



أنباء البحوث Research NEWSLETTER



RESEARCH NEWSLETTER

July 2010

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RESEARCH NEWSLETTER

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FOREWORD

This second issue of the University Research Newsletter for the Academic Year 2009-2010 provides up-to-date information about the research and other scholarly activities undertaken by the University faculty members for the half-year period from January 2010 until June 2010. 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 significance; and to improve the quality of graduate education. This *Research Newsletter*, published by the Deanship of Scientific 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 Scientific Research is making its best efforts in promoting the new research grants among the faculty members so that the faculty members can actively participate in the research, which is not only beneficial to their own professional career but also to the development of the society at large.

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

Dr. Mohammad S. Al-Homoud
Dean of Scientific Research

2. ABSTRACTS OF SELECTED RESEARCH PROJECTS

1. Project No. IN100013

Principal Investigator: Dr. Syed Fida Hassan (ME)

Co-Investigator #1: Dr. Zuhair Gasem (ME)

Co-Investigator #2: Mr. Faheemuddin Patel (ME)

Title: Fatigue, Creep and Corrosion Properties of New Generation Magnesium Nano-Composites

Abstract

Increasing demand for the reduction of fuel consumption and environmental problems has led to intensive research efforts into design and development of light structural materials for automobiles and aerospace applications. This growing requirement of high specific mechanical properties with weight savings have stimulated significant current research activities targeted primarily for further development of magnesium based composite materials. Among all the reinforcements used in magnesium based composites, nano-size oxide particulates have shown attractive combination of specific mechanical properties and ductility. The first author has recently found that the addition of 1 vol% nano-sized alumina particulate reinforcement to a pure magnesium matrix yielded superior tensile and ductility properties. Room temperature tensile properties of this new generation structural magnesium nanocomposites have been characterized recently by the first author. In this proposed work, fatigue, corrosion, and creep properties of the same nanocomposite will be characterized to assess their suitability for a wide range of engineering applications.

2. Project No. IN100014

Principal Investigator: Dr. Mohammad Ramady (FIN)

Title: The Saudi Arabian Economy: Policies, Achievements and Challenges Publishers: Springer Science and Business Media, USA [Bookwriting Project]

Abstract

In this Second Edition particular attention is paid to the benefits of short-term planning and long-term diversification intended to shield the economy from potentially de-stabilisation oil price fluctuations and the pace and diversity of domestic reforms. The author examines the core strengths and evolution of various financial institutions and the Saudi stock market in the face of globalization, before analysing the private sector in detail. The book offers an analysis of key challenges facing the Saudi economy, paying particular attention to the potential costs and benefits of globalization, and membership in the WTO. Employment, education, economic and social stability, and Saudi Arabia's place in the Gulf Cooperation Council, as well as Saudi Arabia's evolving strategic economic relations with China and other countries are examined.

The book adopts a practical approach to the problems and challenges faced by Saudi Arabia which will be of interest to practitioners as well as academics and the general community, as various topics of concern are addressed and solutions put forward for such issues as the hydrocarbon and minerals sector, including the emergence of the competitive petrochemical

sector and how Saudi Arabia needs to develop its own renewable energy base to meet future domestic energy demand; the impact of small and medium sized businesses and their growing importance to employment generation and models of industrial clusters; the evolving role of “family” businesses, and private public-partnership in light of problems faced by some high profile family groups; the growing role of women in the Saudi economy and opportunities to integrate them in the workforce; as well as the role of privatization and FDI as engines of change to sustain a knowledge based economy .

3. Project No. IN100015

Principal Investigator: Dr. Magdi Mahmoud (SE)

**Title: Decentralized Control and Filtering in Dynamical Interconnected Systems
Publishers: CRC Press, USA) [Bookwriting Project]**

Abstract

Large-scale systems (LSS) have been investigated for a long time in the control literature and have attracted increasingly more attention for more than two decades. The literature grew progressively and quite a number of fundamental concepts and powerful tools have been developed from various disciplines. Despite the rapid progress made so far, many fundamental problems are still either unexplored or less well understood. In particular, there still lacks a unified framework that can cope with the core issues in a systematic way. This motivated us to write the current book. The book presents theoretical explorations on several fundamental problems for LSS.

This book aims at providing a rigorous framework for studying analysis, stability and control problems of LSS while addressing the dominating sources of difficulties due to: dimensionality; information structure constraints; parametric uncertainty and time-delays. The primary objective is three-fold: to review past methods and results from a contemporary perspective, to examine presents trends and approaches and to provide future possibilities, focusing on robust, reliable and/or resilient decentralized design methods based on linear matrix inequalities framework.

4. Project No. IN100016

Principal Investigator: Dr. Mohammad El-Attar (ICS)

Co-Investigator #1: Dr. Mahmoud Elish (ICS)

Co-Investigator #2: Mr. Irfan Ahmad (ICS)

Title: Improving the Quality of Misuse Case Models

Abstract

Security is a vital requirement for many software systems. Without ensuring security, many software systems are deemed useless. In recent years, misuse case modeling has shown to be a promising technique for eliciting security threats and requirements. Misuse case models allow system designers to inject security considerations within their designs early in the development cycle. This is potentially a much more effective approach to ensuring security than patching an end system with security mechanisms after it was developed. The notation and syntactical rules of misuse case models are relatively simple. However, this is not the case as misuse case modeling practitioners are highly vulnerable to modeling pitfalls, mistakes and oversights, creating defective misuse case models that can have catastrophic effects later on in the development cycle. The aim of this research project is to develop approaches that will improve quality in misuse case models based on antipatterns and authoring structure.

5. Project No. IN100017 Principal Investigator: Dr. A.S. Bonfah (Math)**Title: Dynamics of Singularly Perturbed Dissipative Evolution Equations****Abstract**

We consider singularly perturbed nonlinear evolution equations as dynamical systems. We investigate the large time behavior of the solutions and their stability with respect to small perturbations. More precisely, we construct families of exponential attractors and inertial manifolds which are continuous at any value of the parameter of perturbation close to zero. Continuity properties of the global attractors are also examined. The global attractor is a compact set of the phase space which attracts uniformly the trajectories starting from bounded sets when time goes to infinity. An inertial manifold is a positively invariant smooth n -dimensional manifold which contains the global attractor and which attracts the trajectories at a uniform exponential rate. An exponential attractor is a compact and positively invariant set with finite fractal dimension which attracts all the trajectories starting from bounded sets at a uniform exponential rate. The goal of this project is to study the existence and stability with respect to perturbations of the global attractors, exponential attractors and inertial manifolds for singularly perturbed dissipative dynamical systems. Applications will be given to the Cahn-Hilliard equations, the damped wave equations, and the phase-field equations.

6. Project No. IN100018**Principal Investigator: Dr. Magdi Mahmoud (SE)****Co-Investigator: Dr. Fouad Alsunni (SE)****Title: Development of Performance Analysis and Design Methods for Interconnected Control and Communications Systems****Abstract**

This project investigates the performance analysis and design problems for a wide class of interconnected control and communication systems (ICCS). The class of systems is modeled in either continuous- or discrete-time format. One class is the coordinated control problem of heading set-point regulation for a group of N constant speed vehicles where each vehicle is equipped with a radio with tunable transmission power of sufficiently large magnitude. Another class is the performance of industrial systems over an unreliable communication network affected by packet loss and variable transmission delays. A third class concerns the dynamic routing problem in large scale traffic networks. The project will aim at developing efficient algorithms and testing its performance on typical practical data.

7. Project No. IN100019**Principal Investigator: Dr. Lahaouri Ghouti (ICS)****Title: Digital Imaging and Computer Vision: Digital Copyright, Biometrics and Forensic Systems [Bookwriting Project]****Abstract**

The book covers the field of digital imaging and computer vision. The book is aimed at advanced undergraduates or first-year graduate (MSc and PhD levels) students, as well as researchers and practitioners in the related fields covered by the book. The book will reflect

recent advances in the covered topics while providing a comprehensive introduction to the fields of imaging, computer vision, biometrics and forensic imaging, and imaging systems for digital copyright management. The fields of imaging, computer vision, biometrics and forensic imaging, and imaging systems for digital copyright management are witnessing an increasingly dramatic growth to the security awareness raised by the recent events occurring worldwide. These developments have been accompanied by several practical systems to enable increased border-control, law enforcement practices and digital copyright management. The major salient features of the book are: 1) Vast coverage with background material whenever necessary. 2) Coverage of the practical aspects of the topics covered. 3) Extensive software implementation based on MATLAB programming environment. 4) Worked examples and demonstration programs. 5) Comprehensive coverage of cutting-edge research in the book topics.

8. Project No. IN100020 Principal Investigator: Dr. Fouad Alsunni (SE)

Title: Mechatronics Systems: Analysis, Design and Implementation [Bookwriting Project]

Abstract

This book deals with the analysis, the design and the implementation of the mechatronic systems. Classical and modern tools are developed for the analysis and the design for such systems. Robust control, H-infinity and guaranteed cost control theory are also used for analysis and design of mechatronic systems. Different controllers, such as state feedback, static output feedback and dynamic output feedback controllers are used to stabilize mechatronic systems. The book is written for academic control theorists, undergraduate and graduate students interested in control of linear systems, libraries, control engineers working in computer controlled systems, in mechatronic systems and in the practical processes where the dynamics can be described by a linear system.

**9. Project No. IN100021 Principal Investigator: Dr. Halim Hamid Redhwi (CHE)
Co-Investigator: Dr. M. Nahid Siddiqui (CHEM)**

Title: Durability of Thermoplastic Nano-Composites under Local Weather Exposure and the Applicability of the Reciprocity Rule to their Ultraviolet Initiated Degradation

Abstract

Nanocomposite thermoplastics often show superior properties compared to conventional composites because of the high specific surface area of the filler used. This increases the polymer/nanofiller interfacial area and therefore the desirable mechanical properties of the thermoplastics. Increasing popularity of these materials will demand an analysis of their durability in outdoor applications, especially on exposure to the harsh UV and thermal conditions in the Kingdom. Furthermore, it will be useful to develop accelerated test protocols that allow the outdoor lifetimes to be assessed in the laboratory. We propose to use SABIC LDPE with three popular grades of nanofillers; a smectite clay, a silica and zinc oxide. These fillers are being evaluated as nanoscale fillers for common thermoplastics. In the first part of the project we will undertake an 18-month outdoor exposure of the 3 nanocomposites at a suitable location. We will also carry out parallel laboratory accelerated

exposures in a suitable weatherometer. In using accelerated tests that depend on higher intensities of light, the validity of the reciprocity rule needs to be first established. Such data is not available for the new nanomaterial filled thermoplastics. Essentially, the reciprocity law states that the rate k of photodamage suffered by the exposed samples increase linearly with the intensity I or the photon fluency rate of the exposure. That is $\log_e k = \log_e A + p \log_e I$ where $p \sim 1$. If p is not unity increasing the intensity cannot be expected to proportionately increase with increased light intensity. Using variable intensity exposures to sunlight we will clearly establish the reciprocity rules for the three nanocomposite LDPE systems for loss in mechanical integrity as measured by tensile property changes.

10. Project No. IN100022 Principal Investigator: Dr. Assane Lo (Math)

Title: Phase Transitions in Higher Dimensional Kac-like Models

Abstract

We attempt to extend the Witten Laplacian method used in [7], for the decay of correlations in models of Kac type to include the study of multiple phases. Knowing that the critical point for the $1 + 1$ dimensional models occurs at $bc = 14$, we have conjectured in [7] that in the $d + 1$ dimensional models, the critical point occurs at $bc = 14d$. The goal of this project is to prove this conjecture and to eventually extend the method to Hamiltonians that are not necessarily of Kac type.

**11. Project No. IN100023 Principal Investigator: Dr. Sajjad Mahmoud (ICS)
Co-Investigator: Mr. Muhammad Ali Khan (Prep Year)**

Title: An Integrated Requirements Analysis and Component Selection Approach for Component-Based Software Systems

Abstract

Component-Based Software (CBS) development is integration centric with a focus on selecting components that match stakeholder requirements. Components are usually designed for general purposes and finding the ideal ones is often very difficult. The CBS requirements process is hence more complicated than the conventional approach. In this research project, we aim to develop an integrated requirements and component selection process for CBS that provides a systematic process to select suitable components for a given set of requirements. We aim to consolidate related requirements characterized by their dependency relationships. The component selection process will be represented as a multi-objective optimization problem (MOP), with system requirements formulated as objective functions. An algorithm will be presented to solve the resulting MOP. An inter-disciplinary aspect of the project is the study of the overlap between simulation composability and CBS development and insight as to how the theoretical methods of simulation composability can be applied to CBS component selection. Furthermore, we plan to analyze the computational complexity of component selection in detail, pointing out both polynomially solvable and NP-hard instances. The project is expected to provide a better understanding of the CBS requirement and component selection process as well as a practical algorithmic approach for handling these crucial stages of CBS life-cycle.

**12. Project No. IN100024 Principal Investigator: Dr. Hassen Muttalak (Math)
Co-Investigator: Mr. Salah Mohammad (Math)**

Title: Group Sequential Testing for Binary Data Based on Ranked Set Sampling Methods

Abstract

In this project we will propose and study a host of group sequential (GS) testing methods for population proportions under the ranked set sampling (RSS). These methods will utilize ranking based on concomitant variables. We will derive the exact as well as asymptotic boundaries for the testing. By using Monte Carlo simulations, we compare the proposed methods to their counterparts based on simple random sampling (SRS) designs. We expect that the new methods will increase the efficiency of the group sequential procedures and will save much more sample than the conventional SRS group sequential methods.

**13. Project No. IN100025 Principal Investigator: Dr. Adrian Bejan (Mech Eng)
Co-Investigator #1: Dr. Bekir Sami Yilbas (ME)
Co-Investigator #2: Dr. Ahmet Z. Sahin (ME)**

Title: Distributed Energy System: The Tapestry of Multi-Scale Design in the Globe

Abstract

We propose to change the approach to energy (engineering) research in a most fundamental way. People live on land. They are distributed on the area, non-uniformly usually. Their needs to have power and use it (i.e. to destroy it) are distributed on land. The area represents the population (region, country, globe), and it constantly uses power for the benefit of all. The fundamental problem is to conceptualize the distribution of power flow as a pattern—a tapestry—designed such that the entire population has its growing energy needs satisfied by using a finite total stream of energy sources.

**14. Project No. IN100026 Principal Investigator: Dr. Othman Echi
Co-Investigator: Dr. Ibrahim Al-Rassi**

Title: A Generalization of Carmichael Numbers

Abstract

Let a be an integer. A positive integer N is said to be an a -Korselt number if $N-a$ is distinct from a and $p-a$ divides $N-a$ for each prime divisor p of N . This research project aims at developing both a numerical and theoretical study of composite squarefree Korselt numbers. Let a be a positive integer. By an a -Williams number, we mean a positive integer which is both an a -Korselt number and a $(-a)$ -Korselt number. Our second aim is the study of Williams numbers.

15. Project No. IN100027 Principal Investigator: Dr. Othman Echi (Math)**Title: A Categorical Study of Some Typical Examples of Alexandroff Spaces****Abstract**

Diskrete Räume of Alexandroff possess a structure suitable for approximating bounded portions of physically important manifolds. Also, there has recently been some interest from physicists in using category theory to model quantum physics. This research project is devoted to topological and categorical studies of some typical Alexandroff spaces. Let X be a set and $f : X \rightarrow X$ be a mapping. We denote by $A(f)$ the Alexandroff topology defined by the Kuratowski closure $\mu f : 2X \rightarrow 2X$ such that $\mu f(L) = \bigvee \{f^n(L) : n \text{ is a natural number}\}$. For a topological space X , and x, y two distinct points of X , we define $[x, y]$ to be the set of all elements z of X such that the topological closure of $\{z\}$ is contained in the topological closure of $\{x\}$ and contains that of $\{y\}$. We say that X is a causal space if whenever x, y are elements of X , the set $[x, y]$ is finite. Our aim in this project is the characterization of topological spaces $(X; T)$ such that there is a map $f : X \rightarrow X$ with $T = A(f)$. We, also, expect that this kind of topological spaces has curious categorical properties.

16. Project No. IN100028 Principal Investigator: Dr. Uwe Schavz (Math)**Title: Projective and Affine Berlekamp****Abstract**

In our Junior Faculty Research Project (JF090005) we discovered a surprising connection between Berlekamp's Light Switching Game and combinatorial problems involving exclusion rolls. Among these problems are deep and long standing problems about colorings and flows of graphs, as Tutte's three Flow Conjectures, the Hadwiger Conjecture, the Four Color Problem and the Jaeger Conjecture. More precisely, we examined subspaces (codes) U of Z_k^n – e.g. the bond or the cycle space over Z_k of an oriented graph – and called a *nowhere zero* tuple f in Z_k^n a *flow* of U if f is orthogonal to U . In order to detect flows, we viewed the subspace U as a light pattern on the n -dimensional *Berlekamp Board* Z_k^n with k^n light bulbs. The lights corresponding to elements of U are *ON*, the others are *OFF*. Then we allowed axis-parallel switches of complete rows, columns, etc. Our core result was that the subspace U has a flow if and only if the light pattern U cannot be switched off. In particular, a graph G has a nowhere zero k -flow if and only if the Z_k -bond space of G cannot be switched off. It has a vertex coloring with k colors if and only if a certain corresponding code over Z_k cannot be switched off. Similar statements hold for Tait colorings, and for nowhere zero points of matrices.

Our approach brought a new method into this field of mathematics, in which very many wide open conjectures are waiting to be solved. It reveals the yet unobserved importance of Berlekamp's Switching Game. However, in our Junior Faculty Project we only laid the theoretical fundament for the new method, provided the most basic tools, and discovered first applications to nowhere zero flows and colorings of graphs. The new project shall explore the new possibilities arising from the new point of view. Since our method is new, our enterprise is more a broad cultivation and foundation.

We will use, adapt and develop a wide range of techniques from diverse very different branches of combinatorics. This will include elementary combinatorics, projective and linear algebra over finite rings, algebraic combinatorics, Coding Theory and Matroid Theory. It shall extend the set of tools and the new working frame. For example we want to describe a projective version of the game. We also want to study a kind of Gröbner Bases. Furthermore, we think it should be possible to extend the set of possible moves in the game. These additional moves shall not turn a lost position into a winning position, but shall show that, in certain cases, even with additional moves, there is no winning way. In applications this nonexistence of a winning strategy is equivalent to such important properties as the existence of colorings and nowhere zero flows of graphs.

We expect that our new method can contribute to the development in several fields of combinatorics, for example to the theory of colorings and flows, Matroid Theory, Coding Theory and the theory of blocking sets in projective spaces. We will try to solve some of the problems in these fields, and may come up with new equivalents. Since we will traverse a very wide range of different combinatorial theories it is hard to say which methods are the most fruitful, and how the outcome will look like. Our ideas concerning a projective version, Gröbner Bases and “free” additional moves may not be the only promising approaches. We plan to bring out at least two innovative papers.

**17. Project No. IN100029 Principal Investigator: Dr. Ahmed Bendania (GS)
Co-Investigator: Dr. Abdullah El-Amin (GS)**

Title: Relationship of students choice of major and career orientation in Saudi state owned and private university students in Arabia

Abstract

This research attempts to explore the relationships between Saudi government and private university students' career orientation, their choices of academic majors and their personality characteristics. Career orientation guides the individual's choice of academic fields, specialization as well as the success in education. The students may well be motivated and focused, as they know the goals. There is some support that achievement motivation is an antecedent of exploration of careers while at college (Cheung and Arnold, 2010). The early choice of career seems to influence the choice of specialization as well the academic achievement, if the choice has been made earlier in high school (grade 12 for instance). In fact, Germeijs and Verschuerena (2007) study investigated consequences of high school students' career decision-making process for choice implementation in higher education. It showed that students who coped with career decisional tasks at the end of Grade 12 helped them significantly in the several aspects of early choice implementation (i.e., choice actualization, academic adjustment, commitment to the chosen study) during the first trimester in higher education.

The importance of these aspects of early choice implementation is demonstrated through their relationship with academic achievement during the first year in higher education. Certainly factors such as personality factors play an important role in career choices. Nauta (2010) suggests that reviewing Holland's Vocational Personalities suggest that such personality characteristics may be viewed for future directions of both general and academic counseling as well as career choices.

To test hypotheses, data will be collected from both state and private universities in Saudi Arabia. For reasons of samples comparison, the researchers will target students, specifically, samples of different levels (freshman, sophomore, and senior) from both types of universities and different majors and specializations. To measure the constructs of personality characteristics and career orientation, different scales will be adopted from the existing literature. The results and pertinent issues will be discussed in the light of the existing literature review and the Saudi Arabian student counseling and guidance context.

18. Project No. IN100030 Principal Investigator: Dr. Nasser-eddine Tatar (Math)

Title: On a viscoelastic problem on the whole space

Abstract

In elasticity the existing theory accounts for materials which have a capacity to store mechanical energy with no dissipation (of the energy). On the other hand, a Newtonian viscous fluid in a nonhydrostatic stress state has a capacity for dissipating energy without storing it. But, then, materials which are outside the scope of these two theories would be those for which some, but not all, of the work done to deform them, can be recovered. Such materials possess a capacity of storage and dissipation of mechanical energy. This is the case of "viscoelastic" materials.

We note, however, that unbounded domain and in particular the whole space \mathbb{R}^n have not been considered much in the literature. In fact there are very few papers in this subject. This case occurs in applications when the body under consideration is very large. In this project we propose to study a viscoelastic problem in the whole space \mathbb{R}^n . We will seek reasonable conditions under which the system stabilizes to the stationary state. This will be done for the case of a singular explicit kernel (relaxation function) and also for a more general type of kernels allowing for oscillating ones.

**19. Project No. IN100031 Principal Investigator: Dr. Numan Abu-Dheir (ME)
Co-Investigator #1: Dr. Shafique Khan (ME)
Co-Investigator #2: Dr. Abdulrahman Shuaib (ME)**

Title: Microforming Set up Development

Abstract

Microforming is an advanced manufacturing process that involves forming sheets with submillimeter thicknesses. It is one of the microfabrication processes being investigated by the research community which comes as a response to the ever-increasing demand for smaller and durable products. One of the main aspects of microforming process is the effect of sheet thickness on the formability and also on the optimum design of the forming dies. This proposal aims at introducing this new field of research through building a simple experimental setup to conduct microforming experiments and to propose a preliminary mathematical modeling of the process. Therefore the main objective of the proposal is to develop a microforming setup; to perform preliminary tests for characterizing microformed products, and to provide a preliminary investigation into mathematical modeling of Microforming.

- 20. Project No. IN100032 Principal Investigator: Dr. Khalil A. Ziq (Phys)**
Co-Investigator #1: Dr. Nouar Tabet (Phys)
Co-Investigator #2: Mr. A. Ghannam (Phys)
Co-Investigator #3: Mr. A.F. Salem (Phys)

Title: Oxygen vacancies effects on the properties of ZnO-TM

Abstract

The electronic properties of zinc oxide are largely determined by the charged native defects. Undoped ZnO samples show n-type conductivity usually associated with the presence of high concentration of doubly ionized oxygen vacancies or zinc interstitials. These defects are also responsible of the green band emission in the photoluminescence spectrum of ZnO. Doping with selected impurities and high temperature treatments are expected to affect the concentration of holes and oxygen vacancies. We propose to study the effects of oxygen vacancies on various electronic, optical and magnetic properties of zinc oxide samples doped with transition metals (ZnO-TM). High temperature annealing may also result in metal precipitates promoting clustering of the TM- impurities in ZnO-TM, which in turn affects various magnetic and optoelectronic properties of the materials.

- 21. Project No. IN100033 Principal Investigator: Dr. Samer F. Ahmed (ME)**
Co-Investigator: Dr. Mohammad Antar (ME)

Title: Combustion characteristics and Emissions of a HCCI-DI Diesel Engine Running with a Bio-Fuel Suitable for Saudi Arabian Environment

Abstract

Jojoba oil; an alternative to petroleum-based diesel fuel is to be developed and tested as a renewable energy source. The proposed bio-diesel is virtually compatible with commercial diesel engines and practically no engine modifications are required. It is important to mention that this oil is not used in food industry in which heavy consumption for fuel usage will not cause a food crisis. The jojoba oil is extracted from the jojoba shrub grown in Africa and in the Sonora desert in the south of the USA. This plant is very suitable to be grown in Saudi Arabia and all the middle east deserts for many reasons including its high resistance to dryness and bad weather and it can be planted in places that are not useful for food production in addition to less attention needed while planting the shrubs. Some trials to use this oil as fuel were monitored in the literature. More research work is needed to improve its characteristics to obtain high engine performance and low emissions.

This new fuel has very good potential to be used with the recent trends in combustion processes, the homogeneous charge compression ignition systems (HCCI). It is planned to study the combustion characteristics (spray, injection timing, ignition timing and knocking), and the engine performance and emissions of the HCCI engine running with jojoba methyl ester (JME). Results of this study are believed to shed light on the possibility of producing and using this easy-to-plant on a large scale, new alternative renewable energy source. In addition, it will guide future development of new combustion mode and show possibility of expanding the operating range of HCCI engines. It is well understood that the Kingdom is a key player in the area of fossil fuel production and it is believed that results of this study may pave the road to ensure its location as a major bio-fuel producer.

**22. Project No. IN100034 Principal Investigator: Dr. Khalil Harrabi (Phys)
Co-Investigator #1: Dr. Khalil Ziq (Phys)
Co-Investigator #2: Dr. Ahmed Salem (Phys)**

Title: Detection of Sudden Excitations by Nanometric Superconducting Films

Abstract

Through the present Proposal, our objective is to set up a new line of experimental research in the KFUPM Superconductivity Laboratory, centered on the transient electrical properties of thin films exposed to pulsed electrical, thermal, or optical excitations. For that purpose, we are planning to cooperate with two academic laboratories overseas, already active in the field of current-induced superconductivity breakdown, as well as in related modern applications such as single-particle detectors and high-current components. Those are Ecole Normale Supérieure in Paris, France (Laboratoire Pierre Aigrain LPA-ENS) and Santiago de Compostela, Spain (Bassas Temperaturas y Superconductividad, LBTS-USC). Reasonably, the nanosecond pulse measurement system, not presently available at KFUPM, could be installed and made operational within the three-year academic period 2010-2013. The microstrip samples required in this study would be provided and tested by LPA-ENS for metallic materials (niobium Nb, or niobium nitride NbN), and by LBTS-USC in the case of YBa₂Cu₃O₇ (YBCO) epitaxial films. While most of the task is to be performed in the three locations independently, some provision would be allowed for direct personal interaction, at one or the other of these sites. The problems addressed in the DSENSF proposal can be summarized as follows : - Temporal development of the current-induced transition to the resistive state, resulting in two types of localized states, phase-slip centers (PSC) [1], or normal Hot Spots (HS) [2], in bridges of nanometric size. - Temperatures reached in these PSC and HS states, associated with the speed of HS expansion, both in metallic superconductors [3] or in high-critical temperature (HTc) materials [4], that are presently the main concern of the KFUPM laboratory. Thermally-induced transition into the normal resistive state [5], with in view low-dissipation YBCO components for the control of high current densities [6]. Response of current-biased nanowires to extremely low optical excitations [7,8].

**23. Project No. IN100035 Principal Investigator: Dr. Rajai Al-Assar (Math)
Co-Investigator: Dr. Mohammed El-Gebeily (Math)**

Title: Unsteady Heat Conduction from Sphreoids

Abstract

In this project, we study the unsteady heat conduction from a spheroid (prolate and oblate) initially heated and then left to cool in an unbounded fluid of a constant temperature. We make use of the Spheroidal Wave Functions, originally developed in the context of the wave equation, as basis for our solution. We study the time development of the temperature distribution inside the spheroid and the heat flux across the surface as a function of the oblateness parameter.

24. Project No. IN100036 Principal Investigator: Dr. Abdul-Wahid A. Saif (SE)
Co-Investigator #1: Dr. Moustafa El-Shafei (SE)
Co-Investigator #2: Dr. Mujahid Dhaifullah (SE)

Title: Integrated Guidance and Control of Unmanned Aerial Vehicle (UAV)

Abstract

Unmanned Air Vehicle (UAV) is gaining an increased interest in the international community as UAV usages have proved of paramount importance not only in military domain but mostly and more importantly in civil sector. More UAVs are deployed in various applications such as board security, freight carriage, agriculture, reconnaissance, drug control, and other fields, have confirmed the need for continued research in this rich research arena.

As far as this research project is concerned, focus will be on control and guidance to provide autonomous capability. As no pilot in the loop to take corrective actions, the design of control and guidance systems has gained great interest in the recent years.

Traditionally, the design of such systems used to be tackled separately and then integrated together. Similarly, the control system used to be handled one loop at a time and then the three autopilots (pitch, yaw, and roll) are combined. Nowadays, all the three loops are integrated in the design process using modern multivariable control technology (such as H_∞ , or μ -synthesis). Not only this level of integration has been attained but also effort has been made to integrate the design of the control and guidance together and one combined state-vector to cover the control variables and guidance states. In this project, the intent is to design and integrated control and guidance systems for a typical UAV using modern technologies and also employing in the same time additional built-in features that can increase the safety of the UAV.

27. Project No. IN100039 Principal Investigator: Dr. Anvarhusain Isab (Chem)
Co-Investigator #1: Dr. Mohammad Wazeer (Chem)

Title: NMR Studies of Possible Interaction of novel potential anticancer Gold (III) complexes with biologically important ligands

Abstract

This proposal is about synthesis and characterization of $[Au(\text{alkyldiamine})_2]Cl_3$ complexes and its derivatives, which are isoelectronic to cis-Pt anti-cancer drug. By utilizing ethylenediamine (*en*), propylene diamine (*pn*) and butylenediamine (*bn*) as chelating agents to Au(III) to form 5, 6 and 7 member ring complexes respectively, the effect of ring size will be studied. We will also synthesize complexes with various R groups (Me, Et, Pr, iPr etc) attached to *en*, and study the effect of R groups on the nature of bonding to Au(III).

The interactions of the above complexes with various naturally occurring thiols such as cysteine, and glutathione and thione such as ergothionine along with other thiols and thioether such as L-Methionine will be studied in aqueous solution. 1H , ^{13}C , ^{15}N solution NMR will be utilized to study these interactions. The interactions study will be extended for histidine which is a very important amino acid and known to be involved in complexations with several transition metal ions including cis-platin anti cancer drug.

- 28. Project No. IN100040 Principal Investigator: Dr. Basheer Haider (Phys)
Co-Investigator #1: Dr. S.M.A. Durrani (Phys)
Co-Investigator #2: Dr. M.F. Al-Kuhaili (Phys)**

Title: Growth and Characterization of GaN by Pulsed Laser Deposition

Abstract

For the past few decades, III-V compound semiconductors especially GaN has attracted much attention. Due to its direct and wide bandgap, GaN is one of the best candidates for optoelectronic devices such as solar cells, photodectors, light emitting diodes, and lasers. GaN has been grown using various techniques including molecular organic vapor phase epitaxy (MOVPE), and molecular beam epitaxy (MBE). We are proposing to grow this material using Pulsed Laser Deposition (PLD). After the growth, samples will be characterized using X-ray diffraction to measure the crystallinity of the sample. Surface study of the grown films will be performed using atomic force microscopy. Chemical surface and bulk analysis, of the grown films, will be performed. Optical properties of the grown GaN thin films will also be studied as a measure of the quality of the films.

- 29. Project No. IN100041 Principal Investigator: Dr. Mohammad Faiz (Phys)
Co-Investigator #1: Dr. Abdulaziz Al-Jalal (Phys)
Co-Investigator #2: Dr. Mohammad Kariapper (Phys)**

Title: Computer Aided Laboratory Manual for General Physics-1 [Bookwriting Project]

Abstract

Laboratory module of general physics course serves as an important tool for students to comprehend the difficult physics concepts. Recent advancement in computer technology is shaping the way the physics laboratories are taught. Many computer-aided experiments are now available for introductory physics courses. These experiments allow students to vary different parameters quickly and explore the relevant physics concepts in great detail. Thus, students are able to learn more physics in a 3-hour lab session compared to the traditional way of teaching introductory physics labs. Furthermore, students are able to spend more time on hands-on experiments with inquisitive minds. A carefully written lab manual is vital for the successful introduction of computer-aided experiments in general physics courses. In addition, if the targeted students are not native English speakers, then the manual should be written in simple English. By synchronizing the sequence of the experiments with the topics covered in the lecture module of the course, students will have better grasp of the concepts covered.

Recognizing these facts, we intend to produce such a lab manual for the course *General Physics I*. This could be used as the lab manual for PHYS-101 at King Fahd University of Petroleum and Minerals as well as other universities and colleges in the Kingdom and

outside. One chapter will be devoted for each experiment. The write-ups will be comprehensive and self-descriptive so that students would need minimum help from the lab instructor. Color photographs of the actual experimental set-ups will be used, in addition to schematics, in the lab manual. This will make it easy to understand the procedure of the experiments. Force and motion sensors along with the software *DataStudio* developed by PASCO, a USA based company, will be used to introduce many computer-aided experiments. Pre-programmed *DataStudio* files, customized to selected experiments, will be included in the lab manual for data acquisition. This will simplify the data acquisition process and thus keep the students focused on learning the relevant physics concepts. Students will also be exposed to *Microsoft Excel* for plotting graphs and analyzing data. The methodology of the lab manual will encourage students to read and execute the written instructions themselves and thereby become self confident while upholding team work spirit. Students will also learn computer skills along with physics. The role of the instructor will be facilitator, which is the new trend in the learning process. All the authors will be responsible for selecting appropriate experiments to synchronize with lectures, selecting suitable set-ups for the selected experiments, trying out the experiments, and writing the write-up for each experiment. A pilot study will be conducted, in parallel, for each chapter with a group of PHYS-101 students at KFUPM.

30. Project No. IN100042 Principal Investigator: Dr. Mohammad Shwehdi (EE)
Co-Investigator #1: Dr. Mohammad Gondal (Phys)
Co-Investigator #2: Mr. Khaled Y. Al-Soufi (RI)
Co-Investigator #3: Mr. Umar Johar (EE)

Title: Scrutinize Failures Causes of Real Distribution Underground Cable System of Saudi Electric Company (SEC)

Abstract

It is almost the whole year around that underground cables are exposed to very severe weather and load cycles which add to the latent heat stored in the earth soil in many areas of the Kingdom. All of these peculiar features of the Kingdom hot and harsh climate add tremendous heat to soil and higher thermal dynamics stresses on underground cable materials may develop and shortens their lifetime.

The proposed project will investigate and evaluate the thermal degradation in electrical cables and other causes. It also will characterize the electric breakdown of insulated Cables due to moisture and water penetration and especially plastic insulated multiconductor cables which can seriously effect the electrical properties of such devices/or conductors The problem of water penetration is amplified when the electrical cable is positioned underground or in a high humidity environment. The entrance of water between insulated conductors can lead to the development of electrical leakage pathways between conductors having pinhole insulation defects. Among other causes of water entry to bad quality of cables, the presence of excessive water absorbing agent in the polymer insulating material could enhance the water solubility and cracks in the electrical cable *by forming the so called water trees*; this phenomenon will be investigated using advanced method like Laser Induced Breakdown Spectroscopy (LIBS).

31. Project No. IN100043 Principal Investigator: Dr. Khaled Gasmi (Phys)**Title: Synchronous Fluorescence Spectroscopy of Edible Oils from Saudi Origin****Abstract**

The objective of this research project is to develop a low cost, easy to use, and reliable analytical tool for controlling the authenticity and quality of edible oils mostly from Saudi origin. The Synchronous Fluorescence Spectroscopy is proposed to be a simple, rapid, and routine technique for the analysis of edible oils in real time and in situ, and without the pre-analysis procedures. This analytical technique is expected to provide high sensitivity and selectivity, which are important in chemical analysis and the major issue in the edible oil market. First of all, we expect to be able to determine the composition, and consequently, the authenticity of edible oils. Secondly, we expect to be able to determine the most important parameters that define the oil quality. Finally, we will study edible oil oxidation under thermal and UV stress.

**32. Project No. IN100046 Principal Investigator: Dr. Mohammad Alshayeb (ICS)
Co-Investigator #1: Dr. Sajjad Mahmoud (ICS)****Title: Integrated Unified Modeling Language (IUML)****Abstract**

The Unified Modeling Language (UML) is standard modeling language created by the object management group (OMG). UML allows software engineers specify, visualize, modify, construct and document object-oriented software applications artifacts. OMG also provides a generic extension mechanism for customizing UML models for particular domains and platforms called UML profiles. Researchers realized that UML is not enough to model all aspects of software, therefore, many researchers proposed extensions to UML. These proposed extensions are not linked together into one integrated model. Therefore, the main objective of this research is to propose an integrated UML (iUML) that integrates the existing UML extensions into one integrated form. This includes proposing an integrated diagram for each UML diagram that includes its proposed extensions and also includes modifications to the UML meta-model as a result of the proposed integrated diagrams. Existing extensions on each UML diagram will be collected and analyzed and then integrated into one diagram. A prototype tool will also be developed in order to validate the proposed iUML and build UML models using IUML.

3. RESEARCH/BOOK-WRITING PROJECTS CURRENTLY SUPPORTED BY THE UNIVERSITY

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
College of Engineering Sciences		
Aerospace Engineering	Dr. Ahmad Z. Al-Garni (AE) Dr. Aymen H. Kassem (AE)	Outdoors Economic Cooling System (IN10001)
Chemical Engineering	Dr. Usamah Al-Mubaiyedh	The Stability and Dynamics of Non-Isothermal Taylor-Coutte Flow: Influence of Viscous Heating, Buoyancy and Fluid Thermal Sensitivity (CHE/TAYLOR-LOW/262)
Chemical Engineering	Dr. Nadhir Al-Baghli	Photoxidation of MTBE in the Presence of Hydrogen Peroxide (CHE/MTBE/275)
Chemical Engineering	Dr. Saleem ur Rahman (Che) Dr. Ahmad Yamani (EE)	Development of Solid-Liquid Mass Transfer Probe Based on Limiting Diffusion Current: Application to Stirred Tanks (CHE/MASS/302)
Chemical Engineering	Dr. Ramazan Kahraman Dr. Saleem ur Rahman Dr. Mesfer Al-Zahrani (CE) Dr. Salah Al-Dulaijan (CE)	Corrosion Investigation of Stainless Steel and Stainless Steel Clad Reinforcing Bars (CHE/STEEL/ 320)
Chemical Engineering	Dr. Habib Al-Ali Dr. Habib Zughbi (Consultant)	Investigation of the Hydrodynamics of a Moving Bed Reactor. (CHE/MOVING BED/328)
Chemical Engineering	Dr. Saleem ur Rahman (Che) Dr. O.S.B. Al-Amoudi (CE) Dr. Shamshad Ahmad (CE)	An Exploratory Study on Corrosion Protection of Reinforcing Steel in Concrete Using Conducting Polymers (CHE/POLYMER/329)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Chemical Engineering	Dr. Javaid Z.M. Zaidi (Che) Dr. Ibnelwaleed Hussain (Che) Dr. Usamah Mubaiyedh (Che)	Separation of Binary Organic Mixtures Using Novel Composite Polymeric Membranes by Pervaporation (CHE/Binary/341)
Chemical Engineering	Dr. Ibnelwaleed Hussein, Dr. Basel F. Abu Sharkh, Dr. Muhammad Al-Arfaj, Dr. João B.P. Soares, Professor of Chemical Eng., University of Waterloo, Canada	Synthesis; Solution, Melt, and Solid-State Properties; and Modeling of Metallocene Polyolefins with Controlled Long Chain Branching (CHE/Metallocene/347)
Chemical Engineering	Dr. Muataz Ali Atieh	Production of Carbon Nanotubes (CNTs) by Using Fluidized Bed Chemical Vapor Disposition (FB-CVD) for Nanotechnology Application (CHE/VAPOR/449)
Chemical Engineering	Dr. Halim H. Redhwi Dr. M. Nahid Siddiqui	Durability of Thermoplastic Nano-Composites under Local Weather Exposure and the Applicability of the Reciprocity Rule to their Ultraviolet Initiated Degradation (IN100021)
Civil Engineering	Dr. Ali Al-Gadhib	Numerical Simulation of the Evolved Physico-Chemical Distress in Concrete Repairs and Concrete Structures (Sabbatical Leave) (CE/CONCRETE/313)
Civil Engineering	Dr. M.H. Baluch Dr. Ali Al-Gadhib Dr. Ahmad S. Al-Gahtani Dr. M. Kalimur Rahman	Engineering Guidelines for Application and Design of Prestressed Precast Hollow Core Concrete Slabs Strengthened with CFRP Sheets (CE/Design/336)
Civil Engineering	Dr. Husain J. Al-Gahtani Dr. Faisal Fairag (Math)	Application of Radial Basis Functions to Incompressible Solids and Fluids (CE/IN080411)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Civil Engineering	Dr. Nedal Ratrouf	A Proposed Procedure for Determining Time-of-Delay (TOD) Breakpoints Using Clustering Technique under Local Traffic Conditions (CE/TRAFFIC/433)
Civil Engineering	Dr. Salah Al-Dulaijan Dr. Mohammad Maslehuddin Dr. Mohammad Al-Zahrani	Performance Evaluation of Corrosion-Resistant Reinforcing Steel Bars-Service Life Prediction and Service Life Cost (CE/STEEL/465)
Civil Engineering	Dr. Mohd. Maslehuddin Dr. Luai Al-Hadrami –ME Dr. Salah Al-Dulaijan-CE	Evaluation of Mechanical Properties and Durability of Electric Arc Furnace Slag: Aggrégate Concrete [CE/ARC/472]
Electrical Engineering	Dr. Mohammad Landolsi Dr. Wajih Abu-Al-Saud Engr. Ahmad Abul-Hussain	Development of a Software-Defined Radio Platform for Communication System Design (EE/Platform/332)
Electrical Engineering	Dr. Tarek Y. Al-Naffouri	Broadcasting Data to Multiple User Groups: Information Theoretic Investigation of the wide Band Case (EE/Data/373)
Electrical Engineering	Dr. Mohammad Abido Dr. Ibrahim El-Amin Dr. A.H. Abdur Rahim Dr. Ibrahim Habiballah	Static Synchronous Compensator-based Stabilizer Design and Implementation (EE/DESIGN/450)
Electrical Engineering	Dr. M.H. Shwehdi Dr. Mohammad Gondal Mr. Umar Jauhar (EE)	Identifying the Causes of Low Voltage Cable Outages by Applying Explicit Measures and Laser Induced Breakdown Spectroscopy (LIBS) (EE/VOLTAGE/427)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Electrical Engineering	Dr. M.H. Shwehdi Dr. M.A. Gondal Mr. Khaled Al-Soufi Mr. Umar Johar	Scrutinize Failure Causes of Real Distribution Underground Cable System of Saudi Electric Company (SEC) (IN100042)
Mechanical Engineering	Dr. Mohammad Hawwa	Ultrasonic Characterization of Inhomogeneous Cladded Plates (ME/Ultra/431)
Mechanical Engineering	Dr. Mohammad Antar Dr. Rached Ben Mansour Dr. Salem Al-Dini	Fluid Flow and Heat Transfer Characteristics in a Varying Speed Lid-Driven Cavity (ME/CAVITY/428)
Mechanical Engineering	Dr. S.A.M. Said Dr. M.A. Habib Dr. T.Y. Ayinde	Characterization of Natural Convection Heat Transfer in an Array of Discrete Heat Sources (ME/HEAT/438)
Mechanical Engineering	Dr. Mohammad Antar Dr. S.F. Ahmad	Experimental and Theoretical Investigations of Knock Tendency and Emissions of a Spark Ignition Engine Fueled with Gasoline Octane 91 and 95 (ME/SPARK/444)
Mechanical Engineering	Dr. S.A.M. Said Dr. M.A. Habib Dr. T.F. Ayinde	Experimental Investigation of Flow Mal-Distribution in Air Cooled Heat Exchangers (ME/Flow/447)
Mechanical Engineering	Dr. Abdesalam Al-Sarkhi Dr. Luai Al-Hadhrami	Study of Oil-Water Flows in a Horizontal Pipeline (ME/Oil-Water/448)
Mechanical Engineering	Dr. Mehmet Sunar Dr. Khalid Al-Dheyman	Analysis of Functionally Graded Thermopiezoelectro-Magnetic Materials (ME/MAGNET/451)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Mechanical Engineering	Dr. Ahmet Sahin Dr. Bekir Sami Yilbas	The Effect of Viscosity Variation in Thermodynamic Analysis of Fluid Flow (ME/FLUID FLOW/462)
Mechanical Engineering	Dr. Yagoub Al-Nassar Dr. Mohammad Hawwa	Wave scattering at a tapered free end of an elastic plate (ME/WAVE/476)
Mechanical Engineering	Dr. Abdelsalam Al-Sarkhi Dr. Meamer El Nakla Dr. Wael Ahmed	Effect of Drag Reducing Polymers in Multiphase Flow: Theoretical Approach (ME/Drag/481)
Mechanical Engineering	Dr. Syed Fida Hassan Dr. Zuhair Gasem Mr. F. Patel	Fatigue, Creep, and Corrosion Properties of new generation Magnesium Nanocomposites (IN100013)
Mechanical Engineering	Dr. Adrian Bejan Dr. Bekir Sami Yilbas Dr. Ahmet Sahin	Distributed Energy System: The Tapestry of Multi-Scale Design in the Globe (IN100025)
Mechanical Engineering	Dr. Numan Abu Dheir Dr. Shafique Khan Dr. Abdulrahman Shuaib	Microforming Set up Development (IN100031)
Mechanical Engineering	Dr. Samer F. Ahmed Dr. Mohammad Antar	Combustion characteristics and emissions of a HCCI:-DI Diesel Engine Running with a Bio-Fuel Suitable for Saudi Arabian Environment (IN100033)
College of Computer Sciences & Engineering		
Information & Computer Science	Dr. Wasfi Al-Khatib Dr. Sabri A. Mahmoud	Toward Content-Based Indexing and Retrieval of Arabic Manuscript (ICS/INDEX/325)
Information & Computer Science	Dr. Mohammad Al-Shayeb	Classification of Aspect Oriented Refactoring Methods Based on Software Quality Attributes (ICS/Aspect/446)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Information & Computer Science	Dr. M. Sarfraz Dr. Sabri A. Mahmoud	Toward Content-Based Indexing and Retrieval of Arabic Manuscript (ICS/Optical Test/337)
Information & Computer Science	Dr. Khaled Salah Dr. Mohammad Sqalli	Intelligent Firewall DoS Attacks and Countermeasures (ICS/Firewall/361)
Information & Computer Science	Dr. Farag Azzedin	I/O Request Handling in Web Servers: Issues and Solutions (ICS/WEB/430)
Information & Computer Science	Dr. Farag Azzedin Dr. Sajjad Mahmoud	Trust Model for Context-Aware Systems: An Aspect-oriented Approach (ICS/Trust/483)
Information & Computer Science	Dr. Mohammad El-Attar Dr. Mohammad Elish Mr. Irfan Ahmed	Improving the Quality of Misuse Case Models (IN100016)
Information & Computer Science	Dr. Sajjad Mahmoud Mr. Mohammad Ali Khan	An Integrated Requirements Analysis and Component Selection Approach for Component-Based Software Systems (IN100023)
Information & Computer Science	Dr. Lahaouri Ghouti	Digital Imaging and Computer Vision: Digital Copyright, Biometrics and Forensic Systems [Bookwriting project] (IN100019)
Information & Computer Science	Dr. Mohammad Alshayeb Dr. Sajjad Mahmoud	Integrated Unified Modeling Language (IUML) (IN100046)
Computer Engineering	Dr. Aimen El-Maleh Dr. Ahmad Al-Yamani	Transistor-Level Defect Tolerant Digital System Design at the Nanoscale (COE/Nanoscale/387)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Computer Engineering	Dr. Uthman Baroudi	Distributed Self-Healing Algorithms for Wireless Sensor and Actor Networks (COE/Sensor/437)
Systems Engineering	Dr. Umar Al-Turki Dr. Shokri Z. Selim Dr. Abdulbasit Andijani	On Stochastic Single Machine Early-Tardy Scheduling SE/SCHEDULE/191
Systems Engineering	Dr. Malick Ndiaye	Locating Facilities with Various Distance Functions (SE/ LOCATION/307)
Systems Engineering	Dr. Salih O. Duffuaa Dr. Mohammad Darwish Dr. Ahmed Haron	Multi-Objective Mathematical Models for Process Targeting (SE/MATH MODEL/321)
Systems Engineering	Dr. Muhammad Shafiq Dr. Fouad Al-Sunni	Adaptive Tracking of Non-Minimum Phase Discrete-Time Plants Using Inverses of Signals (SE/DISCRETE TIME/323)
Systems Engineering	Dr. Mohammad Ben Daya Dr. Salih Duffuaa Dr. Abdul Raouf	Maintenance Engineering and Management (Book Editing Project) (SE/Maint.Mgt/331)
Systems Engineering	Dr. Chawki Fedjki Dr. Salih Duffuaa	Heuristics for QAP Using a Characterization of a B-Local Star Minimum (IN080391)
Systems Engineering	Dr. Ammar Khoukhi Dr. Fouad Al-Sunni	A Hybrid-Multi-Agent System for Intelligent Distributed Control of Collaborative Robots (SE/HYBRID/441)
Systems Engineering	Dr. Magdi Mahmoud	Decentralized Control and Filtering in Dynamical Interconnected Systems [Bookwriting Project] (IN100015)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Systems Engineering	Dr. Moustafa El-Shafei	Modern Distributed Computer Control Systems (SE/Control/474)
Systems Engineering	Dr. Magdi Mahmoud Dr. Fouad Alsunni	Development of Performance Analysis and Design Methods for Interconnected Control and Communications Systems (IN100018)
Systems Engineering	Dr. Abdulwahid Saif Dr. Moustafa El-Shafei Dr. Mujahid Dhaifullah	Integrated Guidance and Control of Unmanned Aerial Vehicle (IN100036)
College of Industrial Management		
Department of Management & Marketing	Dr. Alhassan Abdulmuhmin Mr. Irfan Ilyas (Mgt & Mkt)	Awareness, Adoption and Maturity Level of Customer Relationship Management (CRM) Practices in Saudi Companies (CIM/Customer/338)
Department of Management & Marketing	Dr. Mansour Murad (Management & Marketing)	An Empirical Study on the Factors Influencing Employer Decisions in Hiring and Retaining Individuals with Disabilities in the Arab World (Mgt/Hiring/349)
Department of Management & Marketing	Dr. Mourad Mansour Dr. Mustapha Achoui	Gender and Job Satisfaction among Employees in Saudi Arabia (MGT/Gender/381)
Department of Management & Marketing	Dr. Roland Yeo Dr. Mohammad Youssef	Knowledge Sharing Behavior in Organizational Contexts: The Case of Saudi Arabia (CIM/KNOWLEDGE/443)
Department of Management & Marketing	Dr. Mohammad Youssef Dr. Roland Yeo	A Structural Equation Modeling Approach to Study the Factors that Influence Customers' Intention to Adopt Internet Banking in Saudi Arabia (CIM/INTERNET/452)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Department of Management & Marketing	Dr. Razali Matt Zin Dr. Obaid M. Al-Shuraidah	Ethical Orientations Among Saudi and Malaysian Undergraduate Students: A Comparative Study (CIM/ETHICAL/412)
Department of Management & Marketing	Dr. M. Sadiq Sohail Dr. Obaid Al-Shuraidah	The Influence of Product Modularity on Competitive Performance: An Empirical Investigation (CIM/EMPIRICAL/440)
Department of Management & Marketing	Dr. Mohammad Youssef Dr. Mohammad Al-Bureay Dr. Mourad Mansour	The Synergistic Impact of ISO 9000 and TQM on Product Quality, Inventory Turns and Time-Based Performance (CIM/SYNERGY/466)
Department of Management & Marketing	Dr. Mohammad Asad Sadi	Barriers Towards Business Entrepreneurship: A Focus on Saudi Arabia and Bahraini Businesswomen (CIM/Entrepreneurship/469)
Department of Management & Marketing	Dr. Salem Alghamdi	The impact of Globalization on Auto Car Business: Empirical Investigation of Saudi Consumers (CIM/Autocar/482)
Department of Management & Marketing	Dr. Abdallah M. El-Amin and Dr. Marwan Al-Quran	Relationships among Organizational Justice, Trust and Organizational Citizenship Behavior: A Study of Employees in Private and State-Owned Manufacturing Enterprises in Saudi Arabia (MGT/TRUST/488)
Department of Finance & Economics	Dr. Mohammad Al-Sahlawi	An Alternative Oil Pricing Currency to Impact OPEC's Economies and the US Geopolitical Power (IM/OIL PRICING/424)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Department of Finance & Economics	Dr. Reza F. Aghdam Dr. Talat Ulussever and Dr. Musen Al-Hejji	Impacts of Electricity Reforms on Macro-economic Growths: An Application of the Ad Hoc Panel Data Modeling (FIN/DATA/487)
Department of Finance & Economics	Dr. Mohammad Ramady	The Saudi Arabian Economy: Policies, Achievements and Challenges (2 nd Edition) (IN100014)
College of Sciences		
Chemistry	Dr. Bassam El-Ali Dr. Jimoh Tijani (Chemistry)	Rhodium-Catalyzed one Pot Hydroformylation-Cyclization Reactions of Allybenzene Derivatives (CY/BENZENE/379)
Chemistry	Dr. Anvarhusain Isab Dr. Mohammad I.M. Wazeer (Chemistry)	Redox and Ligand Exchange Reaction of Gold(III) Cyanide and Gold(III) Seleno-Cyanide with Various Biologically Important Ligands (CY/LIGAND/421)
Chemistry	Dr. Sasa Antonijevic (Chem) Dr. Zain Yamani (Physics)	Probing Dynamics of Nanotubes: Water Molecules by 2H Solid-State NMR Spectroscopy (CY/Nanotubes/465)
Chemistry	Dr. Abdulaziz Al-Saadi (Chem) Dr. Nissar Ullah (Chem)	Conformational Properties and Vibrational Assignments of 2-methoxyresorcinol and 4,6-Dihaloresorcinols: Experimental and ab initio study [CY/AB-INITIO/471]
Chemistry	Dr. Abdulrahman Al-Arfaj Dr. M. Nahid Siddiqui	Problem of Solving for Freshman Chemistry I [CY/Problems/470]

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Chemistry	Dr. Basheer Chanbasha, Dr. Khalid Al-Hooshani and Dr. Abdulaziz Al-Sadi	Development of Application of Electro mediated Extraction (EME) followed by High-performance Liquid Chromatography Ultraviolet Detection for the Determination of Poenoxy Herbicides in Water (CY/EXTRACTION/486)
Chemistry	Dr. Anvarhusain Isab Dr. Mohammad Wazeer	NMR Studies of possible interaction of novel potential anticancer Gold(III) complexes with biologically important ligands (IN100039)
Mathematical Sciences	Dr. Said Berrimi (DCC) Dr. Salim Messaoudi	Study of Decay in Some Thermoelastic Systems (MS-DCC/Decay/360)
Mathematical Science	Dr. Steven Binns	Algorithmic Complexity and Effectivity Closed Classes (MS/IN080410)
Mathematics & Statistics	Dr. Ahmed Bouketir Dr. H. Bahlouli (Physics)	Intrinsic Localized Vectorial Modes in BEC and Optical Waveguide Systems with Cubic-Quintic Nonlinearity (MATH/WAVEGUIDE/439)
Mathematics & Statistics	Dr. Salim Messaoudi (Mathematics & Statistics)	General Boundary Stabilization in Thermo-Elasticity (MS/BOUNDARY/445)
Mathematics & Statistics	Dr. Mihai Halic	Semi-stable vector bundles over Fibred varieties (MS/Vector/ 477)
Mathematics & Statistics	Dr. Mohammad Aslam Chaudhry	Extension of Ramanujan's Interpolation Formula and Applications of His Master Theorem (MS/Ramanujan/480)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Mathematics & Statistics	Dr. Boubaker Smii	Summability of the Solution of the Generalized KPZ Equation (MS/EQUATION/489)
Mathematics & Statistics	Dr. Nasser-eddine Tatar	Second Order Fractional Evolution Differential Equations (MS/ORDER/490)
Mathematics & Statistics	Dr. Jawad Abuihlail	Monads and Comonads in Varieties (MS/MONADS/491)
Mathematics & Statistics	Dr. Soliman Al-Homidan Dr. Qamrul Hasan Ansari (Consultant)	Generalized Invexity, Non-Smooth Vector Optimization and Vector Variational-like Inequalities (MS/Vector/492)
Mathematics and Statistics	Dr. A.S. Bonfah	Dynamics of Singularly Perturbed Dissipative Evolution Equations (IN100017)
Mathematics and Statistics	Dr. Assane Lo	Phase Transitions in Higher Dimensional Kac-like Models (IN100022)
Mathematics and Statistics	Dr. Othman Echi Dr. Ibrahim Rassi	A Generalization of Carmichael Numbers (IN10026)
Mathematics and Statistics	Dr. Hassen Muttalak Mr. Salah Mohammad	Group Sequential Testing for Binary Data Based on Ranked Set Sampling Methods (IN100024)
Mathematics and Statistics	Dr. Othman Echi	A Categorical Study of Some Typical Examples of Alexandroff Spaces (IN100027)
Mathematics and Statistics	Dr. Uwe Schavz	Projective and Affine Berlekamp (IN100028)
Mathematics and Statistics	Dr. Nassereddine Tatar	On a Viscoelastic Problem on the Whole Space (IN100030)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Mathematics and Statistics	Dr. Rajai Alassar	Unsteady Heat Conduction From Spheroids (IN100035)
Physics	Dr. A.K. Aksoy (Physics) Mr. Mohammad Raashid (Physics)	Enhancement of Technical Capability of the 14 MeV FNAA Facility at KFUPM (PH/FNAA Facility/357)
Physics	Dr. Khalil Ziq Mr. A. Ghannam Mr. A.F. Salem	Magnetic Properties of ZnO-TM Semiconductor (PH/Magnetic/364)
Physics	Dr. Abdullah Alsunaidi	Dynamics and Morphology of Phase Separating Liquid-Crystal/Polymer Blends (PH/Crystal/382)
Physics	Dr. Khalil Ziq Dr. Nouar Tabet Mr. A. Ghannam Mr. A.F. Salem	Oxygen vacancies effects on the properties of ZnO-TM (IN100032)
Physics	Dr. Khalil Harrabi Dr. Khalil Ziq Dr. Ahmed Salem	Detection of Sudden Excitations by nanometric superconducting films (DSENSF) (IN100034)
Physics	Dr. Basheer Haider Dr. S.M.A. Durrani Dr. M.F. Al-Kuhaili	Growth and Characterization of a GaN by Pulsed Laser Deposition (IN100040)
Physics	Dr. Abdulaziz Aljalal Dr. Ibrahim Nasser Mr. Khateeb-ur-Rahman	Manual Editing entitled General Physics: Multiple-Choice Questions: Waves, Thermodynamics, Electricity and Magnetism (PH/Multiple Questions/384)
Physics	Dr. Mohammad Al-Kuhaili Dr. S.M.A. Durrani Dr. A.M. Al-Shukri	Growth of Molybdenum Oxide Thin Films Using Pulsed Excimer Laser Deposition (PH/FILM/434)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
Physics	Dr. Mohammad Faiz Dr. Abdulaziz Al-Jalal Dr. Mohd. Kariapper	Computer Aided Laboratory Manual for General Physics I [Bookwriting Project] (IN100041)
Physics	Dr. Abdullah Al-Sunaidi Dr. Akhtar Naqvi Dr. M.I. Al-Jarallah Dr. Anvarhusain Isab	Adsorption and Dissociation of Hydrogen Sulfide (H ₂ S) on Functionalized ZnO Nanoparticles and Nanotubes : A Computational Study (PH/NANO/435)
Physics	Dr. F.Z. Khiari (Phys) Mr. Khateeb-ur-Rahman, Mr. Rashid Mohammad, and Mr. Azad-ul-Islam	Design and Test of a 14 MeV Neutrons Based Prompt Gamma Neutron Activation Analysis Set up to Determine H, C, N and O Elements Concentration in Bulk Samples with Low Atomic Number (Z) (PH/Neutron/464)
Islamic & Arabic Studies Department	Dr. Abdul Karim Zahrani Dr. Moustafa El-Shafei Ahmed, Dr. Atef Al-Najjar, Dr. Essam Eid Abu-Gharbia, Dr. Saeed Ben Ali Al-Amri, Dr. Abdul-Majeed Al-Mubarak and Mr. Husni Al-Muhtaseb	Automatic Voice Identification of Arabic Poetry Meters (IAS/POETRY/426)
General Studies	Dr. Ahmed Bendania Dr. Abdullah El-Amin	Relationship of students choice of major and career orientation in Saudi state owned and private university students in Arabia (IN100029)
Physics	Dr. Khaled Gasmi	Synchronous Fluorescence Spectroscopy of edible oil from Saudi Origin (IN100043)

College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code
College of Environmental Design		
Architecture Department	Dr. Rabee Reffat (ARC) Dr. Emad El-Sebakhy (ICS)	A Semantic Based Virtual Design Environment for Digital Designing in Architecture (ARC/SEMANTIC/311)
Architecture Department	Dr. Rabee Reffat (ARC) Mr. Mir Sabeer Hamid Mr. Yaman Khaeruzzan (ICS)	A Knowledge-Based Tool for Contextual-Based Assessment of Intelligent Buildings (AR/Knowledge/405)
City & Regional Planning	Dr. Adel Aldosary Mr. Khan Mohammad Nahi-duzzaman Dr. Ali Al-Naser	Socio-Cultural Analysis of Third Places Through GIS: A Case Study of Al-Khobar (CRP/GIS/432)
Construction Engineering and Management Dept.	Dr. Ashraf El-Azzouni (CEM) Dr. Mohammad Abido (EE)	Finance-Based Scheduling of Construction Projects Using Evolutionary and Heuristic Algorithms (CEM/FINANCE/422)
Construction Engineering and Management	Dr. Ashraf El-Azouni (CEM)	Simulation Approach for Scheduling Based on Fund Availability for Sustained Saudi Contracting Business (CEM/Schedule/479)
College of Applied and Supporting Studies	Dr. Shariefuddin Peerzada Dr. Abdulaziz Al-Assaf Dr. Koko Kaybi	Imbalance Sequence in Digraphs (CASS/Digraphs/475)

**4. RESEARCH PROPOSALS SUBMITTED DURING
THE SPRING SEMESTER 2009-2010 UNDER REVIEW**

Project Code	Principal Investigator	PI Dept.	Project Title
IP 092001	Dr. Anvarhusain Isab	Chemistry	NMR Studies of possible interaction of novel potential anticancer Gold (III) complexes with biologically important ligands
IP 092002	Dr. O. Echi	Mathematics & Statistics	A Generalization of Carmichael Numbers
IP 092003	Dr. O. Echi	Mathematics & Statistics	A Categorical Study of Some Typical Examples of Alexandroff Spaces
IP 092004	Dr. Rajai Al-Assar	Mathematics & Statistics	Unsteady Heat Conduction from Spheroids
IP 092005	Dr. Magdi S. Mahmoud	Systems Engineering	Development of Performance Analysis and Design Methods for Interconnected Control and Communications Systems (ICCS)
IP 092006	Dr. Luai M. Al-Hadrami	Mechanical Engineering	Techno-economical Feasibility of a Multi-effect Distillation (MED) Unit Powered by Solar Parabolic Troughs
IP 092007	Dr. Boubaker Smii	Mathematics & Statistics	Large diffusion Expansion for the Transition Kernel of the Lévy Ornstein-Uhlenbeck Process
IP 092008	Dr. Muhammad Baseer Haider	Physics	Growth and Characterization of GaN by Pulsed Laser Deposition
IN092009	Dr. Nasser-eddine Tatar	Mathematics & Statistics	On a Viscoelastic Problem on the whole space
IP 092010	Dr. Assane Lo	Mathematics & Statistics	Phase Transitions in Higher Dimensional Kac-like Models
IP 092011	Dr. A.S. Bonfah	Mathematics & Statistics	Dynamics of Singularly Perturbed Dissipative Evolution Equations
IP 092012	Dr. Samer F. Ahmed	Mechanical Engineering	Combustion Characteristics and Emissions of a HCCI-DI Diesel Engine Running with a Bio-Fuel Suitable for Saudi Arabian Environment
IP 092013	Dr. Abdulwahed Saif	Systems Engineering	Integrated Guidance and Control of Unmanned Aerial Vehicle (AVC)
IP 092014	Dr. Sajjad Mahmoud	ICS Dept.	An Integrated Requirements Analysis and Component Selection Approach for Component-Based Software Systems
IP 092015	Dr. Halim Hamid Redhwi	Chemical Engineering	Durability of Thermoplastic Nano-Composites under Local Weather Exposure & the Applicability of the Reciprocity Rule to their UV-Initiated Degradation.
IP 092016	Dr. Khalil Harrabi	Physics	Detection of Sudden Excitations by Nanometric Superconducting Films (DSENSF)

Project Code	Principal Investigator	PI Dept.	Project Title
IP 092017	Dr. Uwe Schauz,	Mathematics & Statistics	Projective and Affine Berlekamp
IP 092018	Dr. Sadhan Kumar De, Chair Professor	Chemical Engineering	Environmentally Friendly Re-processable Thermoplastic Elastomeric Composites Filled with Short Date Palm Fibers
IP 092019	Dr. Hassen Muttlak	Mathematics & Statistics	Group Sequential Testing for Binary Data Based on Ranked Set Sampling Method
IP 092020	Dr. Bassam El Ali	Chemistry	Oxidation of Allybenzene Derivatives by Soluble and Supported Palladium-Vanadium Catalyst Systems: Carbon-Carbon Cleavage
IP 092021	Dr. Mohammad El-Attar	ICS Dept.	Improving the Quality of Misuse Case Models
IP 092022	Dr. Khalil Ziq	Physics	Oxygen vacancies effects on the properties of ZnO-TM
IP 092023	Dr. Abdellatif Ibdah	Chemistry	Mechanistic, Kinetics and Theoretical Study of Rhenium(V) Dimer Catalyze Oxygen Atom Transfer Reaction (OAT)
IP 092024	Dr. Ahmed Bendania	General Studies Dept.	Relationship of students choice of major and career orientation in Saudi state owned and private university students in Arabia
IP 092025	Dr. Amer A. El-Batta	Chemistry	Synthesis of Functionalized Five-Membered Rings: Building Blocks in Therapeutic Agents
IP 092026	Dr. Musa M. Musa	Chemistry	A Protocol for Selective Reductive Amination of Aldehydes with Primary Amines
IP 092027	Dr. Mohammad H. Shwehdi	Electrical Engineering	Scrutinize Failures Causes of Real Distribution Underground Cable System of Saudi Electric Company (SEC)
IP 092028	Dr. Numan Abu Dheir	Mechanical Engineering	Microforming Set up Development
IP 092029	Dr. Jihad H. Al-Sadah	Physics	Electrostatic Vapor Condensation for Cooling and Desalination Systems
IP 092030	Dr. Nouri Hassan	Chemistry	Hg and other trace metals in saliva: Electro-analytical detection in dental amalgam
IP 092031	Dr. Muhammad Jameel Qazi	Management & Marketing	Relationships of the self-directed expatriates with home and host country – a Study of Academics in Saudi Arabia
IP 092032	Dr. Mohammad Al-Shayeb	ICS	Integrated Unified Modeling Language (IUML)

**5. JUNIOR FACULTY GRANTS PROPOSALS RECEIVED
IN SPRING SEMESTER 2009-10 WHICH ARE UNDER REVIEW**

Project Code	Principal Investigator	PI Dept.	Project Title
JP 092001	Dr. Mujahid Mohammad Al-Dhaifallah	Systems Engg.	Sub-phase Identification of Block Structured Models Using Support Vector Machines
JP 092002	Dr. Wessam Mesbah	Electrical Engineering	Resource Allocation for Layered Multimedia Transmission
JP 092003	Dr. Zubair Baig	Computer Engineering	Pattern Recognition for Detecting Distributed Denial of Service Attacks on the Internet
JP 092004	Dr. Robert Heffernan	Mathematics & Statistics	Commutativity in Compact Topological Groups
JP 092005	Dr. S. Kunwar	Physics	Study of Intrinsic Impurity Phases in an Electron-Doped high- T_c Superconductor $\text{Pr}_{0.88}\text{LaCe}_{0.12}\text{CuO}_{4-\delta}$ (PLCCO)
JP 092006	Dr. Abdallah Al-Shammari	Chemical Engineering	Post-Optimality Analysis of Petrochemical Complex Production
JP 092007	Dr. Hosam Rowaihy	Computer Engineering	Location Privacy Preservation in Sensor Allocation Systems
JP 092008	Dr. Oualid Hammi	Electrical Engineering	Reduced Complexity Modeling of Power Amplifiers for Wireless Communication Applications

BOOKWRITING PROPOSALS RECEIVED
IN SPRING SEMESTER 2009-10 WHICH ARE UNDER REVIEW

Project Code	Principal Investigator	PI Dept.	Co-Author / Dept.	Project Title
BW 092001	Mr. Hakim Adiche, Lecturer,	COE	--	IP Version 4 and IP version 6 addressing Basic concepts and configuration
BW 092002	Dr. M. Enamul Hossain	Petroleum Engineering	Dr. Abdulaziz Al-Majed	Fundamentals of Sustainable Drilling Engineering
BW 092003	Dr. M. Faiz	Physics	Dr. Abdulaziz Al-Jalal and Mr. M.S. Kariapper, Physics	Computer-aided Laboratory Manual for General Physics I
BW 092004	Dr. Lahouari Ghouti	ICS	--	Digital Imaging and Computer Vision: Digital Copyright, Biometrics and Forensic Systems Communicated with "Springer, 101 Philip Drive, Assinippi Park, Norwell, MA 02061, USA, for publishing the book.
BW 092005	Dr. E. Boukas, Ecole Polytechnique, Canada (Passed away on 1.1.2010)		Dr. Fouad Alsunni, Systems Engineering	Mechatronic Systems: Analysis, Design and Implementation (bookwriting project) Entered into agreement with Springer-Verlag GmbH Berlin Heidelberg, Germany.

**6. FAST TRACK PROPOSALS RECEIVED FOR FUNDING DURING
THE SPRING SEMESTER 2009-2010 FOR FUNDING**

Project Code	Principal Investigator	PI Dept.	Co Investigator(s) / Dept.	Project Title
FT 092001	Dr. S. Kabbaj	Mathematics & Statistics	Dr. S. Bouchiba, External Investigator from University of Meknes	Regularity of Tensor Products of k-Algebras
FT 092002	Dr. S. Kabbaj	Mathematics & Statistics	Dr. A. Mimouni, Mathematics & Statistics	Core of Ideals in Integral Domains
FT 092003	Dr. Rached Ben-Mansour	Mechanical Engineering	Dr. Abdelsalam Al-Sarkhi, Mechanical Engineering	Modeling of Effects of High Oil Viscosity on Drift Velocity in Horizontal Pipelines Two-Phase Flow
FT 092004	Dr. Muhammad Saifur Rahman	Finance & Economics	--	What Determines Specific Schooling Decisions in the USA? A Dynamic General Equilibrium Analysis
FT 092005	Dr. M. Nahid Siddiqui	Chemistry	Dr. Halim Hamid Redhwi, Chemical Engineering	Synthesis and characterization of novel nanocomposite materials based on poly(styrene-co-methyl methacrylate) or poly(styrene-co-ethyl methacrylate) copolymers and organomodified clay
FT 092006	Dr. Esmail Mokheimer	Mechanical Engineering	Dr. M.A. Habib,	Development of solar Gas Turbine Cogeneration Systems in Saudi Arabia
FT 092007	Dr. M.A. Khamsi	Mathematics & Statistics	Dr. M. Abu-Sbeih,	New Selection Results for Multivalued Maps in Discrete Sets
FT 092008	Dr. Shankar Kunwar,	Physics	Dr. Baseer Hayder, Physics and Ms. Vidya Madhavan	Temperature Dependence Study of Superconducting Gap, Δ of an Electron-Doped High- T_c Superconductor $\text{Pr}_{0.88}\text{LaCe}_{0.12}\text{CuO}_{4-\delta}$ (PLCCO)
FT 092009	Dr. Khaled Albinali	Finance & Economics	Dr. Muhammad Saifur Rahman, Finance & Economics	Substitutability between Government and Private Consumption in the GCC Countries; An Econometric Investigation
FT 092010	Dr. Izhar Ahmad	Mathematics & Statistics	Dr. Soliman Al-Homidan and Mr. Shamsuddin Khan, Mathematics & Statistics	Minimax Programming under Generalized Convexity

Project Code	Principal Investigator	PI Dept.	Co Investigator(s) / Dept.	Project Title
FT 092011	Dr. Samer Arafat	ICS Dept.	Dr. Mohamed Khabou, University of West Florida, USA	Computerized Diagnosis of Heart Disease for Patients admitted with Chest Pain
FT 092012	Dr. Tareq Y. Al-Naffouri	Electrical Engineering	Mr. Saqib Sohail, Electrical Engineering	PAPR Reduction of OFDM Signals by Compressed Estimation
FT 092013	Dr. Mohammad Bokhari	Mathematics & Statistics	Dr. Husain Al-Attas, Mathematics & Statistics	Study of Economization and Gauss-Type Quadrature Rules Based on - weighted orthogonal polynomials
FT 092014	Dr. Abd-Nacer Boucheikhima	ICS Dept	Dr. Rached Ben Mansour	Characterization of protein transport in the lumen of the plant Endoplasmic Reticulum
FT 092015	Dr. Amar Khoukhi	Systems Engineering	Dr. Fouad Alsunni, Systems Engineering	Multi-Objective online Motion Planning for Mobile Parallel Kinematic Machines`
FT 092016	Dr. Amar Khoukhi	Systems Engineering	Dr. Mujahid Al-Dhaifallah, Systems Engineering	Dynamic Parameters Identification of Wheeled Mobile Robots, a Comparative Study
FT 092017	Dr. Osman Abdullatif	Earth Sciences	Dr. Mohammad Makkawi, Earth Sciences	Geological and Geostatistical Modeling of Rock Properties, Porosity and Permeability of Martine Sandstone Reservoir Outcrop Analog, Saudi Arabia
FT 092018	Dr. Oualid Hammi	Electrical Engineering	Dr. Fadhel M. Gannouchi, Consultant, Canada	Bandwidth and Power Scalable Behavioral Models and Digital Predistortors for 3G+ Base Station Transmitters
FT 092019	Dr. Mohammad Suwayan	CE	Dr. Mohammad Essa, Civil Engineering	Influence of Tidal Fluctuations on the Transport of Contaminants in Coastal Aquifers
FT 092020	Dr. Mohammad Al-Zahrani	CE	--	Forecasting Daily Municipal water Consumption for Major Cities in Saudi Arabia Using Artificial Neural N
FT 092021	Dr. Rajai Alassar	Mathematics & Statistics	---	Flow in Semielliptic Microchannels
FT 092022	Dr. Mohammad H. Omar	Mathematics & Statistics	-	Sequential Analyses for Cronbach's Coefficient Alpha
FT 092023	Dr. Tareq Al-Naffouri	Electrical Engineering		DOA and SNR estimation in time-variant Rayleigh fading channels

**7. LIST OF RESEARCH GROUP PROPOSALS SUBMITTED FOR FUNDING
DURING THE SECOND SEMESTER OF THE ACADEMIC YEAR 2009-2010**

Project Code	Principal Investigator	PI Dept.	Consultant/Co-I / Dept.	Project Title
ARG 092001	Dr. Sabri Mahmoud	ICS	Mr. Irfan Ahmad, Lecturer, ICS	Automatic Arabic Check Analysis and Recognition (AACAR)
ARG 092002	Dr. Moustafa El-Shafei	SE	Dr. Husni Al-Muhtaseb, Dr. El-Sayed El-Alfy and Dr. Wasfi Al-Khateeb	Automatic Vocalization of Arabic Text
CRG 092006	Dr. Shamsad Ahmad	CE	Dr. Abul Kalam Azad and Dr. M. Maslehuddin, Civil Engineering	Mechanical Properties and Durability of Reactive Powder Concrete (RPC) Developed using Local Fine Aggregate
CRG 092007	Dr. Mohammad Maslehuddin	CE	Dr. O.S.B. Al-Amoudi, Civil Engineering Department	Production of Medium to Low Quality Concrete Utilizing Industrial Waste Products
LRG 092001	Dr. Khaled Gasmi	Physics	Dr. Fida F. Al-Adel Mr. M.A. Dastageer	Synchronous Fluorescence Spectroscopy of edible oils from Saudi Origin
LRG 092002	Dr. Saleem Ghaffer Rao	Physics	Dr. M.A. Gondal and Dr. Zain H. Yamani	Synthesis and Optical Characterizations of Hybrid Nano-Structures Using Advanced Laser based Techniques
LRG 092003	Dr. Basheer Chanbasha	Chemistry	Dr. Amjad Sheikh (Che) and Dr. Mohammad Gondal (Physics)	Novel Laser Irradiated Nano Structured Crystal Materials for Phenol Determination in Water Samples
WRG092003	Dr. Mohammad Al-Zahrani	CE	Dr. Mohammad Essa, Civil Engineering	Risk-Based Prioritization of Water Mains in a Distributed Network: A Soft-Computing Approach
WRG 092004	Dr. Mohammad Al-Zahrani	CE	Dr. Mohammad Essa Dr. Mohammad Suwayyan, Dr. Mohammad Vohra, Dr. Mohammad Makkawi and Dr. Saad Aiban	Groundwater Recharge with Tertiary Effluent: Laboratory and Field Experiments

8. PUBLICATIONS IN REFEREED JOURNALS **REPORTED AFTER JANUARY 2010**

College of Engineering Sciences

Civil Engineering

1. “Effect of Viscosity-Enhancing Admixtures on Formwork Pressure and Thixotropy of Self-Consolidating Concrete”, **Kamel, Mostafa K.M., and Al-Amoudi, O.S.B., Translation of the paper [by Assaad, J.J., and Khayat, K.H., ACI Materials Journal, Vol. 103, No. 4, July-August 2006, pp. 280-287], Building Technology, Issue 19, December 2009 (Dhul-Hijjah 1430H), pp. 96-111 (in Arabic).**
2. “Non-Destructive Analysis of Concrete for Corrosion Using Nuclear Technique”, **Naqvi, A.A., Nagadi, M.M., Garwan, M., Al-Amoudi, O.S.B., Maslehuddin, M., Khateeb-ur-Rehman and Raashid, M., Atoms for Peace, an International Journal, Vol. 3, No. 2, 2010, pp. 65-83.**
3. “Effect of Silica Fume Addition on the PGNAA Measurement of Chlorine in Concrete”, **Naqvi, A.A., Maslehuddin, M., Garwan, M.A., Nagadi, M.M., Al-Amoudi, O.S.B., Raashid, M., and Khateeb-ur-Rehman, Journal of Applied Radiation and Isotopes, Vol. 68, 2010, pp. 412-417.**
4. “Use of Cement Kiln Dust in Blended Cement Concrete”, **Maslehuddin, M., Al-Amoudi, O.S.B., Rehman, M.K., Ali, M.R. and Barry, M.S., ICE Construction Materials Journal, 2010, in press.**
5. “Chemical Stabilization of a Saudi Calcareous Marl Soil”, **Al-Amoudi, O.S.B., Khan, K., and Al-Kahtani, N.S., Construction and Building Materials, 2010, in press.**
6. “Effect of Curing Methods on the Properties of Plain and Blended Cement Concretes”, **Al-Gahtani, A.S., Construction and Building Materials Journal, Volume 24, Issue 3, 2010.**
7. “Removal from Simulated Wastewater Using UV-TiO₂ Photocatalysis: Effect of Co-Pollutants and pH”, **Vohra, M.S., Selimuzzaman, S.M., and Saleh, M.S., Environmental Engineering, 31, 641-654, 2010.**

Chemical Engineering

1. "Kinetics and Mechanism of Partial Oxidation of Ethane to Ethylene and Acetic Acid over MoV type Catalysts", **Rahman, F., Loughlin, K.F., Al-Saleh, M.A., Saeed, M.R., Tukur, N.M., Hossain, M.M., Karim, K., Mamedov, A.**, Applied Catalysis A: General, Vol. 375 (2010), pp.17-25.
2. "Integrating Renewable and Nonrenewable Energies in Power Plant Planning", **Habib H. Al-Ali, Yousef Saif, Ali Elkamel and Ali Lohi**, American J. of Engineering and Applied Sciences, 3 (2): 2010, pp.333-341.

Electrical Engineering

1. "Dynamic Performance Improvement of an Isolated Wind Turbine Induction Generator", **A.H.M.A.Rahim and M. Ahsanul Alam**, Computer and Electrical Engineering, Vol. 35, pp. 594-607, 2009.
2. "Dynamic Performance Enhancement of a Grid Connected Wind Generation System", **A.H.M.A.Rahim and M.Ahsanul Alam**, International Journal of Simulation and Modeling , IJMS, Vol. 29, Issue 4, pp.410-416, 2009.
3. "Relay-aided opportunistic scheduling in wireless networks", **Al-Harthi, Y.S.; Al-Ghadhban, S.**; IET Communications, vol.4, no.3, pp.303-311, February 12, 2010.
4. "Performance Evaluation of Generalized Selection Combiners (GSC) over Slow Fading with Estimation Errors", **Fawaz S. Al-Qahtani, Arun K. Gurung, Salam Zummo and Zahir M. Hussain**, Springer Wireless Personal Communications, accepted,2009.
5. "Spectral Efficiency of Maximum Ratio Combining (MRC) over Slow Fading with Estimation Errors", **Fawaz S. Al-Qahtani, Salam Zummo, Arun K. Gurung and Zahir M. Hussain**, Elsevier Digital Signal Processing, Vol. 20, no. 1, pp. 85-96, January 2010.
6. "Optimal Power Allocation and Power Control for VBLAST Systems with M-ary Modulations", **Hsin-Yeh Chen, Chia-Hung Chuang, Ping-Cheng Yeh and Salam Zummo**, IET Communications, accepted, 2009.
7. "Pole Placement Approach for Robust Optimum Design of PSS and TCSC-Based Stabilizers Using Reinforcement Learning Automata", **M. Kashki, M. A. Abido, and Y. L. Abdel-Magid**, Journal of Electrical Engineering, Vo. 91, No. 7, DOI 10.1007/s00202-010-0147-5, 2010, pp. 383-494.
8. "Parameter Optimization of Multimachine Power System Conventional Stabilizers Using CDCARLA Method", **M. Kashki, Y. L. Abdel-Magid, and M. A. Abido**, International Journal of Electrical Power and Energy Systems, Vol. 32, No. 6, pp. 498-506, June 2010.
9. "Harmonic and Intermodulation Performance of Fabry-Perot Intensity Modulator", **M.T. Abuelma'atti**, , Fiber and Integrated Optics, Vol. 29, pp. 134-145, 2010.

10. "Harmonic and Intermodulation Performance of Hearing Aids under Large Sound Pressure Levels", **M.T. Abuelma'atti**, , Applied Acoustics, Vol. 71, pp. 269-275, 2010.
11. "2.4 GHz Printed Antennas Embedded in Small UAV Wing Structures", **Mohammad S. Sharawi, Osamah A. Rawashdeh and Daniel N. Aloï**, Journal of Electromagnetic Waves and Applications, Vol 24, No 4, pp. 463-474, April 2010.
12. "Directional Modeling of UWB Communication Channels", **Muqaibel**, IET Communications, vol 4, no. 1, 2010, pp. 51-62, DOI: [10.1049/iet-com.2008.0674](https://doi.org/10.1049/iet-com.2008.0674).
13. "Analogue/Digital Ferrite Phase Shifter for Phased Array Antennas", **Sheikh S. I. M. et al.**, Accepted for Publication, IEEE-Antennas and Wireless Propagation Letters (AWPL), April, 2010.
14. "Analysis And Design Of Svc-Based Stabilizer Using Particle Swarm Optimization Technique", **T. Fetouh, M. A. Abido, and A. A. Abou El-Ela**, Engineering Research Journal, Vol. 33, No. 1, pp. 15-20, January 2010.
15. "A New Chip-Level Linear SOR-SIC Multiuser Detector for Long-Code Systems.", **A. Bentrchia, A. Zerguine and M. Benyoucef**, Wireless Communications and Mobile Computing, Vol. 9, No. 9, pp. 1172-1180, September 2009.
16. "Implementation of 2-D Seismic Migration FIR Digital Filters for 3-D Seismic Volumes Using Singular Value Decomposition", **W. Mousa, S. Boussakta, D. C. McLernon and M. Van Der Baan**, Geophysics, vol. 75, no. 1, Jan.-Feb. 2010

Mechanical Engineering Department

1. "Evaluation of the Proximity Effect on Flow Accelerated Corrosion ", **Ahmed, W.H.**, Annals of Nuclear Energy, Vol. 37, pp. 598-605, 2010.
2. "Towards Understanding the Critical Heat Flux for Industrial Applications", **Ahmed, W.H., Elnakla, M. and Ismail,** International Journal of Multiphase Flow, Vol. 36, pp. 153-165, 2010.
3. "Nonlinear oscillations of a double-walled carbon nanotube," **Hawwa, M. A. and Al-Qahtani, H. M.**, Computational Materials Science, 48(1), pp. 140-143, March 2010.
4. "Development of an AI-based Rapid Manufacturing Advice System" **Munguia, J., Lloveras, J., Llorens, S., Laoui, T.**, International Journal of Production Research, Vol 48, Issue 8, 2010, pp. 2261-2278.
5. "Formability of Ti-29Nb-13Ta-4.6Zr Biomaterial at High Temperatures", **Ming-Jen Tan, Syed Fida Hassan, Toshikazu Akahori, and Mitsuo Niinomi**, Key Engineering Materials, Vol. 443, 2010, pp 620-625.

6. "Enhancing the performance of magnesium alloy AZ31 by integration with millimeter length scale aluminium based cores", **M Paramsothy, S. F. Hassan, N Srikanth, M Gupta**, Journal of Composite Materials, Vol. 44 (9), May 2010, pp. 1099-1117.
7. "Simultaneous Enhancement of Tensile/Compressive Strength and Ductility of Magnesium Alloy AZ31 Using Carbon Nanotubes", **M Paramsothy, S.F. Hassan, N Srikanth, M Gupta**, Journal of Nanoscience & Nanotechnology, Vol. 10(2), February 2010, pp. 956-964.
8. "Hydrogen Induced Premature Failure of Massive Cast Medium Carbon Steel Anchor Fluke", **S. F. Hassan**, Journal of Materials & Design, Vol. 31 (2), February 2010, pp. 956-964. 1. 482 (1-2), August 2009, pp. 73-80.
9. "Laser cutting of sharp edge: Thermal stress analysis", **Yilbas B.S., Arif A.F.M. and Abdul Aleem B.J.**, Optics and Lasers in Engineering, 48 (1), pp. 10-19, 2010.
10. "Laser welding of low carbon steel and thermal stress analysis, **Yilbas, B.S., Arif, A.F.M., Abdul Aleem, B.J.**, Optics and Laser Technology 42 (5), pp. 760-768, 2010
11. "Entropy generation in a square cavity: Effect of porous block configurations in relation to cooling applications, **Shuja, S.Z., Yilbas, B.S., Kassas, M.**, International Journal of Numerical Methods for Heat and Fluid Flow 20 (3), pp. 332-347, 2010.
12. "Flow impinging onto a conical cavity – a conical and annular nozzle combination", **Shuja S.Z., Yilbas B.S., S. Khan**, Proc. IMechE Part C: J. Mechanical Engineering Science, Vol. 223, pp. 2583-2593, 2009.
13. "Quality assessment and metallurgical examination of laser welded sheets", **N. Abu-Dheir and Yilbas B.S.**, Advanced Materials Research, Vols. 83-86, pp 611-615, 2010.
14. "Effect of Temperature Field on Flexural Wave Characteristics of a Bar Resembling Welding to Rigid Body", **Alzaharnah1 I.T., Al-Kaabi S., and Yilbas B. S.**, Advanced Materials Research Vols. 83-86, pp 1212-1219, 2010.
15. "Flow Impingement onto a Conical Cavity at Elevated Wall Temperature: Effects of Conical Nozzle Cone Angle And Flow Velocities On Heat Transfer Rates", **Shuja S.Z. and Yilbas B.S.**, Enhanced Heat Transfer, Volume 17, 23-43, 2010.

Aerospace Engineering Department

1. Artificial Neural Network Application of Modeling Failure Rate for Boeing 737 Tires", **Z. Al-Garni and Ahmad Jamal**, Quality & Reliability Engineering International USA, 2010 (1431H).
2. "Load-Displacement Behavior of Glass Fiber/Epoxy Composite Plates with Circular Cut-Outs Subjected To Compressive Load". **Hakim S. Sultan Aljibori, W.P Chong, T.M I. Mahlia, W.T. Chong, Prasetyo Edi, Haidar Al-qrimli, Irfan Anjum, R. Zahari**, Materials & Design, Volume 31, Issue 1, January 2010, Pages 466-474, Elsevier Ltd.

College of Sciences**Chemistry Department**

1. "A study of the conformational stability and the vibrational spectra of 2,3-dichloro-1-propanol", **H. M. Badawi**, S. A. Ali, Spectrochim. Acta Part A., Vol. 75, 734(2010).
2. "Structural Stability and Analysis of Vibrational Spectra of 1,2,4,5-Tetroxane and 3,6-Diphenyl-1,2,4,5-Tetroxane", **H. M. Badawi**, **A. A. Al-Saadi**, **S. A. Ali**, J. Mol. Struct., Vol. 969, 197(2010).
3. "Vibrational Spectra of Phenylphosphonic and Phenylthiophosphonic Acid and their Complete Assignment", **W. Forner**, **H. M. Badawi**, Z.Naturforsch., Vol. 65B, 357 (2010).
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9. “How British firms feel about Saudi Arabia – British negotiations: A survey” by **Al-Ghamdi, S** (2010): International Journal of Management, Vol. # 27, No. 2.
10. “The influence of organizational justice on job satisfaction: evidence from an emerging nation” **Sohail M. Sadiq** and Nuhu, Nuradden, Abubaker, International Journal of Project Organization and Management, Vol. 2, No. 2, pp 193-207, (2010).

College of Environmental Design

Architecture Department

1. “Landscape Design for Energy Conservation,” **Kamal M. A.**, Cooling India, Vol. 6, No. 3, 2010.

PUBLICATION DETAILS FROM THE RESEARCH INSTITUTE

Center for Environment and Water

Marine Studies Section

1. "Polychaete Community Structure of Indian West Coast Shelf, Arabian Sea", **Joydas, T.V.; Jayalakshmi, K.V. and Damodaran, R.**; Current Science, Vol. 97, No. 5, September, 2009, pp. 634-636.
2. "Meiofauna of the Western Continental Shelf of India, Arabian Sea", **Sajan, S.; Joydas, T.V.; and Damodaran, R.**, Estuarine Coastal and Shelf Science, Vol. 86, 2010, pp. 665-674.
3. "Depth-related Patterns of Meiofauna on the Indian Continental Shelf are conserved at reduced taxonomic resolution", **Sajan, S.; Joydas, T.V.; and Damodaran, R.**; Hydrobiologia, In press, DOI 10.1007/s10750-010-0314-8.
4. "HPC Based Integrated System for Marine Scientists", **Mohammed Mujtaba Shareef and Humayun Baig**, Presented at the 2010 Spring Simulation Multiconference, The Society of Modeling and Simulation International (SCS), April 12-15, Orlando, Florida, USA
5. "Application of Steel Making Slag for the Remediation of Polluted Coastal Waters", **Md. Jahangir Sarker**; The 6th Specialty Conference & Exhibition on Environmental Progress in the Petroleum & Petrochemical Industries (EnviroArabia-2010), April 18 -21, 2010, Gulf Hotel, Manama, Bahrain.
6. "Trophic Organization and Predator-prey Interactions among Commercially Exploited Demersal Finfishes of Southeast Arabian Sea", **Abdurahiman K. P.; Nayak, T. H.; Zacharia, P. U.; and Mohamed, K. S.**; Estuarine Coastal and Shelf Sciences, Vol. 87, 2010, pp.601-610.
7. "Trawling Survey to Assess the Distribution Pattern and Abundance of Green Tiger Prawn, *Penaeus semisulcatus* (De Haan, 1844) from Manifa Bay, Saudi Arabia", **Abdurahiman, K.P.; Premlal, P.; Krsihnakumar, P.K.; Qurban Mohamed, B.; Abdulaziz Al- Suwailem.; and Khalid Al-Abdulkadar.**; The 6th Specialty Conference and Exhibition on Environmental Progress in the Petroleum and Petrochemical Industries (EnviroArabia-2010), April 18-21, 2010, Gulf Hotel, Manama, Bahrain.
8. "Nursery and Feeding Habitat f=Function of Mangroves and their role in Fisheries Production - A review", **Abdurahiman, K. P.; Mohammed Ali B. Qurban.; Krishnakumar, P.K.; and Khalid Al-Abdulkadar.**; Earth Day Arabia 2010, April 21, 2010. Le Meridien Hotel, Al-Khobar, Saudi Arabia.

9. “How Environmental Parameters Influenced Fluctuations in Oil Sardine and Mackerel Fishery during 1926-2005 along the south-west coast of India?”, **Krishnakumar, P.K., Mohamed, K.S., Asokan, P.K., Sathianandan, T.V., Zacharia, P.U., Abdurahiman, K.P., Veena Shettigar., and Durgekar, R.N.**, Marine Fisheries Information Service T&E Ser., Vol.198, 2009, pp. 1-5.
10. “Role of Man-Made Marine Structures as Beneficial Habitats along the Saudi Gulf Coast”, **Qurban, M. B.; Jesusito, A. B.; Abdullajid, B.U.; Batang, Z. B.; Manikandan, K. P.; and Al-Abdulkadar, K. A.**; The 6th Specialty Conference and Exhibition on Environmental Progress in the Petroleum and Petrochemical Industries (EnviroArabia-2010), April 18-21, 2010, Gulf Hotel, Manama, Bahrain.
11. “Factors Influencing the Spatial and Temporal Distribution of Surface Phytoplankton in the English Channel and Bay of Biscay”, **Qurban, M. A.; Holligan, P. M.; Hydes, D.J.; Purdie, D. A.; Kelly-Gerreyn, B.; Walne, A. W.**; The 6th Specialty Conference and Exhibition on Environmental Progress in the Petroleum and Petrochemical Industries (EnviroArabia-2010), April 18-21, 2010, Gulf Hotel, Manama, Bahrain.
12. “Diversity of Coral Reef Fish Assemblages from the Western Arabian Gulf (Saudi Arabia)”, **Krishnakumar, P. K.; Joydas, T. V.; Saji, P. Abdusali; Lindo, Reynaldo T.; Qurban, Mohammed; Al-Suwailem, Abdulaziz M. and Al-Abdulkader, Khaled**; The 6th Specialty Conference and Exhibition on Environmental Progress in the Petroleum and Petrochemical Industries (EnviroArabia-2010), April 18-21, 2010, Gulf Hotel, Manama, Bahrain.
13. “Transplantation of Mangroves to Mangrove-free Intertidal Habitats in the Saudi Coast of Arabian Gulf”, **Qurban, M.; Lindo, R.; Magallanes, R.; Ali Jr.; Manikandan, K. P.; Fadlalla, Y.; and Abdulkader, K.**; Earth Day Arabia 2010, April 21, 2010. Le Meridien Hotel, Al-Khobar, Saudi Arabia.
14. “Impacts of Eutrophication on the Coastal Ecosystem and Marine Biodiversity in the Arabian Gulf”, **Qurban, Mohammed; Manikandan, K. P.; Said, Ali; and Krishnakumar, P.K.**; World Environment Day 2010, June 5, 2010. Royal Commission for Jubail and Yanbu, Jubail, Saudi Arabia and Holo International Co.
15. “Marine Environmental Impacts of Desalination Plants – Intake Water and Discharges”, **Qurban, Mohammed; Krishnakumar, P.K. and Manikandan, K.P.**; ARWADEX 2010, Water Desalination Conference in the Arab Countries, April 11 - 14, 2010. Riyadh, Saudi Arabia.
16. “Mangroves –An Assessment of Climate Change Threats and its Management Issues”, **Manikandan, K. P; Qurban, Mohammed and Krishnakumar, P.K.**; Earth Day Arabia 2010, April 21, 2010. Le Meridien Hotel, Al-Khobar, Saudi Arabia.

Center for Research Excellence in Nanotechnology

1. "Synthesis, characterization and antimicrobial activity of nano ZnO and Pd loaded nano ZnO against enteric pathogens," Randhawa, M.A., Al-Zahrani, A.J., **Gondal, M.A.**, and Bagabas, A.A., Journal of Materials Science and Engineering, Vol 4, No.5, May 2010.
2. "Catalyst supported growth of In₂O₃ nanostructures and their hydrogen gas sensing properties," **Qurashi, A.**, El-Maghraby, E.M., Yamazaki, T., and Kikuta T., Sensors and Actuators B: Chemical, Vol. 147, Issue 1, May 2010, pp. 48-54.
3. "Photocatalysed reaction of indole in aqueous suspension of titanium dioxide," Muneer, M., Saquib, **M.**, **Qamar, M.**, and Bahnemann D.W., Research on Chemical Intermediates, Vol. 36, Number 2, March 2010, pp. 121-125.
4. "Spectroscopic characterization approach to study surfactants effect on ZnO₂ nanoparticles synthesis by laser ablation process," **Drmosh, Q.A.**, **Gondal, M.A.**, **Yamani, Z.H.**, and **Saleh, T.A.**, Applied Surface Science, Vol. 256, Issue 14, May 2010, pp. 4661-4666.
5. "Synthesis, Characterization, and Antimicrobial Application of Nano-Palladium doped Nano-WO₃," **Gondal, M.A.**, Bagabas, A., Dastageer, A., and **Khalil, A.**, Journal of Molecular Catalysis A: Chemical, Vol. 323, Issues 1-2, May 2010, pp. 78-83.
6. "Removal of Chromium (III) from Water by Using Modified and Non-Modified Carbon Nanotubes," **Atieh, M.A.**, Yehya, O., Bukhari, A.A., **Khaled, M.**, **Alharthi, M.**, **Al-Tawabini, B.**, Fettouhi, M., and **Abuilaawi, F.A.**, Journal of Nanomaterials, Vol. 2010, 2010, pp. 1-9.
7. "Removal of Rhodamine 6G induced by laser and catalyzed by Pt/WO₃," **Qamar, M.**, **Gondal, M.A.**, and **Yamani, Z.H.**, Catalysis Communications, Vol. 11, Issue 8, March 2010, pp. 768-772.
8. "Photodegradation of acridine orange catalyzed by nanostructured titanium dioxide modified with platinum and silver metals," **Qamar, M.**, Desalination, Vol. 254, Issues 1-3, May 2010, pp. 108-113.
9. "Formamide Driven Synthesis of Well-aligned ZnO Nanorod Arrays on Glass Substrate," AbuDakka, M., **Qurashi, A.**, Alam, M.W., and Hari, P., Journal of Materials Science and Semiconductor processing, Vol. 13, Issue 2, April 2010, pp. 115-118.
10. "Radiation Vulcanization of Natural Rubber Latex Loaded With Carbon Nanotubes," **Muataz M.A.**, Nazif, N., Faridah, Y., Mohammed, F., Ratnam, C.T., **Mamdouh, A.**, **Faraj, A.A.**, Khalid, M., and Al-A. Adnan, M., Fullerenes, Nanotubes and Carbon Nanostructures Vol. 18, Issue 2010, pp. 56-71.

11. "Moving Enzyme-Linked ImmunoSorbent Assay to the Point-of-Care dry-Reagent Strip Biosensors," **Kawde, A.N.**, Mao, X., Xu, H., Zeng, Q., He, Y., Liu, G., American Journal of Biomedical Sciences, Vol. 2, Issue 1, 2010, pp. 23-32.
12. "Spectroscopic detection of health hazardous contaminants in lipstick using Laser Induced Breakdown Spectroscopy," **Gondal, M.A.**, Seddigi, Z.S., Nasr, M.M., Gondal, B., Journal of Hazardous Materials, Vol. 175, Issues 1-3, March 2010, pp. 726-732.
13. "Effect of laser irradiation on the structure and valence states of copper in Cu-phosphate glass by XPS studies," Khattak, G.D., Mekki, A., **Gondal, M.A.**, Applied Surface Science Vol. 256, March 2010, pp. 3630-3635.

9. RESEARCH PAPERS PRESENTED AT CONFERENCES REPORTED AFTER JANUARY 2010

College of Engineering

Civil Engineering

1. “Granular Activated Carbon from Date Palm Tree Branches: Production & Use”, **Vohra, M.S., Al-Zahrani, M.A., Essa, M.H., and Rahman, M.M.**, Presented at the Fourth Saudi Science Conference, Al-Madinah Al-Munawwarah, Saudi Arabia, March 2010.

Chemical Engineering

1. “Co Promoted Ni Oxygen Carrier on La Modified γ -Al₂O₃ for Chemical Looping Combustion Process” **Quddus, M.R., Hossain, M.M., de Lasa, H.I.**, 21st Canadian symposium on catalysis, Banff, Alberta, Canada, May 9-12, 2010.
2. “Study of Ni/Al₂O₃ and La promoted Ni/Al₂O₃ catalysts for H₂ Production from Glucose in Supercritical Water” **Chowdhury, M.B.I., Hossain, M.M., Charpentier, P.A.**, 21st Canadian Symposium on Catalysis, Banff, Alberta, Canada, May 9-12, 2010.
3. “Experimental Investigation of gasification of biomass and CO₂ capture using chemical-looping combustion” **Hossain, M.M., Quddus, M.R., de Lasa, H.I.**, 1st International Conference on Chemical Looping, An Alternative Concept for efficient and clean use of fossil resources, IFP-Lyon, France, March 17-19, 2010.
4. “Development and evaluation of Ni-Co/La- γ Al₂O₃ Oxygen Carrier for Fluidized bed Chemical-Looping Combustion” **Quddus, M.R., Hossain, M.M., de Lasa, H.I.**, 1st International Conference on Chemical Looping, An Alternative Concept for efficient and clean use of fossil resources, IFP-Lyon, France, March 17-19, 2010.

Electrical Engineering

1. Diagnostic and Monitoring Tools for Power Equipment”, **A. A. Al-Nuaim, M. A. Al-Muaili, M. H. Shwehdi**, ASME 2010 Power Conference, Chicago, July 13-15, 2010, Illinois
2. "Mobile Localization based on Improved Non-Line of Sight Classification", **Ali H. Muqaibel, Refat A. Al-Nimnim, Mohamed A. Landolsi, and Abdullah S. Al-Ahmari**, 17th International Conference in Telecommunications, Doha , Qatar, April 4-7, 2010, pp. 667-673
3. "Data-aided SNR estimation in time-variant Rayleigh fading channels”, **H. Abeida, T. Y. Al-Naffouri and S. Alghadhban**, ", accepted in IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC), Morocco, June 2010.
4. “Scrutinize Failures Causes of Real Medium Voltage 34.5 KV Underground Cable System”, **M H. Shwehdi**, 2009 “Insulcon”, Insulation Conference, UK, June 2009.

5. "Multi-objective evolutionary finance-based scheduling: the entire projects' portfolio", **M. A. Abido** and **Ashraf Elazouni**, Proceedings of the International Conference on Computing in Civil and Building Engineering (ICCCBE), Nottingham, UK, June 30 - July 2, 2010.
6. "Probabilistic Assessment of Photovoltaic (PV) Panel Performance", **M. H. Shwehdi**, **Abdulaziz A. Al-Nuaim**, and **Fahad S. Al-Ismail**, Accepted for presentation at the International Renewable Energy Conference (ICRE), Damascus, Syria, 5– 8 April 2010
7. "Analyzing harmonic distortion produced from Arc Furnace", **M. H. Shwehdi**, **Abdulaziz A. Al-Nuaim**, and **Fahad S. Al-Ismail**, submitted to the Power Quality and Harmonics Conference, Dead Sea, Jordan, May 10-12, 2010
8. "Towards a Safe Grounding Guidelines for to Industrial Plants in Saudi Arabia", **M. H. Shwehdi**, **U. Jowhr**, and **T. Sheltami**, submitted to the 2009 CIRED conference in Prague, June 2009.
9. "Large signal analysis of class-AB transconductance stage", **M.T. Abuelma'atti** and **Ali M.T. Abuelma'atti**, Proceedings of the International Conference on Electronic Devices, Systems and Applications, Kuala Lumpur, Malaysia, April 12-13, 2010, pp. 11-16.
10. "Harmonic and intermodulation performance of dual-electrode Mach-Zehnder electro-optic modulators with multicarrier RF input", **M.T. Abuelma'atti**, Proceedings of the 17th International Conference on Telecommunications, Doha, Qatar, April 5-7, 2010, pp. 928-933.
11. "Performance of CDMA-Based Multi-hop Wireless Networks in Fading", **Mohammad Abdellatif** and **Salam Zummo**, Accepted for publication/presentation in the Proceedings of the Int'l Conference Communication, (ICC'10), Cape Town, South Africa, May 2010.
12. "An Embedded Uniform Linear Monopole Antenna Array in a Wing Structure of a UAV", **Mohammad S. Sharawi**, **Daniel N. Aloï** and **Osamah A. Rawashdeh**, 11th IEEE Wireless and Microwave Technology Conference (WAMICON), Melbourne, Florida, USA, 12-13 April 2010.
13. "Performance of an Embedded Monopole Antenna Array in a UAV wing structure", **Mohammad S. Sharawi**, **Osamah A. Rawashdeh** and **Daniel N. Aloï**, 15th IEEE Mediterranean Electro-Technical Conference (MELECON), Valletta, Malta, 25-28 April 2010.
14. "Evaluation and Field Testing of an Embedded Antenna in a Small UAV wing structure", **Mohammad S. Sharawi**, **Osamah A. Rawashdeh** and **Daniel N. Aloï**, IEEE 2010 Radio and Wireless Symposium, New Orleans, Louisiana, USA, January 10-14, 2010.

15. "Optimal power allocation for layered multimedia transmission via broadcast over Rayleigh fading channels," **Mohammad Shaqfi, Wessam Mesbah and Hussein Alnuweiri**, in Proc. IEEE Int. Conf. Multimedia Computing and Information Technology, Sharjah, UAE, March 2010.
16. "Utility maximization for layered broadcast over Rayleigh fading channels", **Mohammad Shaqfi, Wessam Mesbah and Hussein Alnuweiri**, in Proc. IEEE Int. Conf. Commun. (ICC), Cape Town, South Africa, May 2010.
17. "Utility maximization for layered multimedia transmission via orthogonal multiplexing", **Mohammad Shaqfi, Wessam Mesbah and Hussein Alnuweiri**, in Proc. IEEE Int. Conf. Telecommun. (ICT), Doha, Qatar, April 2010.
18. "Variable Step-Size Least Mean Square Algorithms Over Adaptive Networks", **Muhammad Omer Bin Saeed, Azzedine Zerguine, and Salam A. Zummo**, Accepted for publication/presentation in the Proceedings of the Int'l Conference on Information, Science, Signal Processing, and their Applications, (ISSPA'10), Kuala Lumpur, Malaysia, May 2010.
19. "Low voltage and low power CMOS current mode divider and 1/x Circuit", **Munir A. Al-Absi**, 2010 International Conference on Electronic Devices, Systems and Applications (ICEDSA2010), Malaysia, April 12, 2010, pp. 241-243.
20. "Compressive Sensing for Feedback Reduction in MIMO Broadcast Channels", **S. T. Qaseem, T. Y. Al-Naffouri, and S. Alghadhban**, IEEE International Conference on Telecommunications (ICT), Doha, Qatar, April 2010.
21. "Aperture Coupled multilayer Microstrip Power Divider", **Sheikh Sharif Iqbal Mitu**, Progress in Electromagnetic Research Symposium (PIERS'10), Cambridge USA, July 5-8, 2010.
22. "Aperture coupled Phased Array with Novel Phase Shifter", **Sheikh Sharif Iqbal Mitu**, Progress in Electromagnetic Research Symposium (PIERS'10), Cambridge USA, July 5-8, 2010.
23. "Multilayer Unequal Microstrip Power Divider", **Sheikh Sharif Iqbal Mitu**, 2010 IEEE International Symposium on Antennas and Propagation (APS) Toronto, Canada, July 11-17, 2010.
24. "Accurate & Efficient Wavefield Extrapolators Using f-x Filters", **W. Mousa**, IEEE Intr. Conf. Of Acoustics. Speech and Signal Proc. (ICASSP) 2010, pages: 1210-1213.
25. "Jointly optimized heterogeneous MIMO broadcast systems", **Wessam Mesbah and Hussein Alnuweiri**, Proc. IEEE Int. Conf. Telecommun. (ICT), Doha, Qatar, April 2010.
26. "Quasi-Newton Multimodulus Blind Equalization Algorithm", **K. N. Paracha and A. Zerguine**, The 9th IEEE International Symposium on Signal Processing and Information Technology, ISSPIT 2009, Ajman, UAE, December 14-17, 2009

27. "Efficient weighted-sum-rate maximization for a class of half-duplex cooperative systems", **Wessam Mesbah** and **T. N. Davidson**, Proc. IEEE Int. Conf. Acoustics, Speech and Signal Processing (ICASSP), Dallas, TX, March 2010.
28. "Wide area system information using internet networking an application for early detection of transient instabilities in power system", **Fahd Hashiesh**, **Hossam E. Mostafa**, **Mohamed M. Mansour**, **Ibrahim Helal**, The 5th eServices Symposium of the Eastern Province: Comprehensive eServices: Successes and Challenges, La Meridian Hotel, Al-Khubar, Saudi Arabia, 22-24 March 22-24, 2010.
29. "Investigating and Studying the Thermal Effect of the Underground Cables", **M. H. Shwehdi**, **Abdulaziz A. Al-Nuaim**, and **Fahad S. Al-Ismail**, The International Symposium on Electrical Insulation (ISEI 2010), San Diego, California, USA, June 6-9, 2010
30. "On the Convergence Analysis of a Variable Step-Size LMF Algorithm of the Quotient Form", **S. M. Asad**, **A. Zerguine**, and **M. Moinuddin**, ICASSP 2010, Dallas, Texas, USA, March 14-19, 2010
31. "GaN based Doherty power amplifiers for wireless communication infrastructure", **O. Hammi**, **R. Darraji**, and **F. M. Ghannouchi**, IEEE International Microwave Symposium (IMS2010), Anaheim, CA, May 2010. (invited)

Mechanical Engineering Department

1. "The Role of Alumina in Aluminum Corrosion and Passivation", **Skrovan, J.**, **Alfantazi, A.**, and **Troczynski, T.**, 217th ECS Meeting, Vancouver, April 2010.
2. "Transport across sub-nanometer zeolite pores for water desalination", **Humplik, T.**, **Wang, E.N.**, **Laoui, T.**, 8th International Conference on Nanochannels, Microchannels, and Minichannels, ICNMM 2010, Montreal, Canada

Petroleum Engineering Department

1. Application of a Neural Network for Two-Phase Flow through Chokes," **Al-Khalifah, M.A.**, and **Al-Marhoun, M.A.**, Paper SPE 0063, Proceedings, 2010 SPE/DGS Annual Technical Symposium and Exhibition, Al-Khobar, April 4-7, 2010.
2. "Evaluation of Oil Compressibility Effects on Pressure Maintenance in Naturally Fractured Reservoirs Using Streamline Simulation," **Tanaka, S.**, **Arihara, N.** and **Al-Marhoun, M.A.**, Paper SPE 131716, Proceedings, CPS/SPE International Oil & Gas Conference and Exhibition in China held in Beijing, China, 8–10 June 2010.
3. "A Streamline-Based Dual-Porosity Model," **Tanaka, S.**, **Arihara, N.** and **Al-Marhoun, M.A.**, Paper SPE 130397, SPE EUROPEC/EAGE Annual Conference and Exhibition held in Barcelona, Spain, 14–17 June 2010.

Aerospace Engineering Department

1. Numerical Investigation of Mechanism for Anti-Icing Hot-Air Jet Surface Heat Transfer Enhancement”, **Saeed Farooq, A. Z. Al-Garni, and Khan M. M. A**, 10th AIAA/ASME Joint Thermo physics and Heat Transfer Conference, AIAA 2010-4770, Chicago, Illinois, USA, 28 June – 1 July, 2010 (1431H).
2. “Experimental & Numerical investigation of 65-deg Delta and 65/40-deg Double Delta Wings in Sideship”, **A. Z. Al-Garni and Saeed Farooq**, 28th AIAA Applied Aerodynamics Conference, AIAA 2010-4950 Chicago, Illinois, USA, 28 June – 1 July, 2010 (1431H).

College of Sciences

Chemistry Department

1. “On-site analytical techniques for environmental applications”, **Chanbasha Basheer**, Invited Speaker at EnviroArabia 2010, Bahrain, 18-21 April, 2010
2. "Single-step extraction for the determination of ionized and neutral analytes from complex sample matrices", **Chanbasha Basheer**, Keynote Speaker at International Conference for Young Chemist at Penang, Malaysia, June 23-26, 2010.
3. "Chemical Methods of Removing Metals From Heavy Residues”, **Siddiqui, M. N.:** 4th Saudi Science Conference, Al-Madinah Al-Munawarah, Saudi Arabia, March 21-24, 2010.
4. "Managing Waste Plastics by Tertiary Recycling Process”, **Siddiqui, M. N. and Gondal, M. A.:** EnviroArabia2010", Bahrain, April 18-21, 2010.
5. "Recycling of Waste Plastics into Important Chemicals Species", **Siddiqui, M. N.:** 5th Annual International Symposium on Environment, Athens, Greece, May 20-23, 2010.
6. “Synthesis and solution properties of amphiphilic cycloterpomers of 1,1-diallyl-4-formylpiperazinium chloride, diallyloctadecylammonium chloride and sulfur dioxide”, **Shaikh Asrof Ali, Hasan Ali Al-Muallem, Nedal Yousif. Abu-Thabit**, Fourth Saudi Science Conference, Taibah University, Al-Madinah Al-Munawwarah, Saudi Arabia, 21-24 March 2010.
7. “Glassy Carbon Paste Electrodes for Guanine and ssDNA Detection”, **Kawde, A.** The 4th Saudi Science Conference, Al-Madinah Al-Munawarah, KSA, March 21-24, 2010.
8. “Enzyme-Linked Assay for Point-of-Cares Dry-Reagent Strip Biosensors”, **Kawde, A.** and Liu G., Pittcon 2010 Conference on Analytical Chemistry and Applied Spectroscopy, Orlando, Florida, USA, Feb. 28- March 5, 2010.

9. "Glassy Carbon Paste Composite Electrodes for the Electroanalytical Determination of Ciprofloxacin Antibiotic", AlSharaa A. and **Kawde, A.** 239th American Chemical Society National Meeting & Exposition, San Francisco, CA, USA, March 21-25, 2010.
10. "Glassy Carbon Paste Composite Electrodes for the Electroanalytical Determination of Guanosine", AlSharaa A. and **Kawde, A.** The 1st Scientific Conference of Higher Education Students, Riyadh, KSA, March 1-4, 2010.
11. "Electrochemical Investigation of Glassy Carbon Paste Electrode and its Application for Guanine and ssDNA Detection", Tawfik S. and **Kawde, A.** The 1st Scientific Conference of Higher Education Students, Riyadh, KSA, March 1-4, 2010.

Earth Sciences Department

1. "Estimation of Reservoir Properties from Seismic Attributes and Well Log Data using Artificial Neural Networks", M. Sitouah, **G. Korvin, A. Al-Shuhail, A. Osman, A. AbdulRaheem,** Extended Abstract, Session: New Developments, St Petersburg, Russia, May 4, 2010
2. "Assessing the Efficiency of Locally Produced Multi-Walled Carbon Nanotubes (MWCNTs) in Treating Water Contaminated with Mercury". **B. Tawabini,** S. Al-Khaldi, M. Atieh, and M. Khaled. Proceedings of EnviroArabia 2010 Conference. Manama, Bahrain, 18-21 April 2010.
3. "Estimation of Reservoir Properties from Seismic Attributes and Well Log Data using Artificial Neural Networks" Sitouah, M., **Korvin, G., Al-Shuhail, A., Abdullatif, O., Abdulraheem, A., and Zerguine, A.** GEO2010, Manama, Bahrain.
4. "Mapping the Internal Structure of Sand Dunes in the Jafurah Desert of Eastern Saudi Arabia Using Ground Penetrating Radar", Adetunji, A., **Al-Shuhail, A., and Korvin, G.,** GEO2010, Manama, Bahrain.
5. "Fault Detection Using Azimuthal Coherence Attribute: Case Study, Central Saudi Arabia", Al-Qahtani, F., **Al-Shuhail, A., and Al-Dossary, S.,** GEO2010, Manama, Bahrain.

Department of Mathematics & Statistics

1. "Lehrstuhl Mathematik II" **Ahmad, I.,** 10th Algebraic Combinatorics and Applications conference, Universitat Bayreuth, Thurnau, Germany, (April 11-18, 2010).
2. "Interpolation beyond the interval of convergence", **Bokhari, M.A., and Al-Attas, H.,** 7th ISAAC Congress Imperial College London, World Scientific Publishing, Co., p. 579-585, 2010.
3. "Inertial manifolds for singularly perturbed damped wave equations", **Bonfoh, A.,** The First International Conference on Mathematics and Statistics, American University of Sharjah, Sharjah, UAE, (March 18-21, 2010).

4. "A graphical representation of the solution of the generalized Burger equation", **Boubaker, S.**, First International Conference on Mathematics and Statistics, Sharjah, UAE, (March 18 to March 21, 2010).
5. "Parabolic Problems with Discontinuous Nonlinearities and Nonlocal Conditions", **Boucherif, A.**, International on Analysis and Applications, Sultan Qaboos University, Sultanate Oman, (January 24-26, 2010).
6. "Parabolic Inclusions with Nonlocal Conditions", **Boucherif, A.**, in "Recent Developments In Nonlinear Analysis", Proceedings of the 2008 Conference in Mathematics and Mathematical Physics, Fez, Morocco, (March 2010).
7. "Nonlocal Conditions for Lower Semi-continuous Parabolic Inclusions", **Boucherif, A.**, The First International Conference on Mathematics and Statistics, American University of Sharjah, UAE, (March 18-21, 2010).
8. "Conference on Numerical Methods for Fluid Dynamics", **Fairag, F.**, (ICFD 2010), 12th - University of Reading , Reading, UK., (15th April 2010).
9. "International Conference on Analysis and Applications" **Louhichi, I.**, Sultan Qaboos University, Muscat, Oman, (January 24-26, 2010).
10. "The First International Conference on Mathematics and Statistics", **Louhichi, I.**, AUS-ICMS'10, American University of Sharjah (UAE), (March 18-21, 2010).
11. "On the Control of Solutions of a Coupled System of Nonlinear Viscoelastic Equations", **Messaoudi, S.**, International Conference On Analysis and Applications ICAA2010, Sultan Qaboos University, Muscat, Oman, (January 24-26, 2010).
12. "On Convexity for Energy Decay Rates of a Viscoelastic Equation", **Messaoudi, S.**, The Joint AMS and the First International Conference on Mathematics and Statistics, AUS-ICMS '10, AUS, Sharjah, UAE, (March 18-21, 2010).
13. "General decay for the solution of a viscoelastic wave equation with a nonlinear damping", **Messaoudi, S.**, The 8th AIMS conference, Dresden, (May 25-28, 2010).
14. "Krull dimension, Overrings and Semistar Operations of an Integral Domain", **Mimouni, A.** The First International Conference on Mathematics and Statistics, AUS, Sharjah, UAE, (March 18-21, 2010).
15. "Study Behavior in a Preparatory Mathematics Program: A Case of Bilingual Arab Pre-University Students", **Omar, M.H., AbuJiya, M., Yushau, B., Al-Attas, H. and Khan, M.A.**, in the CD of the Proceedings of First International Conference on Mathematics and Statistics (AUS-ICMS '10), Sharjah, UAE, CD paper #100272 pp. 1-5, (Mar, 2010).

16. "On An abstract Second Order Fractional Differential Equation", **Tatar, N.-e.**, International Conference on Analysis and Applications, Sultan Qaboos University, Muscat, Oman, (January 24-26, 2010).
17. "Nonexistence for a Viscoelastic Problem in the Whole Space", **Tatar, N.-e.**, The 8th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden, Germany, (May 25-28, 2010).
18. "Boundary Condition of Fractional Type", **Tatar, N.-e.**, Emerging Topics in Dynamical Systems and P.D.E., Barcelona, Spain, (May 31 – June 4, 2010).
19. "Two ways to the hypergeometric distribution" **Joarder, A.**, Fourth Saudi Science Conference held at Taibah University, Madina, Saudi Arabia, (March 21-24, 2010).
20. "Characterizations of Fuzzy Supra Alpha-Functions", **Latif, R. M.**, Fourth Saudi Science Conference, Taibah University, Madina, Saudi Arabia, (March 21 – 24, 2010).
21. "Numerical Solution of Navier Stokes Equations Using Radial Basis Function", **Fairag, F., and Al-Gahtani, H.**, The Institute For Computational Fluid Dynamics (ICFD), Proceedings of the 10th ICFD Conference on Numerical Methods for Fluid Dynamics (ICFD 2010), 12th - 15th April 2010, University of Reading , Reading, UK
22. "Preconditioned Krylov Subspaces Methods For Incompressible Viscous Flow", **Fairag, F., and Hattan, T.**, The Institute For Computational Fluid Dynamics (ICFD) , Proceedings of the 10th ICFD Conference on Numerical Methods for Fluid Dynamics (ICFD 2010), 12th - 15th April 2010, University of Reading , Reading, UK.
23. "Weak convergence of Ishikawa iterates of nonexpansive maps, **Khan, A.R.**, International Conference of applied and Engineering Mathematics, Imperial College, London (June 30-July 2,2010)
24. "Weak and strong convergence of an iteration process in convex metric spaces, **Khan, A.R.**, 11th International Conference on P-Adic Functional Analysis, Univ. Blaise Pascal, Clermont Ferrand, France(July 5-9, 2010).

Physics Department

1. "Synthesis and Characterization of Mo doped ZnO Thin Films", **A. Mekki and N. Tabet**, presented at the Fourth Saudi Science Conference, 21-24 March 2010, Taiba University, Madinah, KSA.
2. "Performance Comparison of Large NaI(Tl) and BGO detector for detection of H, C, N and O elements in bulk samples- A Monte Carlo Study", **Naqvi A., A. Khateeb-ur-Rehman, Khiari F. Z; M. I. Al-Jarallah, A.H. Issab, Raashid M. and Azad-ul-Islam**. Presented in Fourth Saudi Science Conference-Contribution of Science Faculties in the Development of KSA, March 21-24, 2010 held at Taybah University, Al-Madina, Saudi Arabia.

3. "Water Salinity Measurement using PGNAA Technique", Faris Ahmed Al Matouq, Mohammad S. Alanazi and **A. A. Naqvi**, Presented in Fourth Saudi Science Conference-Contribution of Science Faculties in the Development of KSA March 21-24, 2010 held at Taybah University, Al-Madina, Saudi Arabia.
4. "Surface Characterization of MgB_2 and AlB_2 by X-ray Photoelectron Spectroscopy", **M. Faiz, Kh.A. Ziq, A.F. Salem**, Monika Mudgel, and V.P.S. Awana, International Conference on Superconductivity and Magnetism, 20-25 April 2010, Antalya, Turkey.
5. "Indoor radon survey in Hail region of Saudi Arabia", **M. I. Al-Jarallah, K. Abdalla**, Darwish Al-Azmi, **M. Azadul Islam*** and **A. H. Akintokun**, the 4th Saudi Science Conference held in the University of Taibah ,Saudi Arabia. In the period March21-24,2010.
6. "Studies on the Local Density of States", **M.S. Abdelmonem, H. Bahlouli and I. Nasser**, presented at the Fourth Saudi Science Conference, 21-24 March 2010, Taybah University, Madinah, KSA.
7. "Noise Effect on Front Propagation in Nonlinear Media", **S. Al-Marzoug, H. Bahlouli, and S. Al-Amoudi**, presented at the Fourth Saudi Science Conference, 21-24 March 2010, Taybah University, Madinah, KSA.
8. "Detection of Hazardous Contaminants in Lead based Paint using Laser Induced Breakdown Spectroscopy" M. M. Nasr, **M. A. Gondal, Z.H. Yamani**,, presented at the Fourth Saudi Science Conference, 21-24 March 2010, Taybah University, Madinah, KSA.
9. "Activity of Nano-Palladium implanted on Zinc Oxide against Invasive Enteric pathogens", M. A. Randhawa, **M. A. Gondal**, A. A. Bagabas, presented at the Fourth Saudi Science Conference, 21-24 March 2010, Taybah University, Madinah, KSA.
10. "Synthesis and Characterization of ZnO_2 Nanoparticles using Optical Techniques", **M.A. Gondal, Q.A. Drmosh , Z. H. Yamani** and T.A. Saleh, presented at the Fourth Saudi Science Conference, 21-24 March 2010, Taybah University, Madinah, KSA.
11. "Disinfection of Escherichia Coli Bacteria from Water by Laser Induced Photocatalytic Process using Pure and Doped nano- WO_3 ", **A. Khalil, M. A. Gondal, A. Dastageer** and A. Bagabas, International Conference on Environmental Science and Development (CESD 2010) February 26-28, 2010, Singapore (ISI Proceedings).
12. "The effect of aluminum and nitrogen on the growth of ZnO nanorods." Amor Toumiat, Slimane Achour, Michel Troyon and **Nouar Tabet**, presented at the Fourth Saudi Science Conference, 21-24 March 2010, Taybah University, Madinah, KSA.
13. "Towards higher efficiency, scalable thin silicon material and solar cells" **N. Tabet**, Syed Said, A. Abdallah, C. Sebastian and Tonio Buonassisi, MIT-KFUPM Workshop, 10 Jan. 2010.
14. "CoRERE Research Program on amorphous Silicon Solar Cells " **N. Tabet**, Presentation at Regional Expert Meeting to Review the Renewable Energy Strategy and Energy Profile in the Gulf Region, Jeddah, 25-27 January 2010

College of Computer Science and Engineering**Information & Computer Science Department**

1. "The size of research centers in both Australian Universities and Saudi Universities: A Descriptive Study", **Shouki Abdullah Ebad**, 2nd Conference on Planning and Development of Education and Scientific Research in the Arab States, Saudi Arabia, KFUPM, Saudi Arabia, February 2008.
2. "Grammars for RNA Structures", **Muhammed S. Al-Mulhem**, International Multi-Conference on Complexity, Informatics and Cybernetics, April 6-9, 2010, Orlando, Florida, USA, pp. 274-277.
3. "The Impact of Acceptance Tests on Analyzing Component-Based System Specifications: An Experimental Evaluation", **Sajjad Mahmood** In Proceedings of The 10th IEEE International Conference On Computer and Information Technology (CIT2010), UK, IEEE Computer Society Press, 2010.
4. "Printed Arabic Text Database (PATDB) for Research and Benchmarking", **Amin G. Al-Hashim and Sabri A Mahmoud**, WSEAS Intern. Conferences, March 2010, Penang, Malaysia
5. "Unconstrained Arabic Handwritten Character Recognition using Fuzzy Attributed Turning Functions", **Mohammad Tanvir Parvez and Sabri A Mahmoud**, the first Scientific Conference for Higher Education Students, Riyadh, March1, 2010. Won First Prize in the Science & Engineering Category (M.S./Ph.D. students category).
6. "The Identifiability of Arabic Handwritten Digits", **Sameh Owaidah and Sabri Mahmoud**, the first Scientific Conference for Higher Education Students, Riyadh, March1, 2010. Won 8th Prize in the Science & Engineering Category (M.S./Ph.D. students category).
7. "Recognition of Arabic (Indian) Numerals using Abductive Network", **Isah Abdullah Lawal, Radwan Abdel-Aal and Sabri Mahmoud**, the first Scientific Conference for Higher Education Students, Riyadh, March1, 2010.
8. "A Novel Minimal Arabic Script for Preparing Databases, "Synthesis of Arabic Handwriting", **Yousef Elarian, Husni A. Al-Muhtaseb, Sabri A. Mahmoud, and Lahouari Guti**, the first Scientific Conference for Higher Education Students, Riyadh, March 1, 2010, Won 4th Prize in the Science & Engineering Category (M.S./Ph.D. students category).
9. "Recognition of Handwritten Arabic (Indian) Numerals using Radon-Fourier-based Features", **Sabri A Mahmoud and Marwan H. Abu-Amara**, WSEAS Intern. Conferences, Feb. 2010, Cambridge, UK, pp. 158-163.
10. "Offline Recognition of Handwritten Numeral Characters with Polynomial Neural Networks Using Topological Features," **El-Alfy, E.-S. M.**, the Canadian 23rd Artificial Intelligence (AI 2010), Ottawa, Canada, May 31-June 2, 2010.

11. "Flow-Based Path Selection for Internet Traffic Engineering with NSGA-II," **El-Alfy, E.-S. M.**, Proceedings of the 17th International Conference on Telecommunications (ICT2010), Doha, Qatar, April 4-7, 2010.
12. "Web Applications Vulnerabilities: An Overview," **El-Alfy, E.-S. M.**, College of Computer Sciences and Engineering, KFUPM, January 26, 2010.
13. "Web Application Security Threats and Countermeasures: Recent Developments and Future," **El-Alfy, E.-S. M.**, Keynote Speech, The Third International Conference on Information & Communication Technologies (ICICT'09), Karachi, Pakistan.
14. "Printed Arabic Text Database (PATDB) for Research and Benchmarking", **Amin G. Al-Hashim and Sabri A. Mahmoud**, Proceedings of the 9th WSEAS International Conference on Applications of Computer Engineering (ACE'10), 2010, pp. 62-68.

Computer Engineering Department

1. "Optimal Node Repositioning for Tolerating Node Failure in Wireless Sensor Actor Network," **Alfhadly, U. Baroudi and M. Younis**, 25th Queen's Biennial Symposium on Communications, Ontario, Canada, 2010.
2. "Restoring Connectivity in Wireless Sensor-Actor Networks with Minimal Topology Changes," **A. Abbasi, M. Younis and U. Baroudi**, IEEE ICC, Cape Town, South Africa, May 23-27, 2010.
3. "Design of a Library of Motion Functions for a Humanoid Robot for a Football Game," **M. Al-Mouhamed and A. Abu-Arafah**, Accepted in the 8th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-2010), 2010, Page(s):1– 6.
4. "Graph Coloring for Class Scheduling," **A. Dandashi and M. Al-Mouhamed**, Accepted in the 8th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-2010), 2010, Page(s):1 – 4.
5. "On the Use of Unified And-Or Fuzzy Operator for Distributed Node Exhaustion Attack Decision-making in Wireless Sensor Networks", **Salman Khan and Zubair A. Baig**, IEEE World Congress on Computational Intelligence, July, 2010 (Special Session on Fuzzy Logic).
6. "Fuzzy Logic-Based Decision Making for Detecting Distributed Node Exhaustion Attacks in Wireless Sensor Networks", **Zubair A. Baig and Salman A. Khan**, International Conference on Future Networks, China, January, 2010.
7. "Design and implementation of an unmanned ground vehicle for security applications", **A. Bouhraoua, N. Merah, M. AlDajani, M. ElShafei**, 7th International Symposium on Mechatronics and its Applications (ISMA), April 2010, Sharjah UAE, pp 1-6.

8. "A New Client Interface Architecture for the Modified Fat Tree (MFT) Network-on-Chip (NoC) Topology," **A. Bouhraoua and M. Elrabaa**, Proceedings of the 5th International Workshop on Reconfigurable Communication-centric Systems on Chip 2010 – ReCoSoC‘10 May 17-19, 2010 Karlsruhe, Germany, pp 169-172.

Systems Engineering Department

1. "Robust Control of a Closed loop identified system with parametric/model uncertainties and external disturbances ", Rajamani Doraiswami, **Lahouari Cheded**, Haris M. Khalid, Qadeer Ahmed and Amar Khoukhi, International Conference on Systems, Modeling and Simulations, January 27-29, 2010, Liverpool, UK.
2. "Model Order Selection criterion with Application to Physical Systems", Rajamani Doraiswami, **Lahouari Cheded** and Haris M. Khalid, Accepted in IEEE Conference on Automation, Science and Engineering (CASE), Toronto, Canada, August 21-24, 2010.
3. "Quality Monitoring of a closed-loop system with parametric uncertainties and external disturbances: A Fault Detection and Isolation Approach", M.A. Rahim, Haris M. Khalid, M. Akram, **Lahouari Cheded**, Rajamani Doraiswami, Amar Khoukhi, Accepted in WASET's International Conference on Computer, Electrical and Systems Engineering (ISI Cited) , Singapore, August 25-27, 2010.
4. "Sensor Location Optimization for Fault Detection and Isolation using Linear Programming Approach", Rajamani Doraiswami, **Lahouari Cheded**, Haris, M. Khalid, M. Akram, Hassini El-Kafi and 'Amar Khoukhi, Accepted in WASET's International Conference on Computer, Electrical and Systems Engineering (ISI Cited) , Singapore, August 25-27, 2010.

College of Industrial Management

Department of Management & Marketing

1. "A Cross-Cultural Perspective on Strategic Management: An Islamic Outlook," **Al-Qur'an, M.N.**, Proceedings of the 12th International Business Research Conference, Dubai, United Arab Emirates, 8-9 April, 2010.
2. "Centrality of Innovation, Entrepreneurship, Education and Research in Achieving Growth and Competitiveness: The case of Arab and Muslim Countries". **M-Said Oukil**, International Conference on Business and Economic Research March 15-16, 2010, Malaysia.

General Studies Department

1. "King Khalid and the Palestinian Question: Saudi Arabia Foreign Policy Towards the Palestinian Question During King Khalid Reign, 1975-1982", **Shafi Aldamer**, The Scientific Conference on King Khalid Bin Abdulaziz. Riyadh, May 9-11, 2010.

**ENTRIES RECEIVED FROM THE RESEARCH INSTITUTE AS WELL AS
FROM THE CENTERS OF RESEARCH EXCELLENCE****Center for Research Excellence in Nanotechnology**

1. “Laser induced photo-catalytic removal of chromium using ZnO semiconductor catalyst,” **Gondal, M.A., Qamar, M., and Yamani, Z.H.**, Presented at The SEGH 2010 International conference and workshops of the Society for the Environmental Geochemistry and Health (SEGH) on Environmental quality and Health at Galway, Ireland, 27th June to 2nd July, 2010.
2. “Amperometric Detection of Hydrogen peroxide by ZnO Tripod Nanostructures” **Qurashi, A., Ahmad, Mir T., Shinhora, H., Faiz M., and Tabet N.**, Presented at IMCS-13, Perth Australia, 11-14 July, 2010.
3. “Comparative study of nano and micro ZnO in antimicrobial activity in water using laser induced photo-catalytic process,” **Gondal, M.A., Dastageer, A., Khalil, A., and Yamani, Z.H.**, Presented at The SEGH 2010 International conference and workshops of the Society for the Environmental Geochemistry and Health (SEGH) on Environmental quality and Health at Galway, Ireland, 27th June to 2nd July, 2010.
4. “Photocatalytic degradation of health hazardous MTBE in water,” **Siddiqui, M.N., and Gondal, M.A.**, Presented at The SEGH 2010 International conference and workshops of the Society for the Environmental Geochemistry and Health (SEGH) on Environmental quality and Health at Galway, Ireland, 27th June to 2nd July, 2010.

10. BOOKS PUBLISHED AND CONTRIBUTIONS

Electrical Engineering Department

1. “Performance Analysis of Time-of-Arrival Mobile Positioning in Wireless CDMA Cellular Networks”, **M. A. Landolsi, A. Muqaibel, A. Al-Ahmari, H-R. Khan, R. Al-Nimmim**, Book Chapter in Trends in Telecommunications Technologies, pp. 437-456 , ISBN 978-953-307-072-8, March 2010

Aerospace Engineering Department

1. **Wael G. Abdelrahman**: Associate Editor, Research Journal of Applied Sciences, Engineering and Technology, 2010
2. **Wael Abdelrahman**: Reviewer for _Proceedings of the Institution of Mechanical Engineers, Part G, Journal of Aerospace Engineering, 2010
3. **Wael Abdelrahman**: Reviewer for Structural Engineering and Mechanics, 2010

Department of Mathematics & Statistics

1. Application of the Feynman graphs to stochastic equation driven by non-Gaussian noise", **Boubaker, S.**, Preprint, Dhahran 2009\2010 (Book In writing).

Earth Sciences Department

1. “Erionite and its Health Effects”, **A.U. Dogan**, M. Dogan, and J.A. Hoskins. In Encyclopedia of Environmental Health. Article ID: 00725. Elsevier BV, Amsterdam, 2011.

Computer Engineering Department

1. “DDoS Attack Modeling and Detection in Wireless Sensor Networks”, **Zubair A. Baig and Asad I. Khan**, Mobile Intelligence: Mobile Computing and Computational Intelligence, John Wiley and Sons, January, 2010: 595-626.

Department of Management & Marketing

1. Rajendra Singh & **Azhar Kazmi**: Divergences in the Emerging Superpower: An Analysis of Competitive Advantage among States in India VDM Verlag Dr. Müller Aktiengesellschaft & Co. KG, Saarbrücken, Germany, 2010
2. **Azhar Kazmi**: Reviewer for Baltic Journal of Management 2009-2010
3. **Azhar Kazmi** : Reviewer for Asian Journal of Business Research 2010
4. **Azhar Kazmi** : Reviewer for Journal of Management Development 2010
5. **Azhar Kazmi**: Reviewer for the annual conference of the Academy of International Business 2010

Research Institute

Center for Research Excellence in Nanotechnology

1. “Structural analysis of Metal Oxide Nanostructures,” (in Handbook of Structural Analysis), **Qurashi, A., Faiz. M., and Tabet, N.**, Nova Science Publishers, Inc., New York, USA. 2010.
2. “Biomedical Applications of ZnO Nanostructures,” (in handbook of Recent Developments in Bio-Nanocomposites for Biomedical Applications), **Qurashi, A.**, Nova Science Publishers, Inc., New York, USA. 2010.

11. TECHNICAL REPORTS, FUNDED PROJECTS AND PATENTS

College of Engineering

Civil Engineering Department

1. “Production of Granular Activated Carbon from Date Palm Tree Branches”, **Vohra, M.S. (P.I.), Al-Zahrani, M.A., and Essa, M.H.**, Revised Final Report, KACST Funded Project (Project Number: AR 26-23), January 2010.
2. “Integrated Management of Oil Fuel Flyash Produced at Power Plants”, **Al-Malack, M.H. (PI), Bukhari, A.A., Al-Amoudi O.S., and Al-Yousif, A.K.**, Submitted to KACST.

Electrical Engineering Department

- 1- “Control of Doubly-Fed Induction Generator Based Wind Generation Systems”, **A.H.M.A.Rahim and I.O. Habiballah**, KFUPM Fast Track/ SABIC Project SB080006, Sept 2008- Feb 2010 .

Aerospace Engineering Department

1. “الكوكب الوضاء في الطيران والفضاء”, **A.Z. Al-Garni and W.G. Abdelrahman**, Accepted Final Book Writing Report funded by DSR (Project No. AR070003) , KFUPM, March 2010.
2. “Detailed Design and Capability Development for Saudi Autonomous UAV,” **A.Z. Al-Garni and W.G. Abdelrahman**, NSTIP, (Project No. 08-SPA467-4) , Accepted Progress Report No. 1, March 2010.
3. “Introduction to Flight”, **A.Z. Al-Garni and W.G. Abdelrahman**, Accepted Book Translation Proposal, 2010-2012.
4. “Fundamentals of Aerospace Engineering”, **A.Z. Al-Garni and W.G. Abdelrahman**, Arabic book writing project funded by DSR, (Project No. AR090007), Accepted Progress Report No. 2, May 2010.
5. “Aerodynamic Performance and Lateral Stability Analyses of Delta and Double-Delta Wing Configurations,” **Al-Garni, A. Z., and Saeed, F.**, Final Report, KFUPM/DSR (Project No. FT070012), Jan. 2010.
6. “Development of a Design Method for Inertial or Sand Particle Separator,” **Saeed, F. and Al-Garni, A. Z.**, Final Report, KFUPM/SABIC, (Project No. SB080005), April 2010.
7. “Wind-Solar Desalination Farm and Park”, US Patent, **A. Z. Al-Garni, F. Saeed, and A. Kassem**, US patent office, 2010 (*1431H*).

College of Sciences

Chemistry Department

1. “Field-Deployable Electrochemical Sensors for Heavy Metals Detection” **Kawde, A.** (Principal Investigator), **Al-Hooshani K.** (Co-Investigator) Project Number: AT-28-27, Progress Report-2, submitted to King Abdulaziz City for Science and Technology (KACST), Dec. 2009.
2. “Progress report on Chem 323 online Course Grant” **A. Kawde** and **K. Al-hooshani**, DAD, Jan. 2010.

Earth Sciences Department

1. Ground Penetrating Radar (GPR) Survey of the North Rakah Archeological Site in the Eastern Province of Saudi Arabia: A Preliminary Report”, **Al-Shuhail, A. A.**, 2010, 15 pp.

Department of Mathematics & Statistics

1. "Regularization of Initial Inverse Problems in Heat Equation Using Fourier Transforms", **Yousuf, M. and Masood, K.**, Technical Report# 412.
2. "Spectral Collocation Method based on Gauss—Legendre points for Numerical Solution of Second Order Linear Differential Equations" **Yousuf, M.**, Technical Report# 413.

12. INTERNAL LECTURES AND SEMINARS OFFERED BY KFUPM FACULTY

Electrical Engineering Department

1. Speaker : Dr. Wissam Jamal
Topic : Fundamentals of Power Electronics and Applications
Date : January 12, 2010
2. Speaker : Prof. B. M. Azizur Rahman
Topic : Rigorous Design Optimization of Photonic Devices
Date : February 27, 2010
3. Speaker : Prof. B. M. Azizur Rahman
Topic : Photonics Research at City University London
Date : February 28, 2010
4. Speaker : Dr. Yehia Massoud
Topic : Modeling and Robust Design Solutions for Emerging
Nanoscale Technologies
Date : March 9, 2010

Mechanical Engineering Department

1. Speaker : Dr. Ahmed Gmira
Topic : Atomic Force Microscopy: Physics and Applications
Date : March 09, 2010
2. Speaker : Dr. Abdulrahman Shuaib
Topic : MIT-visit
Date : March 16, 2010
3. Speaker : Dr. Mahir Hassan
Topic : Non-traditional Robotic Manipulator Design for Fault Tolerant
and High Performance Operations
Date : March 23, 2010
4. Speaker : Dr. Zaidi
Topic : MIT-visit
Date : March 30, 2010
5. Speaker : Dr. Numan AbuDheir
Topic : MIT-visit
Date : April 13, 2010
6. Speaker : Dr. Z. Khan
Topic : MIT-visit
Date : April 27, 2010

7. Speaker : Mr. Antonio Galati
Topic : Industrial Process Equipments
Date : May 04, 2010
8. Speaker : Dr. Hawwa
Topic : MIT-visit
Date : May 11, 2010
9. Speaker : Mr. Wilfried Ritter
Topic : The Global Plant Design Project Execution
Date : May 16, 2010
10. Speaker : Mr. Husain Al-Muslim
Topic : Developing assessment criteria for combined mechanical damage in transportation pipelines utilizing probability design analysis.
Date : May 18, 2010

Aerospace Engineering Department

1. Speaker : Dr. Wael G. Abdelrahman
Topic : Advances in Woven Composites for Aerospace Applications
Date : April 10, 2010

Department of Management & Marketing

1. Speaker : Dr. Abdulwahab Said Al-Kahtani
Topic : The Role of Leadership in Enhancing the Culture of Total Quality Management
Sponsored by : Saudi Electricity Company, Dammam
Date : April 27, 2010
2. Speaker : Dr. Abdulwahab Said Al-Kahtani
Topic : The Impact of the WTO Agreements on the Competitiveness of Saudi Private Sector
Sponsored by : Chamber of Commerce & Industry, Jizan
Date : April 19, 2010
3. Speaker : Dr. Abdulwahab Said Al-Kahtani
Topic : The Impact of the WTO Agreements on the Competitiveness of Saudi Private Sector
Sponsored by : Chamber of Commerce & Industry, Abha
Date : April 18, 2010
4. Speaker : Dr. Abdulwahab Said Al-Kahtani
Topic : The Impact of the WTO Agreements on the Competitiveness of Saudi Private Sector
Sponsored by : Chamber of Commerce & Industry, Najran
Date : January 19, 2010

5. Speaker : Dr. Ali Moussa (KFUPM-DCC)
 Title : How Smart was Abu al-Wafa' to Determine the Direction of Qibla?
 Date : Tuesday, January 19, 2010

6. Speaker : Prof. Aslam Chaudhry
 Title : On the Development of the proof of the Riemann Hypothesis
 Date : Tuesday, January 26, 2010

7. Speaker : Mr. Badr Al-Humdiai
 Title : Incomplete Gamma Functions and Application to Heat Conduction Problems
 Date : Tuesday, February 02, 2010

8. Speaker : Dr. Robert Heffernan
 Title : What is the probability that two elements of a (finite) group commute?
 Date : Tuesday, February 23, 2010

9. Speaker : Prof. M. ElGebeily
 Title : Type I Operators and their Approximation by the Galerkin Method
 Date : Tuesday, March 02, 2010

10. Speaker : Mr. Shoaib A. Qurashi
 Title : ISI Web of Knowledge Databases
 Date : Tuesday, March 30, 2010

11. Speaker : Prof. A. Boucherif
 Title : Some Nonlinear Problems in Mathematics (Physics Day)
 Date : Sunday, April 11, 2010

12. Speaker : Dr. Kassem Mustapha
 Title : An hp-version discontinuous Galerkin method for integro-differential equations
 of parabolic type
 Date : Tuesday, April 13, 2010

13. Speaker : Dr. Stephen Binns
 Title : Geometry and Information
 Date : Tuesday, April 27, 2010

14. Speaker : Dr. Ahmed Bonfoh
 Title : Inertial Manifolds for Singularly Perturbed Damped Wave Equations
 Date : Tuesday, May 18, 2010

15. Speaker : Dr. Uwe Schauz
 Title : Colorings and Nowhere Zero Flows of Graphs in Terms of Berlekamp's
 Switching Game
 Date : Tuesday, June 1, 2010

16. Speaker : Dr. Khaled Furati
 Title : Global Existence and Asymptotic Behavior for a Class of Fractional
 Differential Equations
 Date : Tuesday, June 8, 2010

Research (Star) Colloquium Seminar

1. Speaker : Dr. Hassen A. Muttalak and Mr. Mohammad F. Saleh
Title : Estimating $P(Y < X)$ using ranked set sampling in case of the exponential distributions
Date : Sunday, January 10, 2010
2. Speaker : Dr. Hassen A. Muttalak
Title : Stein-Type estimation using ranked set sampling
Date : Sunday, March 14, 2010
3. Speaker : Dr. Mohammad H. Omar
Title : Statistical Process Control Charts to Measure and Monitor Rating Consistency over Time
Date : Sunday, April 11, 2010
4. Speaker : Prof. Madan L. Puri
Title : Asymptotic Normality, Rates of Convergence, and Large Deviation Probabilities for a Broad Class of Statistics
Date : Sunday, May 16, 2010
5. Speaker : Prof. Madan L. Puri
Title : Why Nonparametrics?
Date : Sunday, March 28, 2010
6. Speaker : Prof. Anwar H. Joarder
Title : Linear Combination of Two Correlated Chi-Square Variables
Date : Sunday, May 23, 2010
7. Speaker : Dr. Abdulkadir Hussein
Title : Efficient use of auxiliary information in group sequential testing of means
Date : Sunday, May 30, 2010
8. Speaker : Dr. Madan L. Puri
Title : Conditional U-Statistics with Applications in Discriminant Analysis, RMA Processes and Hidden Markov Models
Date : Sunday, June 6, 2010
9. Speaker : Dr. Abdulkadir Hussein
Title : Efficient use of auxiliary information in group sequential testing of means
Date : Sunday, June 13, 2010
10. Speaker : Prof. Madan L. Puri
Title : Conditional U-Statistics with Applications in Discriminant Analysis, ARMA Processes and Hidden Markov Models (Part 2 of 2)
Date : Sunday, June 20, 2010

Thesis Defense

1. Speaker : Mr. Muhammad Abdulwahab
Title : Similarity Classifications and Exact Invariant Solutions for the Generalized Burgers Equation
Date : Tuesday, January 5, 2010

2. Speaker : Radwan Ali Al-Rubaei
Title : On a Generalized Fisher Equation
Date : Tuesday, April 13, 2010
3. Speaker : Mr. Ahmed Yousef Al-Dweik
Title : Invariant Solution, Double Reductions and Conservation Laws for Certain PDE's
Date : Sunday, May 9, 2010
4. Speaker : Mr. Basim J.M. Al-Minshawy
Title : Heat Conduction from Two Spheres
Date : Wednesday, May 19, 2010
5. Speaker : Tijani Abdul-Aziz Apalara
Title : Asymptotic Behavior of Solutions of Some Viscoelastic Problems
Date : Tuesday, June 15, 2010

Students Seminar

1. Speaker : Mr. Ahmad Al-Dweik
Title : Invariant Solutions, Double Reductions and Conservation Laws for Certain Partial Differential Equations
Date : Wednesday, January 27, 2010
2. Speaker : Mr. Tijani Abdul-Aziz Apalara
Title : Asymptotic Behavior of Solutions of Some Viscoelastic Problems
Date : Tuesday, May 4, 2010
3. Speaker : Mr. Adel Al-Mahdi
Title : On Mapping between Partial Differential Equations
Date : Sunday, May 23, 2010
4. Speaker : Mr. Ahmad Mahdi (Math 599)
Title : Noether Symmetries and Conservation Laws
Date : Sunday, May 30, 2010
5. Speaker : Mr. Yousef M. Al-Khatib (Math 599)
Title : On a Fin Equation
Date : Wednesday, June 9, 2010
6. Speaker : Mr. Arafat Al-Jarrash (Math 599)
Title : Perturbation Techniques for Linear and Nonlinear Problems
Date : Sunday, June 13, 2010
7. Speaker : Mr. Mohammad Dahan Kassem (Math 599)
Title : Well-posedness for a Cauchy Fractional Differential Problem with Hilfer Type Fractional Derivative
Date : Sunday, June 13, 2010
8. Speaker : Mr. Mohammed Al-Shahrani
Title : Optimal control of constrained systems governed by nonlinear singular differential equations
Date : Wednesday, June 16, 2010
9. Speaker : Abdul Aziz Al-Suwailem
Title : Evolution of Curves and its Applications
Date : Tuesday, June 22, 2010-06-21 5-103

Visitor Seminars

1. Speaker : Prof. Harald Niederreiter
Title : Johann Radon Institute for Computational and Applied Mathematics, Austrian Academy of Sciences, Austria
Date : Tuesday, March 09, 2010
2. Speaker : Prof. Hermann Nicolai (Max-Planck-Institut für Gravitationsphysik Albert-Einstein-Institut)
Title : Einstein's unfulfilled dream: searching for a unified theory of physics
Date : Monday, March 15, 2010
3. Speaker : Prof. Hermann Nicolai (Max-Planck-Institut für Gravitationsphysik Albert-Einstein-Institut)
Title : Fun with octonions: a physicist's perspective
Date : Tuesday, March 16, 2010
4. Speaker : Prof. Boris S. Mordukhovich (Wayne State Univ. Michigan, USA)
Title : Variational Analysis in Optimization and Optimal Control
Date : Tuesday, March 16, 2010
5. Speaker : Prof. Jan P. Hogendijk (Univ. Utrecht and Adjunct Prof. KFUPM)
Title : The Influence of Islamic Science on the Development of Mathematics in Western Europe.
Date : Tuesday, March 23, 2010
6. Speaker : Prof. Jan P. Hogendijk (Univ. Utrecht and Adjunct Prof. at KFUPM)
Title : The determination of the quibla as a mathematical problem in (early) medieval Islamic science.
Date : Tuesday, March 30, 2010
7. Speaker : Prof. Asghar Qadir
Title : Complex Linearization
Date : Tuesday, April 6, 2010
8. Speaker : Prof. Qamrul Hasan Ansari
Title : Generalized Derivatives, Generalized Convexities and Generalized Monotonicities (Aligarh Muslim University, India)
Date : Tuesday, May 4, 2010
9. Speaker : Dr. Guillaume Rivalle (Thomson Scientific, United Kingdom)
Title : ISI Web of Knowledge (Work) Databases & Using End Note Software
Date : Tuesday, May 11, 2010
10. Speaker : Prof. Abbas Bahri (Rutgers University, USA)
Title : Critical Points at Infinity in Conformal Geometry: an overview
Date : Tuesday, May 25, 2010
11. Speaker : Prof. Abbas Bahri (Rutgers University, USA)
Title : A Variational Problem in Contact
Date : Wednesday, May 26, 2010
12. Speaker : Prof. Mourad E.H. Ismail (Dept. Mathematics, City Univ. Hong Kong & KSU)
Title : R. Willam Gosper and His Identities
Date : Tuesday, May 25, 2010

13. Speaker : Mr. H. Niederreiter (Austrian Academy of Sciences)
Title : The Asymptotic theory of error-correcting codes
Date : Sunday, March 07, 2010
14. Speaker : Prof. Mohamed Amine Khamsi (Texas Univ. El-Paso (USA) & Adjunct Prof. KFUPM)
Title : Are Cone Metric Spaces a Fake Concept?
Date : May 25, 2010
15. Speaker : Prof. Ravi P. Agarwal
Title : Singular Integral Equations with Real World Applications
Date : Tuesday, June 8, 2010
16. Speaker : Dr. Aissa Guesmia (Univ. Metz, France)
Title : On the stabilization of Timoshenko systems with memory and different speeds of wave propagation
Date : June 14, 2010

Workshop

1. Speaker : Mr. Willem Frederik De Graaf
Title : The Zawraqi Astrolabe
Date : Wednesday, March 31, 2010

Commutative Algebra Weekly Seminar (Organizer: Dr. S. Kabbaj),
October 2009 – January 2010 (Seminars given by the following faculty members)

1. Speaker : Dr. O. Echi
Title : Korselt numbers and sets
Date : Sunday, January 3, 2010
2. Speaker : Mr. M. Jarrar
Title : Matlis domains (2)
Date : Sunday, January 10, 2010
3. Speaker : Dr. J. Abuihlil
Title : Exact sequences in non-exact categories
Date : Sunday, January 17, 2010
4. Speaker : Mr. H. Niederreiter (Austrian Academy of Sciences)
Title : The Asymptotic theory of error-correcting codes
Date : Sunday, March 07, 2010
5. Speaker : Dr. I. Al-Rasasi
Title : Korselt numbers and sets (1)
Date : Sunday, March 28, 2010
6. Speaker : Dr. J. Abuihlail
Title : Fully prime modules (1)
Date : Sunday, March 04, 2010
7. Speaker : Dr. J. Abuihlail
Title : Fully prime modules (2)
Date : Sunday, April 11, 2010

8. Speaker : Dr. A. Boucherif (Physics Day, KFUPM)
Title : Some Nonlinear Problems in Mathematics
Date : Sunday, April 11, 2010
9. Speaker : Dr. O. Echi
Title : On Kronecker polynomials
Date : Sunday, May 02, 2010
10. Speaker : Mr. E. Boucida
Title : Convexity on the Khalimsky plane
Date : Sunday, May 09, 2010
11. Speaker : Mr. A. Mimouni
Title : Halter-Koch' proof of the v-domain conjecture
Date : Sunday, May 16, 2010
12. Speaker : Mr. K. Adarbeh
Title : Dimension Theory (1)
Date : Sunday, May 23, 2010
13. Speaker : Mr. K. Adarbeh
Title : Dimension Theory (2)
Date : Sunday, May 30, 2010

Department of Physics

1. Speaker : M. I. Al-Jarallah
Title : Applications of Ionizing Radiation
Place : Al-Akrabiah Community Center, Al-Khobar,
Date : March 28, 2010
2. Speaker : M. I. Al-Jarallah
Title : Indoor radon survey in Hail region of Saudi Arabia
Place & Date : KFUPM School, Sunday, 16 May, 2010
3. Speaker : N. Tabet
Title : Solar Cells Understanding the Physics, Engineering
Place & Date : King Abdullah Institute of Nanotechnology (KAIN), Riyadh ,
March 30th, 2010.

General Studies Department

1. Speaker : Ali Moftah
Title : Preventive Counseling for students
Date : January 2, 2010
Venue : The Counseling and Advising Centre
2. Speaker : Ali Moftah
Title : Stress management on exams
Date : Jan 17, 2010
Venue : The Counseling and Advising Centre

3. Speaker : Ali Moftah
 Title : Stress management on study
 Date : Feb 22, 2010
 Venue : The Counseling and Advising Centre

4. Speaker : Ali Moftah
 Title : Time management
 Date : March 7, 2010
 Venue : The Counseling and Advising Centre

Finance & Economics Department

1. Speaker : Dr. Mansur Masih
 Title : Price Dynamics of Different Types of Renewable Energy,
 Crude Oil, Natural Gas and Petrochemicals
 Dates : January 10, 2010 and March 18, 2010

Department of Management & Marketing

1. The Role of Leadership in Enhancing the Culture of Total Quality Management”, **Al-Kahtani, Abdulwahab Said**, Saudi Electricity Company, the Quality Award Annual Meeting (Eastern Division), Al-Khobar, The Holiday Inn, 27 April 2010.
2. “The Impact of the WTO Agreements on the Competitiveness of Saudi Private Sector”, **Al-Kahtani, Abdulwahab Said**, Jazan Chamber of Commerce and Industry, 19 April 2010.
3. “The Impact of the WTO Agreements on the Competitiveness of Saudi Private Sector”, **Al-Kahtani, Abdulwahab Said**, Abha Chamber of Commerce and Industry, 18 April 2010.
4. “The Impact of the WTO Agreements on the Competitiveness of Saudi Private Sector”, **Al-Kahtani, Abdulwahab Said**, Najran Chamber of Commerce and Industry, 19 January 2010.

Systems Engineering Department

1. Speaker : Engineer Faisal Ahmed AL-Nasser, PhD Student Part Time
Title : HMI Design Standards
Date : January 24, 2010
2. Speaker : Mr. Syed Minhjullah, R.A.
Title : “Fiber Optic Sensors: An introduction and overview”
Date : June 01, 2010
3. Speaker : Mr. Ashraf Dasa, SE Part Time Graduate
Title : “Modbus Protocol Overview”
Date : May 25, 2010
4. Speaker : Mr. Abdulrahman Suliman AL-Essa, SE Graduate Assistant
Title : “Maintenance performance Measurement”
Date : May 25, 2010
5. Speaker : Mr. Haitham Hassan Saleh, SE Graduate Assistant
Title : “A Review of Adaptive Resource Allocation in Multiuser OFDM Systems”
Date : June 2, 2010
6. Speaker : Mr. Mohammad Akram Afzal, SE R.A.
Title : “Supply Chain Risk Weak Link in Supply Chain Management”
Date : June 2, 2010
7. Speaker : Mr. Abdullah AL-Swailem, SE Part Graduate Student
Title : “Foundation Fieldbus Engineering”
Date : June 13, 2010

Seminars by others given in the Systems Engineering Department:

1. Speaker : Dr. Okyay Kaynak, UNESCO Chair on Mehatronis,
 Boazici University, Istanbul, Turkey
 Title : “Recent Advances and Future Directions in Mechatronic Systems”
 Date : February 28, 2010

2. Speaker : Dr. Okyay Kaynak, UNESCO Chair on Mehatronis,
 Boazici University, Istanbul, Turkey
 Title : “Sliding ModeControl and its Integration with Soft Computing Methodologies”
 Date : March 01, 2020

3. Speaker : Dr. Okyay Kaynak, UNESCO Chair on Mehatronis,
 Boazici University, Istanbul, Turkey
 Title : “From Industrial Electronics to Industrial Informatics”
 Date : March 02, 2010

4. Speaker : Mr. Wilfried Ritter, AVEA Technical Director, Middle East, Russia & CIS.
 Title : “Instrument and Systems Engineering with AVEA Instrumentation”
 Date : May 18, 2010

5. Speaker : Dr. Rashid Khan, IP, Technology Management, Saudi Aramco
 Title : “Reinventing Innovation: Oil is Found through Imagination”
 Date : June 01, 2010

Research Institute

Center for Research Excellence in Nanotechnology

LECTURES AND SEMINARS**Seminars presented by CENT staff**

1. Speaker : Dr. Mohammad Qamar
Title : Four Decades of Photocatalysis: Retrospective and Prospective Views
Date : Tuesday, 11th May, 2010

Seminars given by invited speakers at CENT and/or through CENT

1. Speaker : Dr. Abdullah Dawoud Bani-Yaseen
(Taiba University, Madina, KSA)
Title : Integrated Microfluidic Systems: Fabrication, Characterization and Applications
Date : Tuesday, May 1, 2010
2. Speaker : Mr. Waleed Shinwari
(Hamilton, Ontario, Canada)
Title : Fully Electronic DNA Hybridization Detection
Date : Tuesday, 12th January, 2010
3. Speaker : Dr. Leconte and Dr. Boulanger
(CEA/CNRS, France)
Title : Nanoparticles and Carbon Nanotubes: Synthesis and Applications for Energy and Water
Date : 2nd March, 2010
4. Speaker : Professor Michael Hunt
(Durham University, England)
Title : Tailoring the properties of Carbon Nanotubes through defects and functionalization
Date : Wednesday, 31 March, 2010
5. Speaker : Saad Shaker Al-Nabulsi,
Physical Electronics, Senior Scientist
Title : PHI VersaProbe Scanning XPS Multi-technique
Date : 13th June, 2010
6. Speaker : Professor Matteo Pasquali
(Rice University, Houston, Texas, USA)
Title : Fluid phases of nano-carbon
Date : Tuesday, 25th May, 2010

Invited Talks by CENT staff

1. Speaker : Dr. Z.H. Yamani
Title : Nanotechnology for the Petrochemicals Industry CENT as an example
Date : Tuesday, 27th June, 2010, Saudi Council of Engineers, Al-Jubail

13. SEMINARS OFFERED BY OUTSIDE SPEAKERS IN THE UNIVERSITY

Chemistry Department

1. Speaker : Dr. Basheer Chanbasha
 Title : Novel Analytical Techniques for Trace Level
 Quantization of Organic Compounds/Pollutants
 Date : October 18, 2009

Earth Sciences Department

1. Speaker : Dr. Patrick Connolly (BP Corp., London)
 Title : Robust Workflows for Seismic Reservoir Characterization
 Date : March 16, 2010
2. Speaker : Prof. Alain Prinzhofer (IFP, France)
 Title : Contribution of crustal and mantelic fluids on the
 functioning of petroleum systems
 Date : March 16, 2010
3. Speaker : Dr. Gerry Kuecher (Saudi Aramco)
 Title : Thinly Bedded Sequences as Potential Reservoirs
 Date : March 30, 2010
4. Speaker : Dr. Arun Kumar (KFUPM, RI)
 Title : Is it possible to urbanize and yet preserve natural
 heritage? An examination of mangrove ecosystem along
 the east coast of the Arabian Peninsula
 Date : April 3, 2010
5. Speaker : Dr. Jean-Marc Donadille (Schlumberger Dhahran Carb. Res.)
 Title : Electrical Anisotropy: Causes, Effects and Solutions
 Date : May 18, 2010
6. Speaker : Mr. Salem Shammari (Saudi Aramco)
 Title : Depositional and Facies Controls on Inherited/Infiltrated
 Clay Coatings: Permo-Carboniferous Sandstones
 Date : March 16, 2010

Physics Department

1. Speaker : Professor Hermann Nicolai
Max-Planck-Institut für Gravitationsphysik Albert-Einstein-Institut, Germany
Title : Einstein's unfulfilled dream: searching for a unified theory of physics
Date : Monday March 15, 2010
2. Speaker : Prof. Asghar Qadir, Adjunct Professor, Mathematics Dept., KFUPM,
Title : Hawking Radiation by Primordial Black Holes in an Accelerating Universe
Date & Time : Monday, 29 March 2010, 11:00 am
3. Speaker : Nadeem Ibrahimi, Wiley, GCC
Title : Demonstration on the New E-Learning Platform Called "Wiley Plus"
Date & Time : Monday, 5 April 2010, 11:00 am
4. Speaker : Mushtaq Mahmood
Title : Journey to the Al Hadidah Meteorite
Date : Monday 12th April 2010
5. Speaker : Dr. Patrice Ligneul, Scientific Director, Schlumberger Dhahran Carbonate Research Center, Dhahran Techno Valley - KFUPM
Title : Dielectric response of carbonate core-plugs - influence of heterogeneous rock properties on permittivity
Date & Time : Monday, 3 May 2010, 11:00 am

Petroleum Engineering Department

1. Speaker : Dr. William R. Rossen, Professor of Reservoir Engineering at Delft University of Technology
Topic : Research on Geotechnology at Delft University of Technology
Date : 7th March 2010
2. Speaker : Dr. Alain Prinzhofer, IFP Geochemist
Topic : Contribution of Crustal & Mantelic Fluids on the Functioning of Petroleum Systems
Date : 16th March 2010
3. Speaker : Dr. Bruce J. Balcom, Canada Research Chair in Materials Science MRI
Topic : Magnetic Resonance Imaging of Fluids in Porous Media
Date : 23rd March 2010
4. Speaker : Dr. Gerald J. Kuecher, Geological Specialist and Sedimentologist, Saudi Aramco
Topic : Thinly Bedded Sequences as Potential Reservoirs
Date : 30th March 2010

5. Speaker : Dr. Kamy Sepehrnoori, Professor of the Department of Petroleum & Geosystems Engineering, University of Texas at Austin, USA
 Topic : Application of Parallel and Distributed Computing in Reservoir Simulation
 Date : 19th May 2010