. Nedil, D. Therriault, F. Rosei, R. Nechachee**, Applied Surface Science, 258 (2012) 5482– 5485.
4. "Structural Origins of Intrinsic Stress in Amorphous Silicon Thin Films". E. **Johlin, N.Tabet, S. Castro-Galnares, A. Abdallah, M. I. Bertoni, T. Asafa, J. C. Grossman, S. Said and T. Buonassisi**, Phys.Rev. B, 85, (2012) 075202.
5. "Optical Properties of SnO₂ Nanostructures Prepared via One-step Thermal Decomposition of Tin (II) Chloride Dihydrate", **R. Al-Gaashani, S. Radiman, N. Tabet and A. R. Daud**, Materials Science and Engineering B, 177 (2012) 462– 470.

6. "Synthesis, Optical Properties and Possible Growth Mechanism of $\text{Mg}(\text{OH})_2$ and MgO Nanostructures Obtained via Novel Microwave-assisted Methods " **R. Al-Gaashani, S. Radiman, N. Tabet and A. Razak Daud**, Journal of Alloys and Compounds, 521, (2012), 71–76.
7. "Rheology and Enhancement of Extrusion of Linear and Branched Polyethylenes Using Low Amount of Organoclay" **Ayuba A. Adesina, A. A. Al-Juhani, N. Tabet, A. Ul-Hamid, I. A. Hussein**, Journal of Applied Polymer Science, 126 (2) , 2012, pp. 713-723.
8. "Formation of Surface Nano-structures by Plasma Expansion Induced by Highly Charged Ions" **W.M. Moslem, A.S. El-Said**, Physics of Plasmas 19, 2012, pp 123510.
9. "Phase Diagram for Nanostructuring CaF_2 Surfaces by Slow Highly Charged Ions" **A.S. El-Said, R.A. Wilhelm, R. Heller, and S. Facsko, C. Lemell, G. Wachter, J. Burgduorfer, R. Ritter and F. Aumay**, Physical Review Letters, 109, 2012, pp.117602.
10. "Nanostructures Created in SiO_2 Surface: A Comparison Between the Impingement by Slow Highly Charged Ions and by Swift Heavy Ions", **A.S. El-Said**, Nuclear Instruments and Methods B, 282, 2012, pp.63.
11. "Effect of Ambient Conditions on Laser-Induced Breakdown Spectroscopy Performance", **M. A. Gondal , A. Khalil**, Laser Physics, Vol. 22, No. 12, pp. 1771–1779 (2012).
12. "High Sensitive Detection of NO using Laser Induced Photo Acoustic Spectroscopy at 213 nm", **M. A. Gondal, A. Khalil, N.Suleman** Applied Optics, 51, 5724-5734 (2012).
13. "Detection of Toxic Metals (Lead and Chromium) in the Talcum Powder using Laser Induced Breakdown Spectroscopy", **M. A. Gondal, M.A. Dastageer, Naqvi A. A., A.A. Isab, and Y. W. Maganda**, Applied Optics, 51, 7395-7401(2012).
14. "Enhanced Photoactivity on $\text{Ag}/\text{Ag}_3\text{PO}_4$ Composites by Plasmonic Effect", **M.A Gondal, X. Chang , W. E.I. Sha ,Z. H. Yamani , Q. Zhou, J. Colloid. Interface and Science**, 377, 291-298 (2012).
15. "Synthesis and Photocatalytic Activity of Graphene/ BiOBr Composites Under Visible Light", **J. Zhang, X.chang, M. A. Gondal , W. Wei , T. Zhang, Q. Xu , K Shen**, Appl. Surface Science, Vol 258, Iss 20, 7795-8322 (2012).
16. "Laser Photodeposition of Ambient and High-pressure Magnetite Nanograins in a $\text{Fe}/\text{C}/\text{O}$ Composite: The High-pressure Metal Oxide Polymorph Surviving Ambient Conditions", **J. Pola, M. A. Gondal, M. Urbanova, D. Pokorna, H. M.Masoudi, S. Bakardjieva, Z. Bastl, J. Šubrt, M. N. Siddiqui**, J. Photochem. & Photobiol. A, Vol 243, 33-40 (2012).
17. "Photosensitized Degradation of Rhodamine B over BiOCl and BiOBr under Visible Light Irradiation", **X. Chang, M. A. Gondal, A. A. Al-Saadi, H. Shen , M.A. Ali ,Qin Zhou , J. Zhang , Mengping Du , Y. Liu 1, G.Ji**, J. Colloid Interface and Science, 377, 290-298 (2012).

18. "Morphology and Antifungal Effect of NanoZnO and NanoPd Doped NanoZnO Against Aspergillus and Candida", **M. A. Gondal, M.A. Randhawa, A. J. Alzahrani, M. N. Siddiqui**, J. Env. Science and Health, Volume 47, Issue 10, 1413-1418, 2012.
19. "Synthesis of Nickel Oxide Nanoparticles Using Pulsed Laser Ablation in Liquids and their Optical Characterization", **M. A. Gondal, T.A. Saleh, Q. A. Drmosh**, Applied Surface Science, Vol 258, 6982-6986 2012.
20. "Optical Properties of Bismuth Oxide Nanoparticles Synthesized by Pulsed Laser Ablation Technique, Nanomaterials by Laser Processing", **T.A. Saleh, M.A. Gondal, Q.A. Drmosh**, Science of Advanced Materials, Vol. 4, 507-510, 2012.
21. "Fabrication and Characterization of Al Nanomechanical Resonators for Coupling to Nanoelectronic Devices", **K. Harrabi, Y. Pashkin, O. Astafiev, S. Kafanov, T. F. Li, J. S. Tsai**: Appl. Phys. A, 108, 7 (2012).
22. "Driven Dynamics and Rotary Echo of a Qubit Tunably Coupled to a Harmonic Oscillator", **S. Gustavsson, J. Bylander, F. Yan, P. Forn-Diaz, V. Bolkhovsky, D. Braje, G. Fitch, K. Harrabi, D. Lennon, J. Miloshi, P. Murphy, R. Slattery, S. Spector, B. Turek, T. Weir, P.B. Welander, F. Yoshihara, D.G. Cory, Y. Nakamura, T.P. Orlando, and W.D. Oliver**, Phys. Rev. Lett., 108, 170503 (2012).
23. "Spectroscopy of Low-frequency Noise and its Temperature Dependence in a Superconducting Qubit", **Fei Yan, Jonas Bylander, Simon Gustavsson, Fumiki Yoshihara, Khalil Harrabi, David G. Cory, Terry P. Orlando, Yasunobu Nakamura, Jaw-Shen Tsai, and William D. Oliver**, Phy. Rev. B, 85, 174521 (2012).
24. "Compositional Dependence of DC Electrical Conductivity of SrO-vanadate Glasses", **G Khattak, A. Mekki and NM Siddiqui**, Solid State Ionics, 211 (2012) pp.5-11.
25. "Scaling Behavior in Al-Doped MgB₂ Superconductor", **A. F. Salem, Kh. A. Ziq, A. A. Bahgat**, J. Superconductivity and Novel Magnetism, Vol. 25 No. 8 (2012).
26. "Mechanical and Magnetic Properties of ZnO/Fe₂O₃ Ceramic Varistors", **A. Sedky, Kh.A. Ziq**, Superlattices and Microstructures, 52 (2012) 99–106.
27. "Magnetic Properties of FeAs Single Crystal", **Kh. A. Ziq and A. F. Salem**, Journal of superconductivity and Novel magnetism. 012-1840-4 (Dec, 2012).
28. "Ac Susceptibility of Doped MgB₂ Superconductors", **A. Fathi, Kh. A. Ziq**, Journal of superconductivity and Novel magnetism. DOI 10.1007/s10948-012-1879-4 (Dec, 2012).
29. "Neutron Scattering from ²⁸Si and ³²S from 8.0 to 18.9 MeV, Dispersive Optical Model Analyses, and Ground State Correlation", **Al-Ohali, M. A.; J. P. Delaroche, C. R. Howell, M. M. Nagadi, A. A. Naqvi, W. Tornow, R. I. Walter and G. J. Weisel**. Physical Review C86, 034603 (2012).
30. "Prompt Gamma Tests LaBr₃:Ce and BGO Detectors for Detection of Hydrogen, Carbon Oxygen in Bulk Samples, **Naqvi A. A., Fares A. Al-Matouq, F. Z. Khiri, A.A. Isab. Khateeb-ur-Rehman, M. Raashid**, Nuclear Inst. and Methods in Physics Research, A 684 (2012) 82-87.

31. "Prompt Gamma-Ray Analysis of Chlorine in Superpozz Cement Concrete", **Naqvi, A.A., Zameer Kalakada, Faris A. Al-Matouq, M. Maslehuddin and O.S.B. Al-Amoudi.** Nuclear Inst. and Methods in Physics Research, A, Vol. 693 (2012), pp. 67-73.
32. "Chlorine Detection in Fly Ash Concrete using a Portable Neutron Generator", **Naqvi, A.A., ZameerKalakada, Faris A. Al-Matouq, M. Maslehuddin and O.S.B. Al-Amoudi.** Applied Radiation and Isotopes, Vol.70(2012) pp.1671-4.
33. "Response Tests of a $\text{LaCl}_3\text{:Ce}$ Scintillation Detector With Low Energy Prompt Gamma Rays From Boron and Cadmium", **Naqvi A. A., M.S. Al-Anezi, ZameerKalakada, Faris A. Al Matouq, M. Maslehuddin , M. A. Gondal, A. A. Isab, Khateeb-ur-Rehman and M. Dastageer** Applied Radiation and Isotopes, Vol.70 (2012) pp. 882-887.
34. "Low Energy Prompt Gamma-Ray Tests of a Large Volume BGO Detector", **Naqvi A.A., ZameerKalakada, M.S. Al-Anezi, M. Raashid, Khateeb-ur-Rehman, M. Maslehuddin and M. A. Garwan,** Applied Radiation and Isotopes, Vol. 70 (2012) pp. 222-226.
35. "Radiation Shielding Properties of Concrete with Electric Arc Furnace Slag Aggregates and Steel Shots", **Maslehuddin M., A.A. Naqvi, M. Ibrahim, Z. Kalakada,** Annals of Nuclear Energy, 53 (2012) 192–196.
36. "Transport Properties through Double Barrier Structure in Graphene", **H. Bahlouli; Abdullah Aljaafari; Abdullah Aljaafari; choubabi el bouazzaoui,** JLTP, Vol. 168, 1-17 (2012).
37. "Tunneling of Graphene Massive Dirac Fermions through a Double Barrier", **H. Bahlouli, E. B. Choubabi, A. Jellal and M. Mekkaoui,** Journal of Low Temperature Physics, Volume 169, 1-19 (2012).
38. "Full Transmission within a Wide Energy Range and Super-criticality in Relativistic Barrier Scattering", **A. D. Alhaidari, H. Bahlouli, Y. Benabderahmane and A. Jellal,** PHYSICAL REVIEW A **86**, 052113 (2012).
39. "Mathematical Revisit of the Dirac Coulomb Problem", **M.E.H. Ismail, A.D. Alhaidari and H. Bahlouli,** J. Phys. A: Math. Theor. **45**, 365204 (2012).
40. "Solitons in PT- Symmetric Potential with Competing Nonlinearity", **Avinash Khare, S.M. Al-Marzoug, Hocine Bahlouli,** Phys. Lett. A, **376**, 2880 (2012).
41. "Detection and Decoherence of Level Crossing Resonances of ^8Li in Cu", **K. H. Chow, A. I. Mansour, I. Fan, R. F. Kiefl, G. D. Morris, Z. Salman, T. Dunlop, W. A. MacFarlane, H. Saadaoui, O. Mosendz, B. Kardasz, B. Heinrich, J. Jung, C.D.P. Levy, M. R. Pearson, T. J. Parolin, D. Wang, M. D. Hossain, Q. Song, and M. Smadella,** Physical Review B, Vol.85, (2012), pp. 0921031-0921035.
42. "Solvent Effects on IR Modes of (R)-3-Methylcyclopentanone Conformers: A Computational Investigation", **Watheq Al-Basheer,** Journal of Solution Chemistry, **41**, 1495-1506 (2012).

43. "Nucleation and Condensational Growth to CCN Sizes during a Sustained Pristine Biogenic SOA Event in a Forested Mountain Valley", **J. R. Pierce, W. R. Leaitch, J. Liggio, D. M. Westervelt, C. D. Wainwright, J. P. D. Abbatt, L. Ahlm, Watheq Al-Basheer, D. J. Cziczo, K. L. Hayden, A. K. Y. Lee, S.-M. Li, L. M. Russell, S. J. Sjostedt, K. B. Strawbridge, M. Travis, A. Vlasenko, J. J. B. Wentzell, H. A. Wiebe, J. P. S. Wong and A. M. Macdonald**, Atmospheric Chemistry and Physics, 12, 3147-3167 (2012).

College of Computer Science & Engineering

Information & Computer Science Department

1. "A Hybrid of Multiobjective Evolutionary Algorithm and HMM-Fuzzy Model for Time Seriesprediction," **Hassan, M. R., Nath, B., Kirley, M. and Kamruzzaman, J.**, Neurocomputing, Vol. 81, pp. 1-11, 2012.
2. "Comparison of Two Systems for Automatic Detection of Speech Emotions in Arabic Dialogs," **El-Alfy, E.-S. M., Khalil, A., Al-Khatib, W. G., and Cheded, L.**, International Journal of Computer Science and Engineering in Arabic, Phillips Publishing, Vol. 4, No. 3, pp. 67-76, Nov. 2012.
3. "Statistical Feature Analysis of the Makki and MadaniSuras of the Holy Quran Using Information Theory," **El-Alfy, E.-S. M., and R. E. Abdel-Aal**, International Arab Journal of Informatics (IAJI) in Arabic, Association of Arab Universities, Vol. 1, No. 2, pp. 35–44, July 2012.
4. "Tor Traffic Analysis using Hidden Markov Models," **Zhioua, S.**, Journal of Security and Communication Networks (ISI Indexed), John Wiley and Sons, October 2012. DOI: 10.1002/sec.669.
5. "Bootstrapping Trust of Web Services based on Trust Patterns and Hidden Markov Models," **Yahyaoui, H., and Zhioua, S.**, Journal of Knowledge and Information Systems. Springer. 23 September 2012. DOI 10.1007/s10115-012-0554-1.
6. "A Graph Based Requirements Clustering Approach for Component Selection," **Khan, M. A., and Mahmood, S.**, Advances in Engineering Software, Vol. 54, pp. 1–16, 2012.
7. "Is In-Depth Object-Oriented Knowledge Necessary to Develop Quality Robustness Diagrams?," **El-Attar, M., Elish, M., Mahmood, S., and Miller, J.**, Journal of Software, Vol. 7, pp. 2538–2552, 2012.
8. "Usefulness of Acceptance Testing Information for Component-Based System Maintenance," **Mahmood, S.**, IET Software, Vol. 6, pp. 155 – 163, 2012.
9. "Design Requirements in Software and Engineering Systems," **Eleiche, I., Ahmad, I., and Elish, M.**, Industrial Engineering and Management Systems, Vol. 11, No. 1, pp. 70-81, 2012.

10. "State of the Art in Off-line Writer Identification of Handwritten Text and Survey of Writer Identification of Arabic Text," **Awaida, S., and Mahmoud, S. A.,** Educational Research and Reviews, Vol. 7, No. 20, pp. 445-463, July 2012.
11. "An Empirical Investigation of Success Factors for Offshore Software Development Outsourcing Vendors," **Khan, S. and Niazi, M.,** IET Software Journal, Vol. 6, No. 1, pp. 1-15.
12. "An Exploratory Study of Software Process Improvement Implementation Risks," **Niazi, M.,** Journal of Software: Evolution and Process, Vol. 24, No. 8, 877–894, 2012.
13. "A Computational Model for Context-Based Image Categorization and Description", **Helmy, T.,** International Journal of Image & Graphics, Vol. 12, No. 1, PP. 1-19, March 2012.
14. "A Computational Model for Context-Based Image Categorization and Description", **Helmy, T.,** International Journal of Image & Graphics, Vol. 12, No. 1, pp. 1-19, March 2012.
15. "A Framework for Improving Quality in Misuse Case Models", **El-Attar, M.,** Business Process Management Journal, Vol. 18, No. 2, pp. 168–196, 2012.

Computer Engineering Department

1. "Multi-agent Systems for Protecting Critical Infrastructures: A survey," **Baig, Z. A.,** Journal of Network and Computer Applications, Vol. 35, Issue 3, 2012, pp. 1151-1161.
2. "Rapid Anomaly Detection for Smart Grid Infrastructures Through Hierarchical Pattern Matching," **Baig, Z. A.,** International Journal of Security and Networks, Vol. 7, Issue 2, 2012, pp. 83-94.
3. "Video-on-Demand (VoD) Deployment Over Hospitality Networks," **Salah, K., Hamodi, J., Baig, Z. A., Al-Haidari, F.,** International Journal of Network Management, Vol. 22, Issue 1, pp. 65-80.
4. "Classifying Malicious Activities in Honeynets using Entropy and Volume-based Thresholds", **Mohammed H Sqalli, Syed NaeemFirdous, Khaled Salah, and Marwan Abu-Amara,** Security and Communication Networks, John Wiley & Sons, Ltd, July 2012.
5. "A Least-movement Topology Repair Algorithm for Partitioned Wireless Sensor-Actor networks,"**A. Abbasi, M. F. Younis, and U. A. Baroudi,** International Journal of Sensor Networks, Vol. 11, No. 4, 2012, pp. 250-262, DOI: 10.1504/12.47152.
6. "Radio Frequency Energy Harvesting Characterization: An Experimental Study", **Uthman Baroudi, Amin-ud-din Qureshi, Samir Mekid, Abdelhafid Bouhraoua,** 2012, TrustCom, pp.1976~198.
7. "The Impact of Sensor Node Distribution on Routing Protocols Performance: A Comparative Study," **Uthman Baroudi, Anas Al-Roubaiey, Samir Mekid, Abdelhafid Bouhraoua,** 2012, TrustCom, pp.1714~1720.

8. "An Effective Approach for Tolerating Simultaneous Failures in Wireless Sensor and Actor Networks," **Abdullah Alfadhly, Uthman Baroudi and Mohamed Younis**, Proc. MiSeNet '12 Proceedings of the first ACM international workshop on Mission-oriented wireless sensor networking , Pages 21-26, 2012.
9. "Experimental Analysis of SMP Scalability in the Presence of Coherence Traffic and Snoop Filtering", **Mayez A. Al-Mouhamed and Khaled A. Daud**, IEEE 14th International Conference on High Performance Computing & Communication (HPCC), Liverpool, United Kingdom, July 2012.
10. "Exploration of Automatic Optimization for CUDA Programming", **Mayez A. Al-Mouhamed and Ayaz Khan**, 2nd IEEE International Conference on Parallel, Distributed and Grid Computing, Jaypee University of Information Technology (IEEE-PDGC), Himachal Pradesh, India, 6 December 2012. This paper has been selected as the "Second Best IEEE-PDGC-2012 Conference Paper" out of 605 paper submissions.
11. "Bank Conflict-Free Access for CUDA-Based Matrix Transpose Algorithm on GPUs", **A. Baqais, M. Assayony, A. Khan, and M. Al-Mouhamed**, Accepted in the International Conference on Computer Applications Technology (ICCAT'2013), January 2013.

Systems Engineering Department

1. "Scheduling Problem under Constrained Resources: A Historical Review of Solution Methods and Computer Applications," **Haroun, Ahmed E., A. H. Loghman , Salma Y. M. Mahmoud**, Journal of Engineering & Computer Sciences, V13 (2), 2012.
2. "Feasibility of Adopting In-And-Out-Sourcing: A Case Study of PetroCost for Engineering Investment and Construction Co. Ltd." **Haroun, Ahmed E., Elfaki, Elkhawad A., Beshir El Mahdi A. M.** Journal of Quality in Maintenance Engineering, V18 (1), 2012, pp. 4-15.
3. "A Structured Approach to Honors Undergraduate Research Course, Evaluation Rubrics and Course Assessment", **A. Khoukhi**, Springer Journal of Science Edu. & Tech., 2012, DOI: 10.1007/s010956-012-9419-3.
4. "Hybrid Unscented Kalman Filter Neuro-Fuzzy Leak Detection and Classification", **Khoukhi, H. M. Khalid**, and, **L. Cheded**, and **R. "Doraiswami"**, International Journal on Computers and Applications, vol. 45 - No. 22 June 2012.
5. "Hybrid Soft Computing Systems for Reservoir PVT Properties Prediction", **A. Khoukhi**, International Journal of Computers and Geosciences, Elsevier, vol. 44, p: 109–119, 2012.
6. "A Distributed Multi-robot Adaptive Sampling Scheme for the Estimation of the Spatial Distribution in Widespread Fields" **M. F. Mysorewala, L. Cheded**, D. O. Pop EURASIP Journal on Wireless Communications and Networking, 2012, 2012:223, (18 July 2012).

7. "Fault Detection and Classification using Kalman Filter and Hybrid Neuro-Fuzzy Systems" **A. Khoukhi, H. M. Khalid, R. Doraiswami and L. Cheded**, International Journal of Computer Applications, Vol. 45, No. 22, May 2012.
8. "Comparison of Two Systems for Automatic Detection of Speech Emotions in Arabic Dialogs (In Arabic)" **S. El Alfy, A. Khalil, W. Al Khatib, L. Cheded**. International Journal of Computer Science and Engineering in Arabic, Nov. 2012.
9. "A Project-based Teaching Strategy of Robotics Using NI's Embedded-FPGA Platform" **M. F. Mysorewala, L. Cheded**. (Accepted for publication in the International Journal Electrical Eng. (IJE), November 2012).
10. "Unified Approach to Detection and Isolation of Parametric Faults Using a Kalman Filter Residual-Based Approach". **R. Doraiswami, L. Cheded**. (Accepted for publication in the Journal of The Franklin Institute (Elsevier), 9 Jan. 2013)
11. "A distributed multi-robot adaptive sampling scheme for the estimation of the spatial distribution in widespread fields", **Mysorewala Muhammad, Cheded Lahouari**, Pota Dan in EURASIP Journal on Wireless Communications and Networking, 2012, 2012:223 (18 July 2012).
12. "A Generalized Approach to Stabilization of Linear Interconnected Time-Delay Systems ", **Magdi S. Mahmoud and Yuanqing Xia**, Asian Journal of Control, Vol. 14, No. 6, November 2012, pp. 1539-1552.
13. "Decentralized Sliding-Mode Output-Feedback Control of Interconnected Discrete-Delay Systems", **Magdi S. Mahmoud and Aminuddin Qureshi**, *Automatica*, Vol. 48, September 2012, pp. 806-814.
14. "A Regular H_{∞} Filter for Uncertain Discrete-Time Singular Systems with Time-Varying Delays", **Magdi S. Mahmoud, and Yuanqing Xia**, IMA J. Mathematical Control and Information ,Vol. 29, No.3, 1 September 2012, pp. 309-328.
15. "Reliable Decentralized Control of Interconnected Discrete Delay Systems", **Magdi S. Mahmoud**, *Automatica*, Vol. 48, No. 9, September 2012, pp. 986-990.
16. "Robust Finite-Time Control for a Class of Uncertain Switched Neutral Systems", **Zhengrong Xiang, Ya-Nan Sun and Magdi S. Mahmoud**, *Commun Nonlinear Sci Numer Simulat*, Vol. 12, September 2012, pp. 1766-1778.
17. "Asynchronous H_{∞} Filtering of Discrete-Time Switched Systems", **Magdi S. Mahmoud and Peng Shi**, Journal of Signal Processing , Vol. 92, No. 10, October 2012, pp. 2356-2364.
18. "Improved Resilient Feedback Stabilization Methods for Uncertain Systems", **Magdi S. Mahmoud and Syed Asim Hussain**, IET Control Theory and Applications, Vol. 6, No. 11, November 2012, pp. 1654-1660.
19. "Improved Digital Controller Design for Robinson Nuclear Plant", **Magdi S. Mahmoud, Khurram Masood and Aminuddin Qureshi**, IET Control Theory and Applications, Vol. 6, No. 9, September 2012, pp. 1229-1237.

20. "Robust L_2 - L_{∞} Filtering for Switched Time-Delay Systems with Missing Measurements", **Zhengrong Xiang, Changhui Qiao and Magdi S Mahmoud**, Journal of Circuits, Systems and Signal Processing, Vol. 31, No 5, September 2012, pp. 1677-1697.
21. "New Results for Global Exponential Stability of Neural Networks with Varying Delays", **Yajuan Liu, Wanbiao Ma and Magdi S Mahmoud**, Neurocomputing, Vol. 97, November 2012, pp. 357-363.

College of Industrial Management

Department of Accounting & MIS

1. Explaining SRI Behavior of Malaysian Unit Trust Fund Managers Using Theories of Planned Behavior", **Talha, M. & Abdullah**, Corporate Ownership and Control, Vol. 9, Issue 4, summer, 2012, p. 108.
2. "Mobile Banking Adoption: Application of Diffusion of Innovation Theory," **Al-Jabri, I. and Sohail, M. S.** Journal of Electronic Commerce Research, Vol. 13, No. 4, (2012) pp. 379-391.
3. "Price Linkages Between the GCC Stock Markets: A Bounds Test Using an Auto Regressive-Distributed Lag Model", **Abraham Abraham and Haider Madani** (2012), International Journal of Monetary Economics and Finance, 5 (1), pp. 87-98.
4. "The Price Discovery Process and Volatility Linkages in a Resource Based Emerging Market: Evidence from the Saudi Stock Market", **Abraham Abraham, Fazal J. Seyyed and Haider Madani** (2012), International Journal of Accounting and Finance, 3(3), pp. 223-236 (Project # IN000248).

College of Environmental Design

Architectural Engineering Department

1. "A Multi-Phase Systematic Framework for Performance Appraisal of Architectural Design Studio Facilities," **Hassanain, M.A., Mohammed, M.A. and Cetin, M.**, Facilities, Vol. 30, Issue 7/8, 2012, pp. 324-342.

City & Regional Planning Department

1. "An Analysis of Urban Growth Trends in the Post-Economic Reforms Period in India", **Chadchan, J. and R. Shankar** International Journal of Sustainable Built Environment, (2012) 1, P. 36-49.
2. "Performance Evaluation of Design-Build (D-B) Projects with and Without Agency Construction Management", **Shaik Abdul Khader Jeelani, J.Karthikeyan, Adel S.Aldosary**, International Journal of Civil Engineering and Technology (IJCIET), Vol. 3, Issue 2, July-December 2012, pp. 265-278.

3. "Empirical Evaluation of Performance of Construction Management At-Risk (CM at - Risk) Project Delivery System With and Without Agency-CM", **Shaik Abdul Khader Jeelani, Adel S. Al-Dosary, J.Karthikeyan**, International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Volume-2, Issue-2, December 2012.
4. "City Structure in Transition: A Conceptual Discourse on the Impact of Information and Communication Technology (ICT)", **Nahiduzzaman, K. M., & Aldosary, A. S., In A. Cakir, & P. Ordóñez de Pablos (Eds.), Social Development and High Technology Industries: Strategies and Applications**, Hershey, PA: Information Science Reference, 2012, pp. 187-199, doi:10.4018/978-1-61350-192-4.ch013.

College of Applied and Supporting Studies

General Studies Department

1. Youths' Views on Corruption Control in China: Politics and Social Censure," **Jiang, G.P., Lo, T.W., & Li, Carrie**, International Journal of Offender Therapy and Comparative Criminology, 2012, doi: 10.1177/0306624X12457351.
2. "Formation and Trend of Guanxi and Guanxi Phenomenon," **Jiang, G.P., Lo, T.W., & Garris, C. P.**, International Journal of Criminology and Sociology, 1, November 2012, pp.207-220.
3. "Saudi Youth: Challenges for the Future", **Thompson, M.**, Orient: German Journal for Politics, Economics and Culture of the Middle East, Vol. IV, 2012, pp. 32-38.

RESEARCH NEWSLETTER ENTRIES RECEIVED FROM CENTERS OF RESEARCH EXCELLENCE (CoRE)

Center for Research Excellence in Nanotechnology

1. "Preparation of Room Temperature Ferromagnetic BiFeO₃ and its Application as an Highly Efficient Magnetic Separable Adsorbent for Removal of Rhodamine B from Aqueous Solution," **Zhang, J., Gondal, M.A., Wei, W., Zhang, T., Xu, Q. and Shen, K.**, Journal of Alloys and Compounds, Vol. 530, July 2012, pp. 107-110.
2. "Synthesis of Nickel Oxide Nanoparticles using Pulsed Laser Ablation in Liquids and their Optical Characterization," **Gondal, M.A., Saleh, T.A. and Drmash, Q.A.**, Applied Surface Science, Vol. 258, July 2012, pp. 6982-6986.
3. "Spark Plasma Sintering of Metals and Metal Matrix Nanocomposites: A Review," **Saheb, N., Iqbal, Z., Khalil, A., Hakeem, A.S., Al-Aqeeli, N., Laoui, T., Al-Qutub, A. and Kirchner, R.**, Journal of Nanomaterials, Volume 2012, July 2012, pp. 1-13.
4. "Thermal Effect of Ceramic Nanofiller Aluminium Nitride on Polyethylene Properties," **Sohail, O.B., Sreekumar, P.A., De, S.K., Khan, M.J., Hakeem, A., Alshaiban, A.A., and Al-Harhi, M.A.**, Journal of Nanomaterials, Vol. 2012, July 2012, pp. 1-7.
5. "Ambipolar Operation of Hybrid SiC-carbon Nanotube based Thin Filmtransistors for Logic Circuits Applications," **Aïssa, B., Nedil, M., Esam, A. H., Tabet, N., Therriault, D. and Rosei, F.**, Applied Physics Letters, Vol. 101, July 2012, pp. 043121-043124.

6. "Bismuth Oxychloride-mediated and Laser-induced Efficient Reduction of Cr(VI) in Aqueous Suspensions," **Qamar, M. and Yamani, Z.H.**, Applied Catalysis A: General, Vol. 439-440, August 2012, pp. 187-191.
7. "Electro Membrane Extraction of Biological Anions with Ion Chromatographic Analysis," **Tan, T.Y., Basheer, C., Ng, K.P. and Lee, H.K.**, Analytica Chimica Acta, Vol. 739, August 2012, pp. 31-36.
8. "Novel Sulfonated Poly(ether ether ketone)/Phosphonated Polysulfone Polymer Blends for Proton Conducting Membranes," **Abu-Thabit, N., Ali, A.S., Zaidi, S.M. and Mezghani, K.**, Journal of Materials Research, Vol. 27, August 2012, pp. 1958-1968.
9. "Determination of Polycyclic Aromatic Hydrocarbons in Water using Nanoporous Material Prepared from Waste Avian Egg Shell," **Nuhu, A.A., Basheer, C., Sheikh, A. A. and Al-Arfaj, A.R.** Journal of Nanomaterials, Vol. 2012, August 2012, pp. 1-7.
10. "High Sensitive Detection of Nitric Oxide using Laser Induced Photoacoustic Spectroscopy at 213 nm," **Gondal, M.A., Khalil, A.A.I. and Al-Suliman, N.**, Applied optics, Vol. 51, August 2012, 5724-5734.
11. "Morphology and Antifungal Effect of Nano-ZnO and Nano-Pd-doped Nano-ZnO Against Aspergillus and Candida," **Gondal, M.A., Alzahrani, A.J., Randhawa, M.A. Siddiqui, M.N.**, Journal of Environmental Science and Health - Part A, Vol. 47, August 2012, pp. 1413-1418.
12. "Effect of Mn Doped-titania on the Activity of Metallocene Catalyst by In-situ Ethylene Polymerization," **Abdul Kaleel S.H., Bahuleyan, B.K., De, S.K., Masihullah, J., Sougrat, R. and Al-Harthi, M.A.**, Journal of Industrial and Engineering Chemistry, Vol. 18, September 2012, pp. 1836-1840.
13. "Pulsed Laser-induced Photocatalytic Reduction of Greenhouse Gas CO₂ into Methanol: A value-added Hydrocarbon Product Over SiC" **Gondal, M.A., Ali, M., Chang, X.F., Shen, K., Xu, Q.Y. and Yamani, Z.H.**, Journal of Environmental Science and Health - Part A, Vol. 47, September 2012, pp. 1571-1576.
14. "Soluble Silicon Nanoparticles–polyaniline Capsules for Biosensing and Imaging," **Elhalawany, N., Maximenko, Y., Yamani, Zain., Yau, S.T. and Nayfeh, M.H.**, Journal of Materials Research, October 2012, pp. 1-6, DOI: <http://dx.doi.org/10.1557/jmr.2012.325>.
15. "TLC-FID Calibration and Accurate Weight Determination of SARA Fractions in Heavy Crude Oil," **Khan, S.A., Sarfraz, S. and Price, D.**, Petroleum Science and Technology, Vol. 30, October 2012, pp. 2401–2406.
16. "Recycling of Poly(ethylene terephthalate) Waste Through Methanolic Pyrolysis in a Microwave Reactor," **Siddiqui, M.N., Redhwi, H.H. and Achilias, D.S.**, Journal of Analytical and Applied Pyrolysis, Vol. 98, November 2012, pp. 214-220.

17. "Investigation of Bioaccumulation Profile of Estrogens in Zebrafish Liver by Hollow Fiber Protected Liquid Phase Microextraction with Gas Chromatography-mass Spectrometric Detection," **Kanimozhia, S., Basheerb, C., Neveliappanc, S., Anga, K., Xuea, F. and Lee, H.K.,** Journal of Chromatography B, Vol. 909, November 2012, pp. 37-41.
18. "Wear Behavior of Spark Plasma Sintered Al2124 Aluminum Alloy Containing Carbon Nanotubes," **Al-Qutub, A.M., Khalil, A., Saheb, N., Al-Aqeeli, N. and Laoui, T.,** Science of Advanced Materials, Vol. 4, November 2012, pp. 1166-1173.
19. "Effect of the Surface Texture and Crystallinity of ZnO Nanoparticles on their Toxicity," **Selim, A.A., Al-Sunaidi, A. and Tabet, N.,** Materials Science and Engineering: C, Vol. 32, December 2012, pp. 2356-2360.
20. "Determination of Phenoxy Herbicides in Water Samples using Phase Transfer Microextraction with Simultaneous Derivatization Followed by Gas-Chromatography Mass-spectrometry Analysis," **Nuhu, A.A., Basheer, C., Alhooshani, K. and Al-Arfaj, A.R.,** Journal of Separation Science, Vol. 35, December 2012, pp. 3381-3388.
21. "Visual Detection of Single-base Mismatches in DNA using Hairpin Oligonucleotide with Double-target DNA Binding Sequences and Gold Nanoparticles," **He, Y., Zhanga, X., Zhanga, S., Krisc, M.K.L., Manc, F.C., Kawded, A. and Liu, G.,** Biosensors and Bioelectronics, Vol. 34, December 2012, pp. 37-43.

Center of Research Excellence in Petroleum Refining and Petrochemicals

1. "Simultaneous Hydrodesulfurization of Dibenzothiophene and Substituted Dibenzothiophenes over Phosphorus Modified CoMo/Al₂O₃ Catalysts", **S. A. Ali, S. Ahmed, K. Ahmed, M. Al-Saleh (2012).** Fuel Processing Technology, v. 98, pp. 39-44.
2. "Oxidative Dehydrogenation of Lower Alkanes over Metal Incorporated MCM-41 Catalysts", **Ahmed, S., Rehman, F., Al-Amer, A. M. J., Al-Mutairi, E. M., Baduruthamal, U., and Alam, K.,** Reaction Kinetics, Mechanisms and Catalysis, Vol. 105, no. 2; 2012, pp. 483-493.
3. "Chemical Modification of Waste Oil Fly Ash for Improved Mechanical and Thermal Properties of Low Density Polyethylene Composites", **Khan, M. J., Al-Juhani, A. A., Shawbkeh, R., Ul-Hamid A., and Hussein, I.A.,** Journal of Polymer Research Vol. 18, 2012, pp. 2275-2284.
4. "Deep Desulfurization of Gas Oil over NiMo Catalysts Supported On Alumina-Zirconia Composites", **Al-Daous, M., and Ali, S.,** Fuel, Vol. 97, 2012, pp. 662-669.
5. "Aromatic Transformations over Aluminosilicate Micro-Mesoporous Composite Materials", **Odedario, T., Balasamy, R., and Al-Khattaf, S.,** Catalysis Science & Technology, Vol. 2, 2012, pp. 1275-1286.

6. "Synthesis of Stable H-Galloaluminosilicate MFI with Hierarchical Pore Architecture by Surfactant-Mediated Base Hydrolysis, and their Application in Propane Aromatization", **Al-Yassir, N., Akhtar, M. N., Ogunronbi, K., and Al-Khattaf, S.**, Journal of Molecular Catalysis A: Chemical, Vol. 360, 2012, pp. 1-15.
7. "Synthesis and Crystal Structures of Cadmium Iodide Complexes of N,N'-Diethylthiourea and 1,3-Diazinane-2-thione", **Ahmad, S., Amir, Q., Naz, G., Fazal, A., Fettouhi, M., Isab, M. A., Rüffer, T., and Lang, H.**, Journal of Chemical Crystallography, Vol. 42, Issue 6, 2012), pp. 615-620.
8. "Bubble-induced Damping in Displacement-driven Microfluidic Flows", **Lee, J., Rahman, F., Laoui, T., and Karnik, R.**, Physical Reviews, E, E 86, 026301 (2012) 9 pages.
9. "Polyelectrolyte Multilayer Thin Film Composite Membrane for Water Purification: Membrane's Stability and Characteristics" **Fadhillah F., Zaidi, S.M.J, Khan, Z., Khaled, M.M., Rahman, F. and Hammond, P.T.** Journal of Applied Polymer Science, Vol. 126, Issue 4, 2012, 1468–1474.
10. "Aromatization of Alkanes over Pt Promoted Conventional and Mesoporous Gallosilicates of MEL zeolite", **Akhtar, M. N., Al-Yassir, N., Al-Khattaf, S., and Cejka, J.**, Catalysis Today Vol 179, 2012, 61-72.
11. "Synthesis, Structure, and Kinetic Studies on [RuCl₂(NCCH₃)₂(cod)]", **Pérez-Torrente, J. J., Cunchillos, C., Gómez-Bautista, D., Victoria-Jiménez, M., Castarlenas, T., Lahoz F. J., and Oro, L. A.**, Journal of Coordination Chemistry, Vol 65, No. 17, 2012, 2981-2991.
12. "Facile Two-electron Reduction of a Closo-rhodathiadecaborane", **Luaces, S., Bould, J., Macías, R., Sancho, R., Lahoza, F. J., and Oro. L. A.**, Dalton Trans., Vol 41, 2012, 11627-11634.
13. "Modification of [8,8,8-(H)(PPh₃)₂-9-(Py)-nido-8,7-RhSB₉H₉], Py = NC₅H₅, with Monodentate Phosphines: Reactivity and Mechanistic Insights", **Calvo, B., Alvarez, A., Macías, R., García-Ordun, P., Lahoz, F. J., and Luis A. Oro.** Organometallics, Vol 31, 2012, 2986–2995.
14. "Utilization of ZSM-5/MCM-41 Composite as FCC Catalyst Additive for Enhancing Propylene Yield from VGO Cracking" **Jermy, B. R., Siddiqui, M. A. B., Aitani, A. M., Saeed, M. R., and Al-Khattaf, S.**, Journal of Porous Materials, Volume, 19, Issue 4, 2012, pp. 499-509.
15. "Synthesis and Physical Properties of New Layered Double Hydroxides based on Ionic Liquids: Application to a Polylactide Matrix", **Livi, S., Bugatti, V., Estevez, L., Duchet-Rumeau, J., Giannelis. E. P.**, Journal of Colloid and Interface Science Vol 388, Issue 1, 2012, pp. 123-129.
16. "Synthesis and Properties of Core-shell Fluorescent Hybrids with Distinct Morphologies based on Carbon Dots", **Markova, Z., Bourlinos, A. B., Safarova, K., Polakova, K., Tucek, J., Medrik, I., Siskova, K., Petr, J., Krysmann, M., Giannelis. E. P. and Radek Zboril. J.** Mater. Chem., Vol 22, 2012, 16219.

17. "Ketene-Based Route to Rigid Cyclobutanediol Monomers for the Replacement of BPA in High Performance Polyesters". **Burke, D. J., Kawauchi, T., Kade, M. J., Leibfarth, F. A., McDearmon, B., Wolffs, M., Kierstead, P. H., Moon, B., and Hawker, C. J.,** ACS Macro Lett. Vol 1, 2012, 1228-1232.
18. "Side-chain Alkylation of Toluene with Methanol to Styrene over Cesium Ion-Exchanged Zeolite X Modified with Metal Borates" **Balkrishna B. T., Alabi, W., Aitani, A. M., Hattori, H. and Al-Khattaf, S.,** Applied Catalysis A-General, vol. 443, pp. 214-220 (2012).
19. "Kinetic Modeling of Heavy Reformate Conversion into Xylenes over Mordenite-ZSM-5 based Catalysts", **Al-Mubaiyedh, U., Ali, S., and Al-Khattaf, S.,** Chemical Engineering Research and Design, Vol 90, No. 11, 2012, Pages 1943-1955.
20. "Kinetics Modeling of Ethylbenzene Dehydrogenation to Styrene over a Mesoporous Alumina Supported Iron Catalyst" **Hossain, M. M., Atanda, L., Al-Yassir N., and Al-Khattaf, S.,** The Chemical Engineering Journal. Volumes 207–208, 2012, pp. 308–321.
21. "Mild Hydrocracking of 1-Methyl Naphthalene (1-MN) over Alumina Modified Zeolite, **Park, J., Ali, S. A., Alhooshani, K., Azizi, N., Miyawaki, J., Kim, T., Lee, Y., Kim, H., Yoon, S., and Mochida, I.,** Journal of Industrial and Engineering Chemistry, 2012. doi:10.1016/j.jiec.2012.09.014.
22. "Hydrotreating of Light Cycle Oil over NiMo and CoMo Catalysts with Different Supports", **Azizi, N., Ali, S. A., Alhooshani, K., Kim, T., Lee, Y., Park, J., Miyawaki, J., Yoon, S., and Mochida, I.,** Fuel Processing Technology, November 1, 2012.
23. "Physicochemical Properties and Catalytic Performance of Galloaluminosilicate in Aromatization of Lower Alkanes - A Comparative Study with Ga/HZSM-5" **Al-Yassir, N., Akhtar, M. N., and Al-Khattaf, S.,** Journal of Porous Materials.
24. "Comparative Study of Zeolite Catalyzed Alkylation of Benzene with Alcohols of Different Chain Length: H-ZSM-5 Versus Mordenite" **Odedario, T., and Al-Khattaf, S.,** Catalysis Today. *Catalysis Today* (July 2012), doi:10.1016/j.cattod.2012.05.052 Key: citeulike:10851651
25. "n-Butane Dehydrogenation over Mono and Bimetallic MCM-41 Catalysts under Oxygen Free Atmosphere" **Ajayi, B. P., Jermy, B. R., Ogunronbi, K. E., Abussaud, B. A., and Al-Khattaf, S.,** Catalysis Today. <http://dx.doi.org/10.1016/j.cattod.2012.07.013>,
26. "Chelating N-Heterocyclic Carbene Group IV Complexes for the Polymerization of Ethylene and Styrene", **Miyake, G. M., Akhtar, M. N., Fazal, A., A.Jaseer, E., Daeffler, C. S., Grubbs, R. H.,** J Organometallic Chemistry, 2012.

9. RESEARCH PAPERS PRESENTED AT CONFERENCES REPORTED AFTER JULY 2012

College of Engineering Sciences

Civil Engineering

1. "Corrosion-Based Service-Life Prediction of RC Structures Using Electrochemical and Gravimetric Methods - A Comparative Study," **Alghamdi, S.A., Ahmad, S., and A. Lawan**, Proceedings of First International Congress on Durability of Concrete (ICDC2012), Paper C10-4, Trondheim, Norway, June 18-21, 2012.
2. "Water Resources and Water Consumption Pattern in Saudi Arabia", **Chowdhury S.** and **Zahrani M.** *In: The Proceedings of the 10th Gulf Water Conference*: 2011, p: 67-81.

Chemical Engineering

1. Study of Integrated Biomass Gasification and Chemical-Looping Combustion for CO₂ Capture", **M.M. Hossain, M.M., Quddus, M.R., Abdur Razzak, S., de Lasa, H.I.** 22nd Annual Saudi Arab-Japan Symposium on catalysis in Petroleum Refining and Petrochemicals, Dhahran, Saudi Arabia, November 25-26, 2012.
2. "Ethane Oxidative Dehydrogenation Over Vox/Al₂O₃ Catalyst in a Fluidized Bed Reactor Under Oxygen-Free Conditions", **S. Al-Ghamdi, M. Volpe, M.M. Hossain, H. I. de Lasa**, AIChE Annual Meeting, Pittsburgh, USA., October 28 – November 2, 2012.
3. "Ni Based Oxygen Carrier for Chemical Looping Combustion: The Key Importance of The Support and The Preparation Method", **M.R. Quddus, M.M. Hossain, H.I. de Lasa**, 2nd International Conference on Chemical Looping, Darmstadt, TU, Germany September 26 – 28, 2012.
4. "Ni-Co/La Modified γ -Al₂O₃ for Chemical Looping Combustion: Reactivity and Reduction kinetics" **M.R. Quddus, M.M. Hossain, H.I. de Lasa**, 22nd International Symposium on Chemical Reaction Engineering (ISCRE 22), Maastricht, The Netherlands, September 2-5, 2012.
5. "Kinetics Modeling of Dehydrogenation of Ethylbenzene to Styrene on a Mesoporous Alumina Supported Iron Catalyst", **M.M. Hossain., L. Atanda, N. Al-Yassir, S. Al-Khattaf**, 22nd International Symposium on Chemical Reaction Engineering (ISCRE 22), Maastricht, The Netherlands, September 2-5, 2012.
6. "Oxygen Free Oxidative Dehydrogenation of Ethane to Ethylene over VOx Catalyst in Fluidized Bed Reactor", **S. Al-Ghamdi, M. Volpe, M.M. Hossain, H. I. de Lasa**, 62nd Canadian Chemical Engineering Conference, Vancouver, BC, Canada, October 14-17, 2012.

7. "Solid Holdups Distribution Modeling in a Liquid-solid Circulating Fluidized Bed Riser using ANFIS", **S.A. Razzak, S.M. Rahman, M.M. Hossain, J. Zhu**, 62nd Canadian Chemical Engineering Conference, Vancouver, BC, Canada, October 14-17, 2012.
8. "Kinetic Study of the Effect of a Mixture of two Corrosion Inhibitors in Reducing the Corrosion Rate of 1018 Carbon Steel Petroleum Pipelines in Sea Water", **Rihan, R.O, Swabkeh R, Al-Bakr, N.**, NACE – International corrosion conference sense 5, PP 3457-3471.
9. "Study of Integrated Biomass Gasification and Chemical-Looping Combustion for CO₂ Capture", **M.M. Hossain, M.R. Quddus, S. A. Razzak, H.I. deLasa**, 22nd Saudi Japan Annual Symposium on Catalysis in Petroleum Refining & Petrochemicals, November 2012, KFUPM Dhahran, Saudi Arabia.
10. "Solid Holdups Distribution Modeling in a Liquid-Solid Circulating Fluidized Bed using ANFIS", **S. A. Razzak, S. M. Rahaman, M.M. Hossain, J. Zhu**, CSChE Conference, October 2012, Vancouver, BC, Canada.
11. "Hydrodynamics Modeling of AN LSCFB Riser using ANFIS", **S. A. Razzak**, International Symposium on Multiphase Flow and Transport Phenomena, April 2012, Agadir, Morocco.
12. "IMC-PID Controller Tuning from Closed-loop Setpoint Response", **M. Shamsuzzoha, Mudassir Hasan and Moonyong Lee**, 12th International Conference on Control, Automation and Systems, Oct. 17-21, 2012 in ICC, Jeju Island, Korea.
13. "Structural Design by Shortcut Method of the Divided Wall Column", **M. Shamsuzzoha, Hiroya Seki and Moonyong Lee**, 10th International Oil& Gas Conference and Exhibition, October 14-17 October, 2012, New Delhi, India
14. "Closed-loop PI/PID Controller Tuning for Stable and Unstable Processes", **M. Shamsuzzoha, Moonyong Lee and Hiroya, Seki**, 2012 American Control Conference, 27-29 June 2012 – Montreal, Canada.
15. "Process Design and Control of Dividing Wall Columns", **Hiroya Seki and M. Shamsuzzoha**, (conference presentation and proceedings paper) 22nd Annual Saudi-Japan Symposium - 2012, 25-26 November, 2012, KFUPM, Dhahran, Saudi Arabia.
16. "Development and Testing of New class of Membranes for RO Desalination", Proc: **S.M. Javaid Zaidi, F. Fadillah, Z.U. Khan**, 10th Water Desalination Conference in the Arab Countries (ARWADEX-12), April 8-11, 2012, Riyadh, Saudi Arabia.
17. "Enhancement of Surface Properties of Waste Oil Fly Ash by Chemical Treatment", **Reyad Shawabkeh; Muhammad J. Khan; Abdulhadi A. Al-Juhani; Hamad I. Abdul Wahhab; Ibnelwaleed A. Hussein**, 3rd International Conference on Industrial and Hazardous Waste Management, Crete, Sept 12-14, 2012.

Electrical Engineering

1. "MOSFET Scaling Crisis and the Evolution of Nanoelectronic Devices: The Need for a Paradigm Shift in Electronics Engineering Education", **M. T. Abuelma'atti**, Proceedings of the 6th International Forum on Engineering Education, Kuala Lumpur, Malaysia, pp. 1-6 (CD), November 20-22, 2012.
2. "Evaluation of Engineering Research in Arab Countries using a Biometric-based Approach", **M.T. Abuelma'atti**, Proceedings of the 6th International Forum on Engineering Education, Kuala Lumpur, Malaysia, pp. 1-8 (CD), November 20-22, 2012.
3. "Practical Implementation of Compressive Sensing to UWB Signals", **M. Tamim** and **A. Muqaibel**, 11th International Conference on Information Science, Signal Processing and their Applications (ISSPA), Montreal, Canada, July 2012.
4. "A New LMS Strategy for Sparse Estimation in Adaptive Networks", **M.O. Bin Saeed** and **A.U.H. Sheikh**, Proceedings of 23rd IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE-PIMRC), Sydney, Australia, September 2012.
5. "Modeling and Simulation of Non-Isotropic Nakagami Hoyt Vehicle to Vehicle Fading Channel", **M.I. Akram** and **A. U. H. Sheikh**, Proceedings CSNDSP 2012 IEEE-IET Conference, Poznan, Poland, July 2012.
6. "Efficient Implementation of of Tap Delay Line Filter Using High Speed Digital Signal Processor", **M. I. Akram** and **A. U. H. Sheikh**, Proceedings IEEE- ISSPA 2012, July 2012.
7. "Cognitive Radio Oriented Wireless Networks: Challenges and Solutions", **R. Umar** and **A.U.H. Sheikh**, Proceedings 3rd international conference on multimedia computing and systems, Tangier - Morocco, May 10-12, 2012.
8. "Application of Tagged User Analysis to FU-FB Slotted ALOHA Performance over Frequency Selective Fading Channels", **K. Masood**, **M.S. Sohail**, **A.U.H. Sheikh**, and **M. A. Haleem**, 75th IEEE- Vehicular Technology Conference (VTC Spring) Record, vol., no., pp.1-5, Yokohama, Japan, May 6-9, 2012.
9. "Slotted ALOHA for Cognitive Radio Users and its Tagged User Analysis", **S. Hu**, **Y. D. Yao**, **A.U.H. Sheikh**, Proceedings of the 21st Annual Wireless and Optical Communications Conference (WOCC), Kaohsiung, Taiwan, April 19-21, 2012.
10. "Modeling Nakagami Hoyt Mobile to Mobile Fading Channel with Diffused Line of Sight", **M.I. Akram** and **A.U.H. Sheikh**, Proceedings Wireless Communications and Networking Conference Workshops (WCNCW), 2012 IEEE , pp.398-403, doi: 10.1109/WCNCW.2012.6215530, Paris, April 1-4, 2012.

11. "A Novel Current-mode Ultra-low Low Power Analog CMOS Four Quadrant Multiplier", **M. A. Absi, A. Hussain and M.T. Abuelma'atti**, 4th International Conference on Computer and Communication Engineering, pp. 13-17, July 2012.
12. "An Ultra-Low Power High Accuracy Current-Mode CMOS Squaring Circuit", **M.A. Absi, and K. Al-Tamimi**, 2012 International Conference of Electrical and Electronics Engineering, USA, pp. 872-874, October 2012.
13. "A Current-Mode Controllable Logarithmic Function Circuit using MOSFET in Subthreshold", **M. A. Absi, and K. Al-Tamimi**, 2012 International Conference of Electrical and Electronics Engineering, USA, pp. 844-846, October 2012.
14. "Convergence Analysis of the Epsilon-NSRLMMN Algorithm", **M. M. Ulla Faiz and A. Zerguine**, EUSIPCO2012, Bucharest, Romania, August 26-30, 2012.
15. "Cooperative Parameter Estimation using a PSO in AD-HOC WSN", **S. H. Arastu, A. Zerguine, M. O. Bin Saeed, and A. T. Al-Awami**, EUSIPCO2012, Bucharest, Romania, August 26-30, 2012.
16. "Convergence Analysis of a Modified Armijo Rule Step-Size LMF Algorithm", **S.M. Asad and A. Zerguine**, ISSPA, Montreal, Canada, July 2-5, 2012.
17. "Exact Outage Probability of Opportunistic DF Relay Systems with Interference at Both the Relay and the Destination over Nakagami- m Fading Channels," **A. Salhab, F. Al-Qahtani, S. Zummo, and H. Alnuweiri**, Proceedings of the IEEE Global Communications Conference (GLOBECOM'12), Anaheim, California, USA, December 2012.
18. "Unsupervised Algorithms for Distributed Estimation over Adaptive Networks", **M.O. Bin Saeed, A. Zerguine and S. Zummo**, Proceedings of the 45th Asilomar Conference on Signals, Systems and Computers (Asilomar'12), Pacific Grove, California, USA, November 2012.
19. "A New Low-Complexity Relay Selection Scheme Based on Switch-And-Examine Diversity Combining for Dual-Hop Relay Networks", **A. Salhab and S. Zummo**, Proceedings of the IEEE International Symposium on Personal, Indoor & Mobile Radio Communications (PIMRC'12), Sydney, Australia, September 2012.
20. "Performance Analysis of Amplify-and-Forward Relay System with Interference-Limited Destination in Different Fading Environments", **A. Salhab, F. Al-Qahtani, S. Zummo, and H. Alnuweiri**, Proceedings of the 9th Int'l Symposium on Wireless Communication Systems (ISWCS'12), Paris, France, August 2012.
21. "Performance Analysis of Dual-Hop AF Relay Systems with Interference-Limited Destination in Nakagami- m /Rician Fading Channels", **A. Salhab, F. Al-Qahtani, S. Zummo, and H. Alnuweiri**, Proceedings of the 11th Int'l Symposium on Information Science, Signal Processing and their Applications (ISSPA'12), Quebec, Canada, July 2012.

22. "Efficient Adaptive Identification of Nonlinear Power Amplifiers Using the Twin-Nonlinear Two-Box Model", **A. H. Abdelhafiz, O. Hammi, and A. Zerguine**, IEEE Vehicular Technology Society Asia Pacific Wireless Communications Symposium, Kyoto, Japan, August 23-24, 2012.
23. "Evaluation of Electric-Grids Performance Using Robust Estimators", **Ibrahim O. Habiballah**, GCA'12 - The 2012 International Conference on Grid Computing and Applications, Las Vegas, Nevada, USA, July 16-19, 2012.
24. "Robust Estimators Using Mathematical Programming Algorithms", **Ibrahim O. Habiballah**, PowerCon 2012, Auckland, New Zealand, Oct. 30 – Nov. 2, 2012.
25. "Pulse Shaping for Direct-Sequence OQPSK-spread UWB Signals", **M.A. Landolsi**, Proc. 11th Intl. Conf. Inform. Sc., Sig. Proc. App. (ISSPA2012), pp. 983-987, July 2012.
26. "High Capacity Color Image Watermarking using the Multi-dimensional Fourier Transform and Semi-Random LDPC Codes", **L. Ghouthi and M. A. Landolsi**, Proc. IET Image Processing Conf., July 2012.
27. "Robust Color Image Watermarking using the Spatio-Chromatic Fourier Transform and LDPC Codes", **L. Ghouthi and M. A. Landolsi**, Proc. Intl. Conf. Comp. & Comm. Eng. (ICCCE), July 2012.
28. "Practical Verifications for Capacity and Coverage Predictions in Real world UMTS Cellular Networks", **M. H. Amro, M.A Landolsi and S. Zummo**, Proc. Intl. Conf. Comp. & Comm. Eng. (ICCCE), July 2012.
29. "IPSO Based SMES Controller Design for a PMSG Wind system", **M. Haris Khan and A.H.M.A. Rahim**, Proc. 2nd IEEE International Energy Conference and Exhibition - ENERGYCON 2012/ Future Energy Grids and Systems Symp, Florence, Italy, 9-12 pp. 599-604, September 2012.
30. "Optimal Design of Autonomous Microgrid Using Particle Swarm Optimization", **M.A. Hassan, M.A. Abido, A.H.M.A. Rahim**, Proc. IEEE SPEEDAM 2012, pp.152-157, Italy, 20-22 June 2012.
31. "An Adaptive Intelligent Control of Doubly Fed Wind Generator for Fast Transient Recovery", **A.H.M.A. Rahim and M.A. Abido**, Proc. IEEE PECON, Malaysia, pp.79-84, December 2012.
32. "Modeling and Control of a PMSG Wind System with STATCOM Capacitor Energy Storage Device", **A.H.M.A. Rahim**, Proc. IASTED Conference on Modeling and Simulation (MS 12), pp.249-254, Banff, July 2012.
33. "Fault Location in SEC Interconnected Network Based on Synchronized Phasor Measurements", **A. H. Al-Mohammed, M. M. Mansour, and M. A. Abido**, CIGRE 2012, F-75008, C4-205, Paris, France, August 2012.

34. "Characterization of Short-duration Voltage Variations", **F. R. Zaro, S. Ameenuddin, M. A. Abido,** and **I. M. Elamin**, Accepted for Presentation in the 2012 IEEE International Power and Energy Conference (PECON 2012), Kota Kinabalu, Malaysia, 2 – 5 December 2012.
35. "An Efficient MPPT Controller using Differential Evolution and Neural Networks", **M. Sheraz** and **M. A. Abido**, Accepted for Presentation in the 2012 IEEE International Power and Energy Conference (PECON 2012), Kota Kinabalu, Malaysia, 2–5 December 2012.
36. "An Adaptive Intelligent Control of Doubly Fed Wind Generator for Fast Transient Recovery", **A. H. M. A. Rahim** and **M. A. Abido**, Accepted for Presentation in the 2012 IEEE International Power and Energy Conference (PECON 2012), Kota Kinabalu, Malaysia, 2 – 5 December 2012.
37. "Optimal Design of Power System Stabilizers: A PSOIIW Procedure", **A. Ghasemi** and **M. A. Abido**, Proceedings of The 27th International Power Systems Conference (PSC 2012), Tehran, Iran, 12 – 14 November 2012.
38. "Active and Reactive Power Control of Grid Integrated DFIG for Variable Speed Wind Power Generation", **M. Yabre** and **M. A. Abido**, Proceedings of The Saudi Arabia Smart Grid (SASG 2012), Jeddah, Saudi Arabia, 8 – 11 December 2012.
39. "RTDS Implementation of STATCOM for Power System Stability Improvement", **F.S. Al-Ismail** and **M. A. Abido**, Proceedings of The Saudi Arabia Smart Grid (SASG 2012), Jeddah, Saudi Arabia, 8 – 11 December 2012.
40. "Power System Stability Enhancement Through Wide Area Measurements", **I. Khan** and **M. A. Abido**, Proceedings of The Saudi Arabia Smart Grid (SASG 2012), Jeddah, Saudi Arabia, 8 – 11 December 2012.
41. "Design for Linearizability of GaN based Multi-carrier Doherty Power Amplifier through Bias Optimization", **O. Hammi, S. C. Jung,** and **F. M. Ghannouchi**, 19th IEEE International Conference on Electronics, Circuits, and Systems (ICECS2012), Seville, Spain, pp. 492-495, December 2012.
42. "Nonuniform Memory Polynomial behavioral Model for Wireless Transmitters and Power Amplifiers", **O. Hammi, A. M. Kedir,** and **F. M. Ghannouchi**, 2012 IEEE Asia-Pacific Microwave Conference (APMC2012), Kaohsiung, Taiwan, pp. 836-838, December 2012.
43. "A Novel Adaptive Scheme for Channel Estimation", **A. Zidouri**, 11th International Conference on Information Science, Signal Processing and their Application, ISSPA 2012, Montreal (Quebec), Canada, 3 – 5, July 2012.

Mechanical Engineering

1. "Flow Reversal In Mixed Convection In Vertical Concentric Annuli, Paper # CHT12-MX02", **Esmail M. A. Mokheimer**, Proceedings of CHT-12, ICHMT International Symposium on Advances in Computational Heat Transfer, July 1-6, 2012, Bath, England, UK.
2. "A bi-level C⁺ Ion Embedment Approach for Surface Modification of Magnetic Media", **E. Rismani, M.Abdul Samad, S.K. Sinha, W.M. Kwek, H. Yang, C. S. Bhatia**, International Conference on Diamond and Carbon Materials (ICDCM 2012), 3-6 Sept, Granada, Spain (2012).
3. "Nonlinear Analysis of Electrically Actuated Carbon Nanotube Resonator using a Novel Discretization Technique", **Hattab, O., Ouakad, H.M., and Najar, F.**, the 2nd Saudi International Nanotechnology Conference 2012 (2SINC), Riyadh, November 11-13, 2012.
4. "Effect of CNT on the Mechanical Properties of Melt Spun PET/CNT Nanocomposite Fibers", **Furquan, S., Mezghani K., Farooqui M., Patel F. and Atieh M.**, 15th European Conference on Composite Materials (ECCM15), Venice, Italy, 24th – 28th June 2012, pp. 1-8.
5. "Effect of Two-Phase Flow On Flow Accelerated Corrosion (FAC) ", **Wael H.Ahmed, Mufatiu M. Bello, M. El Nakla, and A. Al-Sarkhi**, 23rd International Symposium on Transport Phenomena, Auckland, New Zealand, 19–22 November, 2012.
6. "Prognosis of Component Degradation under Uncertainty: A Method for Early Stage Design of a Complex Engineering System", **B.Y. Yu, T. Honda, G.M. Zak, A. Mitsos, J.H. Lienhard V, K. Mistry, S.M. Zubair, M.H. Sharqawy, M.A. Antar**, ASME 2012 11th biennial conference on engineering system design and analysis ESDA2012, Nantes, France, 2012.

Petroleum Engineering Department

1. A Novel Approach to Handle Continuous Wettability Alteration during Immiscible CO₂ Flooding Process," **Al-Mutairi, S.M., Abu-Khamsin, S.A., and Hossain, M.E.**, paper SPE 160638 presented at the 2012 Abu Dhabi International Petroleum Exhibition and Conference (ADIPEC), Abu Dhabi, UAE, November 11 – 14, 2012.
2. "Reservoir Parameter Estimation with Improved Particle Swarm Optimization", **Awotunde, A. A.**, Paper SPE 159470 presented at SPE Annual Technical Conference and Exhibition, San Antonio, Texas, October 8-10, 2012.
3. "Consideration of Voidage Replacement Ratio in Well Placement Optimization", **Awotunde, A. A. and Sibaweihi, N.**, Paper SPE 163354 presented at SPE Kuwait International Petroleum Conference and Exhibition, Kuwait City, Kuwait, December 10-12, 2012.
4. "Modeling of the Flow of Chelating Agents in Porous Media in Carbonate Reservoir Stimulation," **Mahmoud, M.A. and Nasr-El-Din, H.A.**, Paper SPE 150065 presented at the North Africa Technology Conference and Exhibition, Cairo, Egypt, 20-22 Feb., 2012.

5. "New Model to Predict Formation Damage due to Sulfur Deposition in Sour Gas Wells," **Mahmoud, M.A.** and **Al-Majed, A.A.**, Paper SPE 150065 presented at the North Africa Technology Conference and Exhibition, Cairo, Egypt, 20-22 Feb., 2012.
6. "Challenges during Shallow and Deep Carbonate Reservoirs Stimulation," **Mahmoud, M.A.**, and **Nasr-El-Din, H.A.**, Paper IPTC 14932 presented at the International Petroleum Technology Conference held in Bangkok, Thailand, 15-17 Feb., 2012.
7. "Stimulation of Sandstone and Carbonate Reservoirs Using Environmentally Friendly Chelating Agents," **Mahmoud, M.A.**, **Nasr-El-Din, H.A.**, and **De Wolf, C.A.**, Paper was presented at the Chemistry in Oil Industry XII: Innovative Chemistry-Value, Risks, and Rewards, 7th – 9th November, 2011, Manchester, UK.
8. "Removing Formation Damage and Stimulation of Deep Illitic-Sandstone Reservoirs Using Green Fluids," **Mahmoud, M.A.** and **Nasr-El-Din, H.A.**, Paper SPE 147395 presented at the 2011 ATCE, Denver, Colorado, 30 Oct – 2 Nov., 2011.
9. "Acid Diversion Using Viscoelastic Surfactants: The Effects of Flow Rate and Initial Permeability Contrast," **Al-Ghamdi, A.H.**, **Mahmoud, M.A.**, **Hill, A.D.**, and **Nasr-El-Din, A.H.**, Paper SPE 147395 presented at the 2011 ATCE, Denver, Colorado, 30 Oct – 2 Nov., 2011.

Aerospace Engineering Department

1. "Application of Back Propagation Neural Network Algorithms on Modeling Failure of B-737 Bleed Air System Valves in Desert Conditions," **Abdelrahman, W.G.**, **Al-Garni, A.Z.**, and **Al-Wadiee, W.**, Conference on Recent Advances in Aerospace Technology AEROTECH IV- 2012, Kuala Lumpur, Malaysia, 21-22 Nov. 2012.
2. "An Inverse Design Method for Aircraft Engine Sand Separator System," **Saeed, F.**, and **Al-Garni, A. Z.**, 38th European Rotorcraft Forum of the American Helicopter Society, Amsterdam, The Netherlands, 4-7 September 2012.
3. "Research and Application Based Space Education," **Alim Rüstem ASLAN**, **Rei KAWASHIMA**, **Mohammed Khalil Ibrahim**, 4th Nano-satellite Symposium, Nagoya, 10th-14th October 2012, Japan.

College of Sciences

Chemistry Department

1. Facile Synthesis of 3-(R)-benzyloxy-4-(S)-hydroxyfuran-1-one," **El-Batta, A.**, 38th Northeast Regional Meeting of the American Chemical Society, Rochester, USA, Sept. 30-October 3, 2012.

Earth Sciences Department

1. "Environmental Control on Shell Structure and Composition of Agglutinated Foraminifera in the Marmara Sea," **Armynot Du Chatelet, E., Bout-Roumazeilles, V., Coccioni, R., Frontalini, F., Guillot, F., Kaminski, M.A., Recourt, P., Riboulleau, A., Trentesaux, A., Tribovillard, N., and Ventalon, S.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 8.
2. "Petrography Applied to Micropaleontology: Some Techniques to Unravel the Internal Chamber Subdivision and Wall Microstructure of Agglutinated Foraminifera," **Basso, E., Mancin, N., and Kaminski, M.A.** in: **Alegret, L., Ortiz, S. and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 14-15.
3. "Bathymetric Distribution of Recent Agglutinated Foraminifera from a Transect in Saros Bay and Offshore Lesbos Island (Central Northern Aegean Sea)," **Frontalini, F., Kaminski, M.A., Coccioni, R., and Aksu, A.** in: **Alegret, L., Ortiz, S. and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 28.
4. "New Agglutinated Foraminifera, Including Multichambered Taxa, from the Middle Ordovician Hanadir Shale of Northern Saudi Arabia," **Ghazwani, A., Kaminski, M.A., and Babalola, L.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 32.
5. "A Molecular Comparison of *Entzia Tetrastomella* and *Jadammina Macrescens*," **Holzmann, M., Kaminski, M.A., Filipescu, S., and Pawlowski, J.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 42.
6. "New Trochamminids with Radially Elongated Chambers from the Paleozoic Black Shales of Saudi Arabia: An Adaptation for Survival in Dysoxic Environments?" **Kaminski, M.A.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 43-44.
7. "The New and Reinstated Genera of Agglutinated Foraminifera Published Between 2008 and 2012," **Kaminski, M.A.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, pp. 45-46.
8. "A 'Flysch-type' Agglutinated Foraminiferal Assemblage from the Lower Carboniferous Black Shales of Northern Saudi Arabia," **Kaminski, M.A., Hughes, G.W., and Hooker, N.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 47.

9. "Pliocene Dysoxic Agglutinated Foraminiferal Assemblages from IODP Hole 1341B in the Bering Sea: Initial Results from IODP Expedition 323," **Kaminski, M.A.**, and **Kender, S.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 48.
10. "Functional Morphology and Paleoecology of the Agglutinated Foraminiferal Genus *Colominella* Popescu, 1998 in the Mediterranean Pliocene (Liguria, Italy)," **Mancin, N., Basso, E., Pirini, C., and Kaminski, M.A.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 56-57.
11. "Palaeoenvironmental and Palaeogeographic Implications of Campanian Agglutinated Foraminifera from the Lomonosov Ridge (ACEX, IODP Expedition 302)," **Setoyama, E., Kaminski, M.A., and Tyszka, J.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, pp. 88-89.
12. "Palaeobiogeography of Late Cretaceous Agglutinated Foraminifera in the Arctic, Atlantic and Tethyan regions," Setoyama, E., **Kaminski, M.A., Tyszka, J., and Radmacher, W.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, pp. 90-91.
13. "The Life Cycle of *Entzia* (Foraminifera) in the Salt Marsh at Turda, Romania," Telespan A., **Kaminski, M.A., Balc, R., Filipescu, S., and Varga, I.** in: **Alegret, L., Ortiz, S., and Kaminski, M.A.** (eds.), Ninth International Workshop on Agglutinated Foraminifera. Grzybowski Foundation Special Publication, Vol. 18, September 2012, p. 94.
14. "The Application of Uncoupled Sensors to Seismic Exploration", **Poggiagliolmi, E., Vesnaver, A., Nieto, D., and Baradello, L.**, SEG/KOC Workshop on Global Single Sensor Acquisition, Kuwait City, 2012, 3-6 December 2012.
15. "Microtremor Analysis from Seismological to Engineering Scale", **Da Col, F., Baradello, L., Brunetti, F., Nieto, D., and Vesnaver, A.**, GNGTS Annual Meeting, Potenza, Italy, 2012.

Department of Mathematics & Statistics

1. "Nonlinear Abstract Fractional Differential Equations, 4th International Interdisciplinary Chaos Symposium on Chaos and Complex Systems", **Tatar, N-e.**, Istanbul Kultur University, Antalya, Turkey, April 29 to May 02, 2012.
2. "Neumann-boundary Stabilization of the Wave Equation with Damping Control and Applications" **Guesmia, A., and Chentouf, B.**, Uouari Boumediene University, Algiers, Algeria, November 26-29, 2012.

3. "Second Order Duality in Multi-objective Optimization Problems, 4th International Interdisciplinary Chaos Symposium on Chaos and Complex Systems", **Ahmad, I.**, Istanbul Kultur University, Antalya, Turkey, April 29 to May 02, 2012.
4. "Neumann-boundary Stabilization of the Wave Equation with Damping Control and Applications" **Guesmia, A., and Chentouf, B.**, Uouari Boumedience University, Algiers, Algeria, November 26-29, 2012.
5. "On A Porous Thermoelastic System", **Messaoudi, S.A.**, Third International Conference of the Moroccan Society of Applied Math. (SM2A), Marrakesh, Sept., 10–13, 2012.
6. "General Decay in Viscoelastic Equations", **Messaoudi, S.A.**, International Conference on Discrete Math and Computer Science, Dimacos, Beirut, Lebanon, 12 November 13-17, 2012.
7. "On Efficient Monitoring of Process Dispersion Using Interquartile Range", **Ahmad, S., Lin, Z., Abbasi, S. A., and Riaz, M.**, World Congress on Engineering and Technology (CET), Beijing, (2012).
8. "Stabilization of Hopfield Neural Network, Second Math Days", **Tatar, N-e.**, King Saud University, Riyadh, KSA, March 14-15, 2012.
9. "Multiobjective Programming Problem Involving B-(p,r)-Type I Functions," **Jayswal, A., Stancu-Minasian, I., and Ahmad, I.**, in Proceedings of the World Congress on Engineering 2012 Vol WCE 2012, July 4-6, 2012 London, U.K. ISBN: 978-988-19251-3-8, ISSN: 2078-0958 FREE 2078-0958 (Print), 2012, pp. 1-6.

Physics Department

1. "Raman Study of Localized Recrystallization of Amorphous Silicon Induced by Laser Beam" **N.Tabet , A. Al-Sayoud , S. Said, X. Yang, Y. Yang, E. Diallo, Z. Wang, X. Wang, E. Johlin, C. Simmons, and T. Buonassisi**, Conference Record of the IEEE Photovoltaic Specialists Conference, art. No. 6317637 , pp. 364-366.
2. "Photon Science for Renewable Energy", **Z. Hussain and N. Tabet**, Beam Injection Assessment of Microstructures in Semiconductors (BIAMS), Annaba, 25-28 June 2012, Algeria.
3. "Influence of Structural Phenomena on Time-of-Flight Hole Mobility in Hydrogenated Amorphous Silicon Thin Films" **E. Johlin, C.B. Simmons, N. Tabet, S. Said, J.C. Grossman, T. Buonassisi**, MRS Meeting, November 25 - 30, 2012, Boston, MA, USA.
4. "The Effect of the Schottky Nanocontact Depletion Region on the Electron Beam Induced Current" **N. Ounissi, M. Ledra and N Tabet**, BIAMS11, Annaba, 25-28 June 2012.
5. "Electron Beam Induced Current Collected from Amorphous Silicon Thin Film Containing an Array of Si-crystallized Microdots" **M. Ledra and N. Tabet**, BIAMS11, Annaba, 25-28 June 2012.

6. "Raman Study of Laser Induced Recrystallization of Amorphous Silicon Thin Films for Solar Cells" **N. Tabet, E. Johlin, C. Simmons, Wang X, Yang, X, S. Said and T. Buonassisi**, Beam Injection Assessment of Microstructures in Semiconductors (BIAMS), Annaba, 25-28 June 2012, Algeria.
7. "Laser Processing for Crystalline Silicon Photovoltaics: An Enabler for Low-Cost, High-Efficiency Solar Cell Manufacturing" **M.T. Winkler, C.B. Simmons, J.T. Sullivan, R. Brandt, D. Recht, E. Ertekin, N. Tabet, E. Mazur, M. Mendes, S. Hegedus, J.C. Grossman, M.J. Aziz, and T. Buonassisi**, Invited talk, SPIE Optics+Photonics conference San Diego, USA, 12-16 August 2012.
8. "Surface Nanostructuring of LiNbO_3 by High-Density Electronic Excitations", **A.S.El-Said**, 16th International Workshop on Inelastic Ion-Surface Collisions (IISC-19), 16 – 21 September 2012, Fraunchiemsee, Germany.
9. "Creation of Surface Nanostructures in Al_2O_3 by Slow Highly Charged Ions", **A.S.El-Said**, 25th International Conference on Atomic Collisions in Solids (ICACS), 18-23 July 2012, kyoto, Japan.
10. "Synthesis Of Titania-Silica Nanoparticles for Enhanced CO_2 Conversion Photocatalytic Activity", **M. A. Ali, M.A. Gondal, M. Rashid and M.A. Dastageer**, The Saudi International Nanotechnologies Conference, 1—13 November, 2012, Riyadh.
11. "Synthesis and Characterization Of Metal Oxides (Al_2O_3 , CuO) Nanoparticles Using Pulsed Laser Ablation Technique", **M.A. Gondal, T.F. Qahtan M.A. Dastageer**, The Saudi International Nanotechnologies Conference, 1—13 NOVEMBER, 2012, RIYADH.
12. "Laser Based Advanced Technique For Synthesis of Nano Materials", **M. A. Gondal**, The 6th Vacuum and Surface Science Conference of Asia and Australia (VASSCAA-6), 9-13 October, 2012, Islamabad.
13. "A Study of Morphology and Optical Properties of Nano Engineered (Au/Cu/TiO_2) Composites IEEE Proceedings", **M.A.Gondal, S.G.Rashid, M.A. Dastageer, S. M.Zubair, M. A. Ali, J.H. Lienhard, G.H. McKinley, K.K.Varanasi**, 9th International Conference on High-Capacity Optical Networks and Emerging Technologies, HONET, Istanbul (11-13 Decemebr, 2012).
14. "Photoluminescence Studies of Pure and Silver Doped Cadmium Sulfide Quantum Dots: Potential Candidate for Fabrication of Laser Diodes", **M.A. Gondal and M.A. Dastageer**, proceedings of 13th International symposium on the Science and Technology of Lighting, Troy, New York, USA, June 24-29, 2012.
15. "Electron-spin Excitation Coupling in an Electron-doped Copper Oxide Superconductor" **Shankar Kunwar, Jun Zhao, F. C. Niestemski, Shiliang Li, P. Steffens, A. Hiess, H. J. Kang, Stephen D. Wilson, Ziqiang Wang, Pengcheng Dai, & V. Madhavan**, Research paper presented in M2S superconductivity conference, Washington DC (from July 29 to Aug 04, 2012).
16. "Highly Validated Atmospheric Water Vapor Vertical Profiles using Raman Lidar Technique", **Watheq Al-Basheer and Kevin Strawbridge**, SPIE Proceedings, 8517 (6 pages), Laser Communication and propagation through the atmosphere and Oceans, San Diego, California, USA, Aug 12-16 (2012).

17. "Simultaneous Water Vapor and Aerosol Lidar Measurements at Environment Canada's Center for Atmospheric Research Experiments" **Kevin Strawbridge** and **Watheq Al-Basheer**, Proceedings of 26th International Laser Radar Conference (ILRC), S70-03 (4 pages), Porto Heli, Greece (2012).

College of Industrial Management

Department of Accounting & MIS

1. "A Learning System for Entity Relationship Modeling," **Mustafa, I., Eid**, Proceedings of the 16th Pacific Asia Conference on Information Systems (PACIS 2012) Ho Chi Minh, Vietnam, July 12-15, 2012, Page 89.
2. "An Enquiry into the Responsiveness of Corporate Profitability to Corporate Governance Mechanism – Evidences from Malaysian GLCs", **Talha, M., Abdullah & Shukor**, Paper presented in 24th Asian Pacific Conference on International Accounting Issues held in Maui, Hawaii, USA October 21 – 23, 2012. The full length of paper has also published in conference Proceedings.
3. "The Deployment of MIS in Developing Countries", **Alwahaishi, S., Snasel, V.**, Proceedings of the Digital Information Processing and Communications (ICDIPC), Second International Conference on , July 2012, pp.180-184.

College of Environmental Design

Department of Architecture

1. Adoption of Contemporary Earth Construction in Africa Alleviating Urban Housing Crisis", **Zami, M.S., Babsail, M.O.** (2012). LEHM 2012 - 6th International Conference on Building with Earth, 5-7 October, Weimar, Germany. Organized by LEHM 2012 Project Team Dachverband Lehm e.V. http://www.dachverband-lehm.de/lehm2012/index_en.html
2. "Extent of Commercial use of Stabilized Earth Construction Alleviating Urban Housing Crisis in Africa", **Zami, M.S., and Babsail, M. O.** (2012). Fifth International Conference on Appropriate Technology, November 20-24, 2012, Pretoria, South Africa. Organized by the Department of Science and Technology Republic of South Africa, University of Pretoria, University of Johannesburg, Tshwane University of Technology, Kara Heritage Institute, International Network on Appropriate Technology, Howard University, Washington DC, USA, National Technical Association (NTA) and the Northern California Council of Black Professional Engineers (NCCBPE), Oakland, California. <http://www.appropriatetech.net/>
3. "Enhancing the Importance of Conservation of Architectural Heritage in Saudi Arabia: A Case Study of Dhahran Mosque", **Zami, M.S., and Bubshait, A.A.**, (2012). 3rd International Architectural Conservation Conference and Exhibition, 17-19 December 2012, Dubai. Organized by Turret Media. Host: Dubai Municipality, Government of Dubai, UAE. <http://www.architecturalconservation.info/About>

College of Applied & Supporting Studies

General Studies Department

1. "Motivation for Volunteerism in the Kingdom of Saudi Arabia." **A. Bendania, A. Al Dini, S. and Garri, C.**, Paper presented at 10th ISTR Conference: Siena University, Siena: Italy: 10-13 July 2012.
2. "Building Trust in a Counterinsurgency Context." **Combs, D. & Aldamer, S. and Garris, C.**, Paper presented at the 4th International Conference on Applied Human Factors and Ergonomics. San Francisco CA: 21-25 July 2012.

College of Computer Sciences & Engineering

Information & Computer Science Department

1. "Towards a Multi-view Approach to Model-driven Refactoring", **Misbhauddin, M. and Alshayeb, M.**, The 2012 African Conference on Software Engineering and Applied Computing (ACSEAC), Gaborone, Botswana, September 24-26, 2012.
2. "Model-driven Refactoring Approaches: A Comparison Criteria", **Misbhauddin, M. and Alshayeb, M.**, the 2012 African Conference on Software Engineering and Applied Computing (ACSEAC), Gaborone, Botswana, September 24-26, 2012.
3. "Analysis and Extraction of Sentence-Level Paraphrase Sub-Corpus in CS Education", **Alvi, F., El-Alfy, E.-S. M., Al-Khatib, W. G. and R. E. Abdel-Aal**, ACM Conference on Information Technology Education, Calgary, Canada, (ACM SIGITE 2012), October 2012, pp49-54.
4. "TD (Lambda) and Q-Learning based Ludo Players", **Alhajry, M., Alvi, M. and M. Ahmed**, 2012 IEEE Conference on Computational Intelligence and Games (CIG 2012), Granada, Spain, Sep 2012, pp83-90.
5. "Abductive Neural Network Modeling for Hand Recognition Using Geometric Features," **El-Alfy, E.-S. M., Abdel-Aal, R. E., & Baig, Z. A.**, In: T. Huang et al. (Eds.): Lecture Notes on Computer Science, LNCS 7666, Part IV, pp. 593--602. Springer, Heidelberg (2012). Also presented at the 19th International Conference on Neural Information Processing (ICONIP2012), Doha, Qatar, Nov. 12 - 15, 2012.
6. "Fusion of Multiple Texture Representations for Palmprint Recognition Using Neural Networks," **BinMakhashen, G. M., El-Alfy, E.-S. M.**, In: T. Huang et al. (Eds.): Lecture Notes on Computer Science, LNCS 7667, Part V, pp. 410--417. Springer, Heidelberg (2012). Also presented at the 19th International Conference on Neural Information Processing (ICONIP2012), Doha, Qatar Nov. 12 - 15, 2012.
7. "Framework for Automatic Recognition of Emotional States in Arabic Speech Dialogs," **El-Alfy, E.-S. M., Khalil, A., Al-Khatib, and W., Cheded, L.**, Presented at the 5th Virtual Workshop on Computer Science and Engineering (in Arabic): Intelligent Computing Systems and Applications, Sept. 2012.

8. "Hand and Palmprint Biometrics and Their Role in Personal Recognition and Authentication," **El-Alfy, E.-S. M., BinMakhashen, G. M.,** Presented at the 5th Virtual Workshop on Computer Science and Engineering (in Arabic): Intelligent Computing Systems and Applications, Sept. 2012.
9. "Towards Glue-Code Specification Framework for Component-Based Systems", **Mahmood S. and Al-Qadhi, M. A.,** Proceedings of the Seventh International Conference on Software Engineering Advances (ICSEA 2012), pp. 577 – 580, 2012.
10. "A Degree Centrality-Based Approach to Prioritize Interactions of Component-Based Systems", **Mahmood, S. and Khan, M. A.,** Proceedings of International Conference on Computer and Information Sciences (ICCIS 2012), pp. 863 – 867, IEEE Computer Society, 2012.
11. "Towards Requirements Analysis and Assessment of Pervasive Systems", **Mahmood, S., Al-Barrak, A. M., and Al-Mulhem, M.,** Lecture Notes in Engineering and Computer Science 2198, pp. 842 – 844, 2012.
12. "A Systematic Review on the Impact of CK Metrics on the Functional Correctness of Object-Oriented Classes," **Khan, Y., Elish, M. and El-Attar, M.,** 3rd International Workshop on Software Quality, ICCSA 2012, Part IV, LNCS 7336, Salvador de Bahia, Brazil, 2012, pp. 258–273.
13. "KHATT: Arabic Offline Handwritten Text Database", **Mahmoud, S. A., Ahmad, I., Alshayeb, M., Al-Khatib, W. G., and Parvez, M. T.,** the International Conference on Frontiers in Handwriting Recognition (ICFHR), G. A. Fink, V. Märgner, and H. El-Abed (Eds), September 18-20, 2012, Italy.
14. "Arabic Bank Check Analysis and Zones Extraction", **Ahmad, I., and Mahmoud, S.A.,** ICIAR 2012 International Conference on Image Analysis and Recognition, Portugal, Lecture Notes in Computer Science, 2012, Vol. 7324, pp. 141-148.
15. "An Empirical Study Identifying High Perceived Value Requirements Engineering Practices in Global Software Development Projects," **Niazi, M., El-Attar, M., Usman, M., and Ikram, N.,** Seventh International Conference on Software Engineering Advances (ICSEA 2012), November 18-23, 2012 - Lisbon, Portugal.
16. "An Empirical Evaluation and Improvement of the Item Balancing Algorithm in P2P Systems," **T. Helmy and A. Al-Herz,** IEEE Proceedings of 8th International Conference on Computing Technology and Information Management, Vol. 1 NCM Track, ISBN: 978-89-88678-67-1, PP. 35-40, Seoul, Korea April 24-26, 2012.
17. "Sentiment Analysis of Health and Nutrition Tweets using Support Vector Machines," **Helmy, T.,** IEEE Proceedings of the 3rd International Conference on Internet Technology and Applications (ITAP 2012), August 2012, China, PP. 275-281.
18. "Multilingual Food and Health Ontology Learning Using Semi-Structured and Structured Web Data Sources," **Albukhitan, S. and Helmy, T.,** ACM/IEEE proceedings of the Joint International Conference on Web Intelligence/Intelligent Agent Technology, December 4-7, 2012, PP. 231-235.

19. "Toward a Cross-Cultural and Cross-Language Multi-Agent Recommendation Model for Food and Nutrition," **A. Al-Nazer and T. Helmy**, ACM/IEEE proceedings of the Joint International Conference on Web Intelligence/Intelligent Agent Technology, December 4-7, 2012, PP. 245-250.
20. "A New Multidimensional Storage Structure", **Musleh D., Mohammed S., and Al-Mulhem M.**, 4th International Conference on Computer Engineering and Technology (ICCET 2012), May 27-28, 2012, Phuket, Thailand.
21. "Siblings Labeling Scheme for Updating XML trees Dynamically", **Al-Jamimi H., Barradah A. and Mohammed S.**, 4th International Conference on Computer Engineering and Technology (ICCET 2012), May 27-28, 2012, Phuket, Thailand.
22. "An Empirical Evaluation and Improvement of the Item Balancing Algorithm in P2P Systems", **Helmy, T. and Al-Herz, T.**, IEEE Proceedings of 8th International Conference on Computing Technology and Information Management, Vol. 1 NCM Track, ISBN: 978-89-88678-67-1, PP. 35-40, Seoul, Korea April 24-26, 2012.
23. "Building an Annotated Corpus and Detection of Anger in Arabic Speech Dialogs," **Khalil, A. A., Al-Khatib, W. G., Cheded, L. and El-Alfy, E.-S. M.**, Proceedings of the 4th International Conference on Arabic Language Processing, Rabat, Morocco, May 2-3, 2012.
24. "Automatic Identification Based on Hand Geometry and Probabilistic Neural Networks," **El-Alfy, E.-S. M.**, Proceedings of the Fifth IEEE/IFIP International Conference on New Technologies, Mobility and Security (NTMS 2012), Istanbul, Turkey, May 7-10, 2012.
25. "High-Capacity Image Steganography Based on Overlapped Pixel Differences and Modulus Function," **El-Alfy, E.-S. M. and Al-Sadi, A.**, Proceedings of the Fourth International Conference on Networked Digital Technologies (NDT 2012), UAE, 2012. Also published in Communications in Computer and Information Science (CCIS 7899) Series of Springer LNCS.
26. "Improved Personal Identification Using Face and Hand Geometry Fusion and Support Vector Machines," **El-Alfy, E.-S. M. and BinMakhashen, G. M.**, Proceedings of the Fourth International Conference on Networked Digital Technologies (NDT 2012), UAE, 2012. Also published in the Communications in Computer and Information Science (CCIS 7899) Series of Springer LNCS.
27. "Evaluation of Support Vector Machine with Universal Kernel for Hand-Geometry Based Identification," **El-Alfy, E.-S. M. and BinMakhashen, G. M.**, Proceedings of the 8th International Conference on Innovations in Information Technology (IIT'12), Al-Ain, UAE, March 2012.
28. "Improved Pixel Value Differencing Steganography Using Logistic Chaotic Maps," **El-Alfy, E.-S. M. and Al-Sadi, A.**, Proceedings of the 8th International Conference on Innovations in Information Technology (IIT'12), Al-Ain, UAE, March 2012.

29. "Pixel-Value Differencing Steganography: Attacks and Improvements," **El-Alfy, E.-S.M. and Al-Sadi, A.**, Proceedings of International Conference on Computing and Information Technology (ICCIT2012), Taibah University, Al-Madinah, Saudi Arabia, March 12-14, 2012.
30. "Security Improvement of PVD Steganographic Method against Histogram Attack," **Al-Sadi, A., and El-Alfy, E.-S. M.**, 3rd Saudi Scientific Conference for Students of High Education, Al-Kbobar, Saudi Arabia, April 30-May 3, 2012.
31. "High-Capacity Steganographic Scheme Based on Overlapping PVD Method," **Al-Sadi, A., and El-Alfy, E.-S. M.**, 3rd Saudi Scientific Conference for Students of High Education, Al-Kbobar, Saudi Arabia, April 30-May 3, 2012.
32. "Performance Evaluation of Delay-Sensitive Services over the Internet Using Multipath Routing," **El-Alfy, E.-S. M.**, Proceedings of International Conference on Computing and Information Technology (ICCIT2012), Taibah University, Al-Madinah, Saudi Arabia, March 12-14, 2012.
33. "Using Radial-Basis Function Networks and Ring-edge Energy Features for Automatic Classification of Deformable Geometric Shapes," **El-Alfy, E.-S. M.**, Proceedings of the 4th International Conference on Agents and Artificial Intelligence (ICAART 2012), Portugal, Feb. 6-8, 2012.
34. "Systematic Literature Reviews in Global Software Development: A Tertiary Study", **Verner, J. M., Brereton, O. P., Kitchenham, B. A., Turner, M. and Niazi, M.**, International Conference on Evaluation & Assessment in Software Engineering (EASE 2012) Spain, May 2012.
35. "Causes of Requirement Change – A Systematic Literature Review", **Bano, M. Imtiaz, M., Ikram, N., Niazi, M., and Usman, M.**, International Conference on Evaluation & Assessment in Software Engineering (EASE 2012), Spain. May 2012.
36. "GlobReq: A Framework for Improving Requirements Engineering in Global Software Development Projects: Preliminary Results", **Niazi, M. El-Attar, M., Usman, M. and Ikram, N.**, International Conference on Evaluation & Assessment in Software Engineering (EASE 2012) Spain. May 2012.
37. "Critical Challenges in Offshore Software Development Outsourcing: An Empirical Study", **Khan S. and Niazi, M.**, International IASTED Conference on Software Engineering SE 2012, June 2012 Greece.
38. "Are Use Case Modeling Features Underutilized? A Lightweight Survey That Raises Concerns," **Alsaleh, M., El-Attar, M. , M. Niazi, and Halawani, K.**, 7th International Conference on Evaluation of Novel Approaches to Software Engineering, Wroclaw, Poland. 2012.
39. "A Systematic Review on the Impact of CK Metrics on the Functional Correctness of Object-Oriented Classes", **Khan, Y., Elish, M., and El-Attar, M.**, 12th International Conference on Computational Science and Applications, Salvador de Bahia, Brazil. 2012.

Computer Engineering Department

1. "Exploration of Automatic Optimization for CUDA Programming", **Mayez A. Al-Mouhamed and Ayaz Khan**, 2nd IEEE International Conference on Parallel, Distributed and Grid Computing, Jaypee University of Information Technology (IEEE-PDGC), Himachal Pradesh, India, 6 December 2012. This paper has been selected as the "Second Best IEEE-PDGC-2012 Conference Paper" out of 605 paper submissions.
2. "Bank Conflict-Free Access for CUDA-Based Matrix Transpose Algorithm on GPUs", **M. Assayony, A. Khan, and M. Al-Mouhamed**, Accepted in the International Conference on Computer Applications Technology (ICCAT'2013), 22 January, 2013.
3. "Exploration of Automatic Optimization for CUDA Programming", **Mayez A. Al-Mouhamed and Ayaz Khan**, "Conflict-Free Access for CUDA-Based Matrix Transpose Algorithm on GPUs", The Saudi Arabian High Performance Computing Users' Group Conference at KAUST, Thuwal, 1-3 December, 2012.
4. "Fuzzy-based Optimization for Effective Detection of Smart Grid Cyber-Attacks," **Ahmad, S. and Baig, Z. A.**, in Proceedings of the 2nd International Conference on Smart Grid and Clean Energy Technologies (ICSGCE), Hong Kong, October, 2012.
5. "Abductive Neural Network Modeling for Hand Recognition Using Geometric Features," **El-Alfy, E., Abdel-Aal, R. and Baig, Z. A.**, in Proceedings of the 19th International Conference on Neural Information Processing (ICONIP2012), Doha, Qatar, November, 2012.
6. "UCloud: A Simulated Hybrid Cloud for A University Environment", **Mohammed H. Sqalli, Mohammed Al-saeedi, FaridBinbeshr, and Mohammed Siddiqui**, the 1st IEEE International Conference on Cloud Networking (IEEE CLOUDNET 2012), Paris, France, November 28-30, 2012.
7. "Bank Conflict-Free Access for CUDA-Based Matrix Transpose Algorithm on GPUs", **A. Baqais, M. Assayony, A. Khan, and M. Al-Mouhamed**, Poster Presentation, KAUST, Thuwal, 1-3 December, 2012.
8. "Exploration of Automatic Optimization for CUDA Programming ", **Mayez A. Al-Mouhamed and Ayaz Khan**, Poster Presentation, KAUST, Thuwal, 1-3 December 2012.
9. "Experimental Analysis of SMP Scalability in the Presence of Coherence Traffic and Snoop Filtering", **Mayez A. Al-Mouhamed**, Invited presentation at Poster Presentation, KAUST, Thuwal, 1-3 December, 2012.

Systems Engineering Department

1. "Integer Programming Model and Optimum Solution for a Bi-objective Days-off Scheduling Problem," **H.K. Alfares** The 21st International Symposium on Mathematical Programming (ISMP 2012), August 19-24, 2012, Berlin, Germany.
2. "Production-inventory System with Finite Production Rate, Stock-dependent Demand and Variable Holding Cost", **H. Alfares**. The 17th International Symposium on Inventories, (ISIR 2012), August 20-24, 2012, Budapest, Hungary.
3. "An Efficient Algorithm for Solving Cyclic Combinatorial Optimization Problems (Keynote Presentation), **H.K. Alfares**, International Conference on Distributed Systems and Decision 2012: ICDSD'12, 21 - 22 November 2012, Oran, Algeria.
4. "Economic Production Quantity Model with Imperfect Quality during a Process Adjustment Period," **Al-Me'raj, I., Shokri Z., Çinar., Y.**, Proceedings of The IEEE International Conference on Industrial Engineering and Engineering Management (IEEM), December 2012, pp. 1608- 1611.
5. "A Minimum Spanning Tree (MST) Based Heuristic for Clustering High throughput Biological Data", **Harun Pirim**, Abstract Proceedings of INFORMS, Phoenix, AR, USA, October 2012, pp. 414.
6. "Ensemble Clustering for Biological Datasets", **Harun Pirim**, Şadi E. Şeker, Bioinformatics, Chapter 13, INTECH, Croatia, November 2012, pp. 287-298.
7. "Prediction of Rate of Penetration Using Advances in Neural Networks, A Comprehensive Methodology", **I. Al-Arfaj, A. Khoukhi**, European Modeling Conference, Malta, Nov. 12-15, 2012.
8. "Prediction of Rate of Penetration Using Advances in Neural Networks, a Comparative Study", **A. Khoukhi I. Al-Arfaj** Int'l Conference on Neural Networks and Applications, Barcelona Spain, Oct. 5-7 2012.
9. "Minimizing the Tardiness in a Single Machine Batch Processing", **F. Al-Ghamdi, M. AlKhaldi, A. Khoukhi and M. Al-Slamah** Int'l Conf. on Ind. Eng. and Operations Management (IEOM 12). Istanbul, Turkey, July 3-6, 2012.
10. "ANFIS Based-Kinematic Modeling of Mobile Parallel Robot," **A. Khoukhi, M. Hamdan, F. Al-Sunni** UKSim, pp.242-247, 2012 UKSim 14th International Conference on Modeling and Simulation, 2012
11. "Fault Diagnosis of a Sensor Network" R. Doraiswami and **L. Cheded**, the 11th Int'l Conf. on Information Science, Signal Processing and their Applications (ISSPA 2012), 3-5 July, 2012, Montreal (Quebec), Canada.
12. "Robust Fault-Tolerant Controller Design" **R. Doraiswami and L. Cheded**. IEEE Industrial Electronics Conference (IECON 2012), Montreal 25-28 Oct. 2012, Canada.

13. "Framework for Automatic Recognition of Emotional States in Arabic Speech Dialogs" (In Arabic)." **Ashraf A. Khalil, Wasfi G. Al-Khatib, L. Cheded and El-Sayed M. ElAlfy**, 5th International Virtual Workshop on Intelligent Computing Systems and Applications, organized by the Arab Computer Society, September, 10-11, 2012.
14. "Improved Controller Design for Turbocharged Diesel Engine", **Magdi S. Mahmoud**, Proceedings of the 2012WorldCongress on Engineering, Conference of Manufacturing Engineering and Engineering Management- Vol. III, London, UK, July 4-6, 2012, pp. 1465-1469.
15. "A Comparison of Identification Methods of Hydraulic Pumping Systems", **Magdi S. Mahmoud**, Proceedings of the16th IFAC Symposium on Systems Identification (SYSISD 2012), Brussels, Belgium, July 10-13, 2012, pp. 662-667.
16. "Signalized Traffic Intersections Control with Uncertainties Over Lossy Networks", **Magdi Mahmoud, Faisal Al-Nasser and Fouad Al-Sunni** Proceedings of the 4th International Conference on Soft Computing and Pattern Recognition (SoCPaR 2012), December 12-14, 2012 Brunei Darussalam. pp. 1-12.
17. "Digital Control of a Reverse Osmosis Plant", **Magdi Mahmoud** Proceedings of the ASME 2012 International Mechanical Engineering Congress& Exposition, Houston, Texas, USA, November 9-15, 2012, paper IMECE2012-85101.

Entries received from the Centers for Research Excellence

Center for Research Excellence in Nanotechnology

1. "The Effect of the Dielectric Constant of Zeolite Precursors on the Morphology of MFI Zeolite Membranes in Microwave-assisted Hydrothermal Synthesis," **Baroud, T.N.M., Muraza, O., Patel, F., Wang, E. and Laoui, T.**, International Symposium on Zeolites and Microporous Crystals (ZMPC 2012), Hiroshima, Japan, July 28 - August 1, 2012.
2. "Size Control and Rapid Synthesis of TON Zeolite by Microwave Irradiation, A.Adedigba," **Muraza, O., Bakare, I., Tago, T., Nandiyanto, A.B.D., Konno, H., Yamani, Z.H. and Masuda, T.**, International Symposium on Zeolites and MicroPorous Crystals (ZMPC 2012), Hiroshima, Japan, July 28 - August 1, 2012.
3. "Nanocarbon Grown on 3D Foams by Catalytic Methane Decomposition for Application as Structured Catalysts," **Purwanto, W.W., Wulan, P.P.D.K., Muraza, O., Kooyman, P.J., Celebi, S. and Yamani, Z.H.**, International Symposium on Chemical Reaction Engineering (ISCRE 22), Maastricht, NL, September 2-5, 2012.
4. "Controlled and Rapid Growth of MTT Zeolite Crystals with Low-aspect-ratio in a Microwave Reactor," **Muraza, O., Bakare, I., Adedigba, A., Tago, T., Al-Amer, A.M. Yamani, Z.H. and Masuda, T.**, International Symposium on Chemical Reaction Engineering (ISCRE 22), Maastricht, NL, September 2-5, 2012.

5. "Fabrication of Submicron TON Zeolites via Microemulsion-assisted Synthesis: Towards Efficient 1-D Pore System," **Muraza, O., Tago, T., Fujiwara, S., Konno, H., Okamura, T., Nakasaka, Y. and Masuda, T.,** International Symposium on Chemical Reaction Engineering (ISCRE 22), Maastricht, NL, September 2-5, 2012.
6. "Cathode Mechanisms in the Polymer Electrolyte Fuel Cells (PEMFCs)," **Merzougui, B.,** 2nd Saudi International Nanotechnology Conference, Riyadh, Saudi Arabia, November 11-13, 2012.
7. "A Pt-free Catalyst based on Metal-nitride-carbide Nanocomposites for Oxygen Reduction Reaction (ORR)," **Hachimi, A., Merzougui, B., Hakeem, A., Akeem, A. and Saheed, B.,** 2nd Saudi International Nanotechnology Conference, Riyadh, Saudi Arabia, November 11-13, 2012.

Center for Research Excellence in Refining and Petrochemicals

1. "Oxidative Dehydrogenation of Propane over High Selective Molybdenum Vanadium Oxide Catalysts", **Ahmed, S., F. Rahman, H. Al-Asiri and A.M. Al-Amer.** Prepr. Pap.-Am. Soc., Div. Pet. Chem. Vol. 57; no. 1; 2012, pp. 289-290.
2. "Synthesis and Catalytic Performance of Novel Ni Supported Periodic Mesoporous MCM-41 Silica and Hierarchical Structured Beta Zeolited for Upgrading Light Cycle Oil via Selective Ring Opening; A Hydrogenation of Polynuclear Aromatics", **Al-Yassir, N. Al-Yami M. and Al-Rasheedi, M.** Prepr. Pap.-Am. Soc., Div. Pet. Chem., Vol. 57; no. 1; 2012, pp. 130-132.
3. "Ethylene-1-hexene Copolymerization: New Perspective Through Modeling of Supported Catalyst Active Center Distribution and Microstructure Characterization", **M. Atiqullah.** 22nd Saudi-Japanese Catalyst Symposium. King Fahd University of Petroleum & Minerals. Dhahran, November 25-26, 2012.
4. "M-xylene Isomerization over ZSM-5/MCM-41 Composites with Adjustable Porosity" **R.J. Balasamy, W. Alabi, M. N. Akhtar, S. Al-Khattaf,** 15th International Congress on Catalysis, 2012, Munich, Germany, July 1-6, 2012.
5. "Center of Research Excellence in Petroleum Refining & Petrochemicals", **M.N. Akhtar,** 1st Kyoto University and Saudi Universities Research Collaboration Workshop, Kyoto, Japan, Nov. 7-8, 2012.

10. BOOKS PUBLISHED AND CONTRIBUTIONS

Chemical Engineering Department

1. “Computer Simulations: Technology, Industrial Applications and Effects on Learning, Computation of Residue Curves using Mathematica and MATLAB, **Housam Binous**, Nova Publishers, 2012.

Electrical Engineering Department

1. “Principles of Transmission and Detection of Digital Signals”, **A.U.H. Sheikh**, Digital Communications, Chapter 1, pp.1-28, In Tech Open Access Publishers, University Campus STeP Ri, Slavka Krautzeka 83/A 51000 Rijeka, Croatia, 2012. ISBN 979-953-307-545-6, 2012. <http://www.intechweb.org/booksprocess/index/chapter/66848>, 2012.
2. “Spectrum Access and Sharing for Cognitive Radio”, **U. Raza** and **A.U.H. Sheikh**, Developments in wireless network prototyping, design and deployment: Future generations, Chapter 12, pp. 241-27, IIGI Global, 2012.

Mechanical Engineering Department

1. “Nuclear Power-Practical Aspects”, Editor: **Wael H. Ahmed**, ISBN 978-953-51-0778-1, InTech publishing, 2012.

Information & Computer Science Department

1. “Printed Arabic Text Recognition”, **Ahmed, I., Mahmoud, S.A., and Parvez, M.T.**, Guide to OCR for Arabic Scripts, Märgner, Volker; El Abed, Haikal (Eds.), 2012, XXVIII, Springer.

2. أساسيات أمن الشبكات: معايير وتطبيقات. السيد الألفي،
رضوان عبد العال، علاء الدين أمين،

2012. (Arabic translation of “Essentials of Network Security: Applications and Standards” by W. Stallings)

Monographs

1. S. M. Thampi, E.-S. M. El-Alfy, J. Aguiar (Eds.) ACM Proceedings of the International Conference on Advances in Computing, Communications and Informatics, (ICACCI'12), 2012.
2. S. Zhioua, Stochastic Systems Divergence through Reinforcement Learning: How to use artificial intelligence to validate stochastic systems. First Edition, ISBN: 3847339710, February 2012, LAP Lambert.
3. M. Niazi and D. Budgen (Editors), Special section on the selected papers from the 15th International Conference on Evaluation and Assessment in Software Engineering, IET Software Journal 6(3), (2012).

4. M. Niazi, N. Cerpa and V. Casey (Editors), Management of Global Software Development: Opportunities, Challenges and Lessons Learned, IET Software Journal, 6(3), 165-282, 2012.

Systems Engineering Department

1. “Advanced Discrete Time Systems”, **Magdi S. Mahmoud** (Editor), InTech Open Access Publishers, Europe, 2012.
2. “Robust Wireless Sensors Network Application: A Decentralized Approach for Traffic Control and Management” **Faisal A. Al-Nasser** and **Magdi S. Mahmoud**, Chapter 16 in the book Wireless Sensor Networks – Technology and Applications, July 2012, InTech Open Access Publishers, pp. 347-374.

Earth Sciences Department

1. Cretaceous to Paleogene Hemipelagic and Flysch Successions in Western Pyrenees, Northern Spain. **Ortiz, S., Alegret, L., Baceta, J.I., Kaminski, M.A. and Payros, A.** Servicio de Publicaciones de Zargoza, September 2012, 82 pp.

Department of Architecture

1. “Architecture and the City: Mega Events, Spatial Interventions and Housing Policies”, Chapter 6: The Potential of Widespread Adoption of Contemporary Earth Construction in South Africa: An Alternative Solution to Urban Housing Crisis, **by Zami, M.S.** (2012), Edited by Ambrose A. Adebayo, Published by the University of Kwa Zulu Natal, Durban, South Africa, ISBN # 978-0-620-54078-0.

Architectural Engineering Department

1. “On the Applications of Ranking Systems for Facilities Fire Risk Assessment, **Abdul Hafeez, M., and Hassanain, M.A.,** Construction Project Management Research Compendium, Edited by F. M. Arain Chapter 5, Vol. 1, 2012, Nova Science Publishers, USA, ISBN: 978-1-62081-925-8.

Accounting & MIS Department

1. “Corporate Disclosure and Reporting Practices in the Gulf Cooperation Council (GCC) Countries”, in The GCC Economies: Stepping Up to Future Challenges. **Haider Madani** (2012), Editor: Mohamed Ramady, Springer Science and Business Media, NY, USA. (Project # IN000248)

11. TECHNICAL REPORTS, FUNDED PROJECTS AND PATENTS

College of Engineering

Electrical Engineering

1. “Physically Motivated Wideband Channel Characterization”, **A. U. H. Sheikh**, Final Report submitted to SNTIP, Project 08-ELE-04-42, August 2012.
2. “Tagged User Analysis for Access Protocols for FU-FB over Frequency Selective Fading”, **A. U. H. Sheikh**, Final Report submitted to DSR Project IN100011, August 2012.
3. “A Blind Strategy over Adaptive Sensor Networks”, **A. Zerguine** and **S. Zummo**, Final Report, SABIC SB101024, August, 2012.
4. “Robust State Estimation and Monitoring of Power System Smart Grids”, **I.O. Habiballah**, Sabbatical Final Report, September 2012.
5. “Bandwidth and Power Scalable Behavioural Models and Digital Predistorters for 3G+ Base Station transmitters (FT#100033)”, **O. Hammi**, Technical Final Report submitted to Deanship of Research, King Fahd University of Petroleum and Minerals, August 2012.

Patent

1. “Optimal Power Allocation Method for an LSSTC Wireless Transmission System”, **Ahmad Salim, Salam Zummo** and **Samir Al-Ghadban**, U.S. Patent and Trademark Office (USPTO), Patent Number: U.S. 8219138, Issued, July 2012.

Mechanical Engineering

Technical Report

1. “Experimental Measurements of Seawater Thermal Conductivity”, **M.H. Sharqawy**, Deanship of Research, KFUPM, Report # JF101005, Junior Faculty Research Grant, August 2012.

Patent

1. “Multi-Stage Bubble Column Dehumidifier for Cost Effective Humidification Dehumidification Desalination Systems”, **P.G. Narayan, J.H. Lienhard V, R.K. McGovern, M.H. Sharqawy, G.T. Parker**, 2012.

College of Sciences

Earth Sciences Department

Letters, Notes and Short Communications

1. “The Grzybowski Foundation: A Note from the Chairman’s desk,” **Kaminski, M.A.** The Newsletter of Micropalaeontology, 2012, Vol. 84, pp. 34-36.
2. “Thirty years of Forams,” **Kaminski, M.A.** The Newsletter of Micropalaeontology, 2012, Vol. 84, pp. 36-37.

Department of Mathematics & StatisticsTechnical Reports:

1. “On Some Applications of Complex Numbers to Polar Equations and Cycloidal Curves” **Azad, H., Laradji, A., and Mustafa, M.T.**, Technical Report No. 427 (November 2012).

Physics DepartmentPatents

1. "Desalination System and Method." **Al-Sadah, Jihad Hassan**. U.S. Patent 8,287,716; October 16, 2012.
2. "System for Electrostatic Desalination", **Al-sadah, Jihad Hassan**. U.S. Patent 8,287,710. Oct 16 2012.
3. "Heavy Ion Radiation Therapy System with Stair-step Modulation", Hill; P.M. , Mackie; T. R. , **Al-Sadah; Jihad H.** , 8,269,196, September 18, 2012.
4. "X-ray Tube having a Rotating and Linearly Translating Anode", **Al-Sadah; Jihad H. Maalej; Nabil, Mansour; Ezzat**, 8,259,905, September 4, 2012.
5. "System for Asynchronous Remote Steering of Reflectors", **Al-Sadah; Jihad Hassan**, 8,256,911, September 4, 2012.

Technical Reports Submitted

1. “Development of Technologies For Deep Desulfurization of Fuel Oils”, **M.A.Gondal**, KACST # DRP-4-25, Annual report, (May 2010, June 2012).
2. “Laser Approach to Metal Nanoalloys, Its Optimization & Search for Novel Alloy Nanostructures materials”, **M.A. Gondal**, Internal project # IN090025, Final report, (April 2009-april 2012).
3. “Development of Laser Induced Breakdown Spectrometer for the Determination of Chloride and Sulfate Concentration in Concrete Structures for Assessment of Reinforcement Corrosion”, **M.A. Gondal**, Center of Corrosion Core project # 1 Semi-annual report, 2012.
4. “Photo-catalytic Conversion of Carbon Dioxide Into Methanol Using Nano-Catalysts”, **M.A. Gondal**, Internal project # Rg1011-1 & Rg1011-2, Semi-annual report, (Oct 2010-March 2013).
5. “Synthesis and Optical Characterizations of Hybrid Nano-Structures Using Advanced Laser based Techniques”, **M.A. Gondal**, Internal project # Rg 1103-1 & Rg 1103-2, Semi-annual report (March 2011-April 2014).
6. “Remediation of Water Produced in Resource Extraction”, **M.A. Gondal et al**, MIT-1012-1 Semi-annual report (january2012- January 2014).

7. “PV Water Pumping-part IV III”, **M.A. Gondal et al**, MIT-10109, Semi-annual report (Feb 2012-Feb. 2014).
8. “Development of Technologies For Deep Desulfurization of Fuel Oils”, **M.A. Gondal et al**, KACST # DRP-4-25, Semi-annual report, (May 2010, June 2013).

College of Computer Science & Engineering

Information & Computer Science Department

1. Automatic Arabic Text Image Optical Character Recognition Method”, **Al-Muhtaseb, H. A., Mahmoud, S. A.** and Rami S. Qahwaji, US Patent Number U.S. 8150160, April 3, 2012.

Systems Engineering Department

1. Engineering Design II: Inspiring Technical Innovation in the Sophomore and Junior Years”, **N. Merah (PI), A. Shuaib, M. Deriche, H. Alfares, H. Bahaidrah, N. Abudheir**, Final Report submitted to KFUPM-MIT Center for Clean Water & Clean Energy, Project # MIT 10113-10114, Oct. 2012.

Patents

1. “Method and Apparatus for Tracking Center of Gravity of Air Vehicle”, **Mohammad Al-Malki** and **Moustafa Elshafei** US Patent # 8,260,477, September, 2012.
2. “Arabic Poetry Meter Identification and Method”, **Abdulkareem Al-Zahrani** and **Moustafa Elshafei**, US Patent # 8,219,386 , July, 2012.

**Patents relating to the Center for Research Excellence
in Refining & Petrochemicals**

Patent Awarded

Isomerization Catalysts”, **Khurshid, M.; Al-Khattaf, S. and Hattori, H.** USPTO Patent Issued No. 8,153,548 B2, April 10, 2012.

Patent Application Published

Catalysts for Oxidative Dehydrogenation of Propane to Propylene”, **Ahmed, S., Rahman, F, Baduruthamal, U.** USPTO Patent Application Publication No. 20120083641 A1, April 5, 2012.

Patent Application Pending

“Multiple Zeolite Catalyst and Method of Using the Same for Toluene Disproportionation”, **Ali, M.A.**, USPTO Patent Pending, Date of Filing: November 28, 2012.

12. INTERNAL LECTURES AND SEMINARS OFFERED BY KFUPM FACULTY

Electrical Engineering Department

1. Speaker : Dr. Oualid Hammi
Topic : Polynomial Based Behavioral Models and Digital Predistorters for Power Amplifiers with Memory Effects
Venue : University of Seville, Sevilla, Spain
Date : December 11, 2012
2. Speaker : Dr. Oualid Hammi
Topic : RF Circuits and Systems for Green Wireless Communication Infrastructure
Venue : University of British Columbia – Okagan Campus, Kelowna, BC, Canada
Date : October 25, 2012
3. Speaker : Dr. Oualid Hammi
Topic : Scalable Behavioral Model and Digital Predistorter Structures for LTE Applications
Venue : University of Calgary, Calgary, AB, Canada
Date : August 21, 2012

Lectures/Seminars inside KFUPM:

1. Speaker : Dr. Roger Stancliff
Topic : Exploring New Microwave Measurements
Date : 9/11/2012
2. Speaker : Dr. Sameh Sorour KAUST
Topic : Instantly Decodable Network Coding: Where We Stand and Where We Head
Date : 9/18/2012
3. Speaker : Dr. Raj Mitra
Topic : Designing a Practical Multiband antenna for a Mobile Handset - a Real-world Experience
Date : 9/24/2012
4. Speaker : Mr. Ibrahim Saihati
Topic : PET Deliniation of NEMA Body Phantom using Active Contour Models
Date : 10/2/2012
5. Speaker : Dr. Saad Al-Ahmadi
Topic : On the Capacity of Shadowed Nakagami Fading Channels
Date : 10/9/2012
6. Speaker : Mr. Zahi Matar
Topic : NI Educational Platform, the NI ELVIS, with its Additional Boards
Date : 10/16/2012

7. Speaker : Dr. Mohamed Deriche
Topic : Performance Analysis in Classification Problems using the Receiver Operating Characteristic Approach
Date : 11/6/2012
8. Speaker : Mr. Muhammad Saqib Sohail
Topic : A Compressed Sensing Based Method with Support Refinement for Impulse Noise Cancellation in DSL
Date : 11/13/2012
9. Speaker : Dr. Oualid Hammi
Topic : An Accurate Complexity-Reduced "PLUME" Model for Behavioral modeling and Digital Predistortion of RF Power Amplifiers
Date : 11/20/2012
10. Speaker : Mr. Hussain Ali
Topic : Extended LDPC Codes for Cooperative Diversity
Date : 11/27/2012
11. Speaker : Dr. Mohamed Sharawi
Topic : Isolation Techniques for Printed MIMO Antenna Systems
Date : 12/4/2012
12. Speaker : Dr. Saad Bouguezel,
University Ferhat Abbas, Setif, Algeria
Topic : Discrete Transforms: Their Parameterizations and Applications
Date : 12/10/2012
13. Speaker : Dr. Saad Bouguezel,
University Ferhat Abbas, Setif, Algeria
Topic : Discrete Transforms: Their Approximations and Applications
Date : 12/10/2012
14. Speaker : Dr. Khurram Qureshi
Topic : Optical Fiber based Sensors
Date : 12/11/2012
15. Speaker : Dr. Zakariya Al-Hamouz
Topic : On the Design of Efficient Electrostatic Preceptors: Experimental Findings
Date : 12/18/2012

Mechanical Engineering Department

1. Speaker : Mr. Medhat Nemitallah
Topic : Applications of Oxy-Fuel Combustion Technology into Gas Turbine Combustors and Ion Transport Membrane Reactors
Date : Oct., 07, 2012
2. Speaker : Mr. Shahnawaz Alam
Topic : AlCrn Hard Coating Deposited by Magnetron Sputtering – Scratch, Wear and Creep Behaviour
Date : Oct., 17, 2012

3. Speaker : Dr. Jafar Albinmoussa
Topic : Multiaxial Cyclic Behavior of Anisotropic AZ31B Magnesium Extrusion
Date : Nov., 06, 2012
4. Speaker : Khalid Al-Obaidi
Topic : Study of Prolonged Service Degradation of Superheater Tubes and its Effects on Remaining
Date : Nov., 18, 2012
5. Speaker : Mr. Osama Hasan
Topic : Performance and Life Prediction Model for Photovoltaic Modules: Effect of Encapsulant Constitutive Behavior
Date : Nov., 20, 2012
6. Speaker : Mr. Abdulafeez adebiyi
Topic : Experimental Studies on Solar PhotoVoltaic (PV) Refrigeration System
Date : Nov., 27, 2012
7. Speaker : Mr. Muhammad Nauman Zafar
Topic : Corrosion Behaviour of Different Steel Grades in Emulsion (oil/Water) in Presence of H_2S and CO_2 Gases
Date : Nov., 27, 2012
8. Speaker : Mr. Bilal Tawveer
Topic : Modeling and Performance Analysis of Low Concentration PhotoVoltaic (LCPV) System
Date : Dec., 02, 2012
9. Speaker : Mr. Waqas Akram
Topic : Energy Utilization from Disposed Brine of Multistage Flash Desalination (Msf) Plant using Pressure Retarded Osmosis (PRO)
Date : Dec., 02, 2012
10. Speaker : Mr. Ismaila K. Aliyu
Topic : Optimization of Process Parameters for Spark Plasma Sintered Al-Sic Nano-Composites
Date : Dec., 04, 2012
11. Speaker : Mr. Muhammad Ibrar Hussain
Topic : Computational Fluid Dynamics Modeling of Steam Methane Reforming Reaction and Design of Required Temperature Controlled Solar Heated Surface
Date : Dec., 04, 2012
12. Speaker : Mr. Naef Qasem
Topic : Thermodynamic Analysis and Modeling Study of an Intermittent Solar Adsorption Refrigeration System
Date : Dec., 04, 2012

13. Speaker : Mr. Hassaan Zafar
Topic : Modeling Nano-Indentation using Multi-Scale Discrete Dislocation Plasticity
Date : Dec., 09, 2012

14. Speaker : Mr. Farooq Siddiqui
Topic : Development of a New Hybrid Storage System for Solar Powered Aqua-Ammonia Absorption Refrigeration Cycle
Date : Dec., 09, 2012

15. Speaker : Mr. Hafiz Shafi
Topic : Improving Biofouling Resistance of Commercial RO Membranes via Surface Modification
Date : Dec., 09, 2012

16. Speaker : Mr. M. Luqman
Topic : Modeling and Simulation of Spark Plasma Sintering Process
Date : Dec., 10, 2012

17. Speaker : Dr. Khaled M. Ibrahim
Topic : Recent Trends in Development of Ferrous and Non-Ferrous Alloys
Date : Dec., 11, 2012

18. Speaker : Mr. Abdul Azeem
Topic : Thixoforging of Aluminum Nano-Composites Synthesized by Ultrasonic Stir Casting
Date : Dec., 11, 2012

19. Speaker : Mr. Feras Kefiah
Topic : Development of RO Desalination Membranes using Polysulfone Electrospun Fibers
Date : Dec., 11, 2012

20. Speaker : Mr. Ahmad Al-Jabr
Topic : Feasibility Study of the Best and Most Suitable Concentrated Solar Power System Compatible with KSA Environment and Investigation of Different Pressurized Air Receiver Designs
Date : Dec., 11, 2012

21. Speaker : Mr. Zafar Iqbal
Topic : Development of Tungsten-Rhenium Base Pin Tool for Friction Stir Welding of Steel
Date : Dec., 11, 2012

22. Speaker : Mr. Ali Al-Ugla
Topic : Development of Solar Air-Conditioning Application in Commercial Buildings in Saudi Arabia
Date : Dec., 12, 2012

23. Speaker : Mr. Khalid Naseem
 Topic : Analysis of Residual Stress Distribution in Submerged Arc Spiral Welded Pipe
 Date : Dec., 12, 2012

Invited lectures/seminars by Mechanical Engineering Faculty

1. “Nonlinear Dynamics of MEMS and NEMS Resonators”, **Ouakad, H.M.**, Nonlinear Sciences and Applications-KFUPM Nonlinear Physics Day, KFUPM Physics Department, November 4th, 2012.
2. “Optimisation of Hybrid Cogeneration Systems for Water and Power Production”, Keynote speaker: **M.H. Sharqawy**, the 8th Water, Electricity and Power Generation Forum which took place from the 13th – 15th May 2012 in Dammam, organized by International Desalination Association (IDA). Title of presentation

Petroleum Engineering Department

1. Speaker : Dr. Maxim V. Fedorov, Professor of Physics and Life Sciences, University of Strathclyde, Glasgow, UK
 Topic : Ions at Interfaces: Understanding of Interfacial Behavior of Inorganic and Organic Ions by a Combination of Molecular Simulations and Experimental Techniques
 Date : 19th September 2012
2. Speaker : Dr. Shadaab Maghrabi, Halliburton R&D Centre, Dhahran
 Topic : Halide-Free Clay-Free Invert Emulsion Fluids
 Date : 6th November 2012
3. Speaker : Dr. Sami Eyuboglu, Halliburton R&D Centre, Dhahran
 Topic : Advances in Logging while Drilling (LWD) Formation Testing (Geotap-IDS)
 Date : 13th November 2012
4. Speaker : Dr. Fabrice Pairoys, Schlumberger Dhahran Carbonate Research Center
 Topic : Laboratory Resistivity Measurements on Carbonate Rocks: Surprising Results from Multi-Year Experiments
 Date : 11th December 2012

Aerospace Engineering Department

1. Speaker : Dr. Farooq Saeed
 Date : September 6, 2012
 Title : An Inverse Design Method for Aircraft Engine Sand Separator System
 Place : 38th European Rotocraft Forum, Amsterdam, the Netherlands

Earth Sciences Department

1. Speaker : Dr. Mike Kaminski (KFUPM, ESD Seminar)
Title : The creature at the Black Lagoon: The life cycle and validity of the foraminiferal genus *Entzia* from a salt marsh in Transylvania
Date : September 18, 2012

2. Speaker : Prof. Gabor Korvin
(KFUPM Applied and Computational Mathematics Day)
Title : Strange Fractal Phenomena in Well Pressure Transient Analysis
Date : December 4, 2012

Department of Mathematics & StatisticsRegular Seminars

1. Speaker : Dr. Faisal Fairag
Title : The Mathematics Behind Image Deblurring
Date : Tuesday, September 11, 2012
2. Speaker : Dr. Othman Echi
Title : On Factorization Systems in a Category
Date : Tuesday, September 18, 2012
3. Speaker : Dr. Nasser-eddine Tatar
Title : New Activation Functions in Neural Network Theory
Date : Tuesday, September 25, 2012
4. Speaker : Dr. Jamal AlSmail
Title : Optimal Shape Designs for Hydrogen Fuel Cells Cathode Air Channels
Date : Tuesday, October 2, 2012
5. Speaker : Dr. Abeeb Awotunde (Petroleum Engg. Dept. KFUPM)
Title : A Wavelet Approach to Adjoint-State Sensitivity Computation for Steady-State Differential Equations
Date : Tuesday, November 6, 2012
6. Speaker : Dr. Monther Al-Furaidan
Title : Uniqueness of the Generalized Octagon Graph of Order (2,4)
Date : Tuesday, October 16, 2012
7. Speaker : Dr. Aissa Guesmia
Title : Neumann-Boundary Stabilization of the Wave Equation with Damping Control and Applications
Date : Tuesday, November 20, 2012

Statistics Seminars

1. Speaker : Dr. Muhammad A. Bokhari
Title : Smoothing of Noisy Data by Average EWMA and LS-Approximation
Date : Sunday, November 18, 2012

Visitor's Seminars

1. Speaker : Dr. Mikhail Stukan (Schlumberger, Dhahran)
Title : Numerical Simulation of Spontaneous Imbibition in Capillaries of Different Roughness and Wettability
Date : Tuesday, October 9, 2012

2. Speaker : Dr. Ian Sloan (Scientia Prof. Univ. New South Wales, and Chair Prof. KFUPM) -- Lecture Series (1)
 Title : Quasi Monte Carlo Methods and Applications to PDE with Random Coefficients
 Date : Sunday, November 18, 2012
3. Speaker : Dr. Ian Sloan (Scientia Prof. Univ. New South Wales, and Chair Prof. KFUPM) – Lecture Series (2)
 Title : Quasi Monte Carlo Methods and Applications to PDE with Random Coefficients
 Date : Tuesday, November 20, 2012
4. Speaker : Dr. Ian Sloan (Scientia Prof. Univ. New South Wales, and Chair Prof. KFUPM) – Lecture Series (3)
 Title : PDE with Random Coefficients
 Date : Tuesday, November 27, 2012
5. Speaker : Dr. Vasile Berinde (North Univ. Center Baia Mare, Romania)
 Title : Constructive Fixed Point Theory and Applications
 Date : Tuesday, November 27, 2012
6. Speaker : Dr. Michael Griebel (Institute of Numerical Simulation, Univ., Bonn)
 Title : On Generalized Sparse Grids
 Date : Tuesday, December 11, 2012
7. Speaker : Dr. Anjan Biswas (Delaware State Univ., USA)
 Title : Qasi-Stationary Optical Solitons with Non-Kerr Law Nonlinearity
 Date : Tuesday, December 18, 2012
8. Speaker : Prof. Abdul Hamid Kara (Univ. Witwatersrand, South Africa)
 Title : Wave Equations in Bianchi Space-Times
 Date : Tuesday, December 18, 2012
9. Speaker : Prof. Bernardo Cockburn (Univ. Minnesota & Chair Prof., KFUPM)
 Title : An Introduction of the Hybridizable Discontinuous Galerkin (HDG) Methods
 Date : Sunday, December 23, 2012

Differential Equations Group Seminar

1. Speaker : Dr. Abdelkader Boucherif
 Title : Subharmonic Solutions of Second Order Differential Equations
 Date : Sunday, September 30, 2012
2. Speaker : Dr. Abmed Bchatnia (Dammam University)
 Title : Scattering and Exponential Decay of the Local Energy for the Solutions of Semilinear Wave Equation
 Date : Sunday, October 14, 2012

3. Speaker : Dr. Salim Messaoudi
Title : General Decay in Viscoelastic Equations
Date : Sunday, November 4, 2012
4. Speaker : Dr. Aissa Guesmia
Title : Asymptotic Stability of Abstract Dissipative Systems with Infinite Memory and Applications
Date : Sunday, November 18, 2012
5. Speaker : Mr. Tijani Apalara
Title : Well-Posedness and Exponential Stability of a One-Dimensional System of Thermoelasticity Type-III with Delay
Date : Sunday, December 2, 2012
6. Speaker : Mr. Abdelfeteh Fareh (Univ. El Oued, Algeria)
Title : System of Thermoelasticity of type III with Different Wave-Propagation Speeds
Date : Sunday, December 23, 2012

Thesis Defense

1. Speaker : Mr. Tijani Apalara (Ph.D. Proposal)
Title : On the Stability of Some Systems of Thermoelasticity Type III
Date : Sunday, December 16, 2012

Students Seminar

1. Speaker : Mr. Wael Al-Ahmadi
Title : Asymptotic Behavior of Solutions of Fractional Differential Equations
Date : Sunday, October 14, 2012

Workshop Titled “APPLIED AND COMPUTATIONAL MATHEMATICS DAY on December 4, 2012.”

In order to celebrate the 50th Anniversary of the KFUPM, the department held a one-day workshop on “**Applied and Computational Mathematics**” on Tuesday, December 4, 2012. Some faculty members and chair professors of our department, and some faculty from other departments gave their lectures. The main objective of this workshop was to benefit from the scientific portion of this event.

Workshop held on December 31st. 2012

The Department of Mathematics and Statistics will be organizing a workshop on “Non-Linear Analysis and Fixed Point Theory” on 31st December 2012 in the auditorium of Building 15 of our University. It is an important event of great academic and research significance. Some of our chair and distinguished professors, who are currently visiting the department, will participate in the event.

Commutative Algebra Weekly Seminar (Organizer: Dr. S. Kabbaj),

(Seminars given by the following faculty members from October 2012 – December 2012)

1. Speaker : Dr. A. Khalfallah
Title : Nonstandard Extension of Affine Schemes
Date : October 14, 2012
2. Speaker : Dr. J. Abuilhail
Title : Ultrafilters of Prufer-like Rings (1)
Date : November 11, 2012
3. Speaker : Dr. J. Abuilhail
Title : Ultrafilters of Prufer-like Rings (2)
Date : November 18, 2012
4. Speaker : Mr. K. Adarbeh
Title : (Gorenstein) Rings of Finite Ext-Index (1)
Date : November 25, 2012
5. Speaker : Mr. K. Adarbeh
Title : (Gorenstein) Rings of Finite Ext-Index (2)
Date : December 02, 2012
6. Speaker : Dr. A. Tatar
Title : Vanishing of Cohomology Over Cohen-Macaulay Rings
Date : December 09, 2012
7. Speaker : Dr. A. Mimouni
Title : Goto et al.'s Recent Work on Sally's Question and Shimoda's Conjecture
Date : December 16, 2012
8. Speaker : Mr. H. Haroub
Title : Zariski Spaces of Modules Over Arbitrary Rings
Date : December 23, 2012
9. Speaker : Mr. A. Kadri
Title : Reductions and Core of Ideals
Date : December 30, 2012
10. Speaker : Dr. A. Tatar
Title : Vanishing of Cohomology over Cohen-Macaulay Rings
Date : December 2, 2012

Physics Department

1. Speaker : Mr. Shoaib Quraishi, KFUPM Library
Title : KFUPM Library Resources and Services:
Recent Developments
Date : 16 September 2012
2. Speaker : Dr. Saleem G. Rao
Title : Directed Self-assembly of Nano-diamond with Nitrogen-vacancy
Centers on Chemically Modified Patterned Surface
Date : 30 September 2012
3. Speaker : Dr. Wajih Abdulelah Abu-Al-Saud, Electrical Engg. Dept.
Title : Advanced use of MS Excel using Visual Basic for Applications (VBA)
Date : 7 October 2012
4. Speaker : Prof. M.A. Gondal
Title : Synthesis of Nano Alloys and Nano Composites using Pulsed Laser
Ablation in Liquids
Date : 11 November 2012
5. Speaker : Prof. A.A. Naqvi
Title : Measurement of Sulfate Concentration in Plain and Blended Cement
Concretes Utilizing Prompt Gamma-Ray Technique
Date : 11 November 2012
6. Speaker : Dr. Watheq Al-Basheer
Title : Cold and Ultra-cold Molecular Spectroscopy using Conventional and
Unconventional Techniques
Date : 18 November 2012
7. Speaker : Dr. Shankar Kunwar
Title : Growth, Characterization and Optical Study of non-metal (Nitrogen and
Carbon) doped Titanium Dioxide (TiO_2) by Sputtering Technique
Date : 25 November 2012
8. Speaker : Dr. Ashraf Farahat,
College of Applied & Supporting Studies, KFUPM
Title : Gas – Plasma Coupling in Miniaturized spaces
Date : 2 December 2012
9. Speaker : Dr. Ayman Sherif El-Said
Title : Creation of Nanoscale Surface Structures by Slow Highly Charged Ions
Date : 9 December 2012
10. Speaker : Mr. Yasin Maganda
Title : Development of Laser Induced Break Down Spectroscopy for the
Detection of Toxic Elements in Talcum Powder
Date : 23 December 2012

Invited Talk given by Physics Dept. Faculty outside KFUPM

1. “Best Practices in Successful Higher Education Systems”, **N. Tabet**, Invited talk, University of Annaba, Algeria, 25 June 2012.
2. “Engineering the Properties of Amorphous Silicon for Solar Cells”, **N. Tabet**, Invited talk, Research Center at the College of Sciences, Imam University, Riyadh, 7 October 2012.

General Studies Department

1. Speaker : Dr. Mark Thompson
Topic : The National Dialogue: The Role of King Abdulaziz Center for National Dialogue (KACND)
Date : Dec 18, 2012
2. Speaker : Dr. Timm Lau
Topic : Oil and beyond, or: Why we need an anthropology of oil and energy in Saudi Arabia
Date : Nov 20, 2012
3. Speaker : Dr. Christopher P. Garriss
Topic : Exploring the Prevalence and Impact of Student Entitlement
Date : Oct 2, 2012

ICS Department

1. Speaker : Dr. El-Sayed Mohammad Al-Alfy
Topic : An Overview and Information Fusion for Multimodel Biometric Authentication
Location : Seminar Day, CCSE-KFUPM
Date : February 14, 2012
2. Speaker : Dr. El-Sayed Mohammad Al-Alfy
Topic : Invited Talk on Biometric Authentication Technologies: Past, Present and Future
Location : Prince Mohamed University, Al-Khobar
Date : October 15, 2012
3. Speaker : Dr. El-Sayed Mohammad Al-Alfy
Topic : Keynote Speech on Advance and Current Research in Biometric Recognition, International Conference on Advances in Computing, Communication, and Informatics
Location : Chennai, India
Date : August 4, 2012
4. Speaker : Dr. S. Zhioua
Topic : Large-Scale Threats to Enterprise Computing, Dissecting Flame and Shamoon Malwares
Location : Prince Mohamed University, Al-Khobar
Date : October 15, 2012

5. Speaker : Dr. S. Zhioua
Topic : Your Enemy: Hacking with Malwares
Location : KFUPM
Date : November 6, 2012
6. Speaker : Dr. S. Zhioua
Topic : Dissecting Stuxnet and Shamoon Malwares
Location : Saudi Aramco, IT Future Center
Date : December 4, 2012

Computer Engineering Department

Lectures/Seminars Delivered:

"Intrusion Detection through Intelligent Information Processing," **Baig, Z. A.**, Prince Mohammed bin Fahd University, Al-Khobar, October 2012.

Invited Lecture

Al-Mouhamed, M., "Experimental Analysis of SMP Scalability in the Presence of Coherence Traffic and Snoop Filtering", delivered an invited presentation titled in the Saudi Arabian High Performance Computing Users' Group Conference at KAUST, Thwal, 1-3 December, 2012.

Systems Engineering

Visitors Seminars:

1. Speaker : Dr. Turhan Bilgili
Topic : "Risk Management in the Supply Chain"
Date : December 4, 2012

Students Seminar:

1. Speaker : Mr. Mohammed Riyaz Ahmed
Topic : Advances in Medical Instrumentation & Prognosis
Date : October 9, 2012
2. Speaker : Mr. Mohammad Talib
Topic : Challenges of Automation and Control in Drilling Systems
Date : 9 October, 2012
3. Speaker : Mr. Ghulam Dastgir Khan,
Topic : Analysis of Event-driven Controllers for Linear Systems
Date : 6th November, 2012
4. Speaker : Mr. Al-Zahrani, Jumaan
Topic : Analytical Network Process
Date : 6th November, 2012
5. Speaker : Mr. Ahmed A. Adeniran
Topic : Multi-Mode Nonlinear Systems Identification: An Overview
Date : 13 November, 2012

6. Speaker : Mr. Mahmoud Elfeky,
Topic : In-Pipe Leak Detection Systems
Date : 11 December, 2012

7. Speaker : Mr. Malik Hasnain Fayyaz
Topic : Safety Instrumented System and Case Study
Date : 11 December, 2012.

13. SEMINARS OFFERED BY OUTSIDE SPEAKERS IN THE UNIVERSITY

Civil Engineering Department

1. Speaker : Prof. William C. Taylor, Michigan State University, USA
 Topic : Urban Congestion
 Date : March 3, 2012

Mechanical Engineering Department

1. Speaker : Dr. Sherif Sedky, Physics Professor, Associate Dean of Graduate Studies & Research and Director of Yousef Jameel Science and Technology Research Center at the American University in Cairo
 Topic : MEMS at the American University in Cairo
 Date : February 8, 2012

Electrical Engineering Department

Earth Sciences Department

1. Speaker : Dr. Nate Bachman
 (Schlumberger Dhahran Carbonate Research Center)
 Title : Wettability physics at the pore scale using Nuclear Magnetic Resonance
 Date : October 02, 2012
2. Speaker : Dr. Khaled Hadj-Sassi
 (Schlumberger Dhahran Carb. Res. Ctr.)
 Title : Dielectric effects in Petrophysics
 Date : October 09, 2012
3. Speaker : Dr. Shadaab Maghrabi (Halliburton)
 Title : Latest Innovations in Drilling Fluid
 Date : November 06, 2012
4. Speaker : Dr. Sami Eyuboglu (Halliburton)
 Title : New Ways of Formation Pressure Testing and Sampling
 Date : November 13, 2012
5. Speaker : Dr. Elio Poggiagliolmi (London)
 Title : Is the Exploration Industry Ready to Cross the Last Frontier in the Acquisition of Seismic Data
 Date : November 27, 2012
6. Speaker : Dr. Rocco Detomo (SEG)
 Title : Honorary Lecture Tour
 Date : December 04, 2012
7. Speaker : Dr. Tariq Cheema (KAU, Jeddah)
 Title : Mining for Oil: Geoenvironmental Issues & Research
 Date : December 25, 2012

Physics Department

1. Speaker : Dr. Ramzi Maalej, Sfax University, Tunisia
Title : Theoretical Analysis and Simulation of Optical Properties of Rare Earth Doped Nanomaterials
Date : 04 November 2012
2. Speaker : Prof. Yuri Kivshar, Head, Nonlinear Physics Center, RSPE, Australian National University, Australia
Title : Light Control with Metamaterials
Date : 3 December 2012
3. Speaker : Dr. Anjan Biswas
Department of Mathematical Sciences, Delaware State University, USA
Title : Topological Soliton Perturbation with Sine-Gordon Equation and its Type
Date : 16 December 2012