

RESEARCH NEWSLETTER

January, 2007

TABLE OF CONTENTS

	<u>Page #</u>
1. FOREWORD	2
2. ABSTRACTS OF SELECTED RESEARCH PROJECTS	3
3. RESEARCH/BOOK-WRITING PROJECTS CURRENTLY SUPPORTED BY THE UNIVERSITY	13
4. RESEARCH PROPOSALS UNDER REVIEW	22
5. BOOK-WRITING PROPOSALS UNDER REVIEW	27
6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2007-2008	28
7. SABIC AND FAST TRACK PROPOSALS RECEIVED FOR FUNDING DURING NOVEMBER/DECEMBER 2006	29
8. PUBLICATIONS IN REFEREED JOURNALS REPORTED AFTER JULY, 2006	34
9. RESEARCH PAPERS PRESENTED AT CONFERENCES REPORTED AFTER JULY, 2006	49
10. BOOKS PUBLISHED AND CONTRIBUTIONS	63
11. TECHNICAL REPORTS	65
12. INTERNAL LECTURES/SEMINARS PRESENTED BY KFUPM FACULTY	69
13. SEMINARS OFFERED BY OUTSIDE SPEAKERS AT KFUPM	83

FOREWORD

This first issue of the University Research Newsletter for the academic year 2006-2007 provides up-to-date information about the research and other scholarly activities undertaken by the University faculty members for the half year period from July 2006 to December 2006. 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 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 SOME OF THE RESEARCH PROJECTS RECENTLY APPROVED FOR FUNDING

1. Project No. ICS/INDEX/325

**Principal Investigator: Dr. Wasfi Al-Khatib
Co-Investigator-1: Dr. Sabri A. Mahmoud**

Title: Toward Content-Based Indexing and Retrieval of Arabic Manuscript

Abstract

Arabic and Islamic-related manuscripts represent a rich source of knowledge that has been highly underutilized. Many Islamic manuscripts and scriptures, of great historical values, are still shelved in various national libraries and universities in Saudi Arabia (across the Arab and Muslim worlds). These precious historical artifacts are yet to be typeset and published in book-form. Although there are some Islamic manuscripts which are present in digital form but they are required to be indexed for retrieval purposes. Given vast content of these manuscripts, it is utmost desirable to develop indexing and retrieving system for their utilization. There are various approaches proposed for content based retrievals of images, videos, and audios using low-level, intermediate-level or high-level features. Our main focus in this proposal is to propose a framework of CBIR system for hand written Islamic manuscripts which are stored in the form of document images. Our main concern will be to address the issue of archrival and efficient retrieval of manuscripts based upon the user query. We will formulate a framework addressing this issue. The proposed system will extract the meaningful information and support the indexing mechanism. Some preprocessing will be required to perform on document images such as binarization, noise filtering and segmentation in order to extract relevant features and to develop an efficient indexing system.

Pattern recognition techniques will be developed to enable the user to search the stored images of the manuscripts and the required information in the whole manuscript. The developed technique will apply image matching based on the selected portion of the image. Other techniques will also be developed to extract suitable features for object recognition. These recognition techniques will be used to index the manuscripts and hence enable easy searching of the images of the manuscripts.

2. Project No. MS/VISCO/326

**Principal Investigator: Dr. Nasserdin Tatar
Co-Investigator-1: Dr. Mohammad R.**

Alamia

Title: Stabilization of a Partially Viscoelastic Material

Abstract

When subject to a suddenly applied constant loading state, an elastic material responds with a state of deformation which remains constant and this occurs in an instantaneous manner. In the other hand a Newtonian viscous fluid responds to a suddenly applied state of uniform shear stress by a steady flow process. There are, however, materials for which a suddenly applied and maintained state of uniform stress induces an instantaneous deformation followed by a flow process which may remain limited or continue to grow up

in magnitude as time goes on. Such a material is said to exhibit an instantaneous elasticity effect and creep characteristics at the same time. It is clear then that this behavior cannot be described by either an elasticity or a viscosity theory but combines some features of both.

There are several models and several contributors have studied such materials. we can cite: Maxwell, Kelvin, and Voigt. Boltzmann in 1874 apparently supplied the first formulation of a three-dimensional theory of isotropic viscoelasticity, while Volterra obtained comparable forms for anisotropic solids in 1909. His models of (linear) viscoelastic solid was elaborated on the basis of the following assumptions: at any (fixed) point X of the body, the stress at any time t depends upon the strain at all the preceding times. If the strain at all preceding times is in the same direction, then the effect is to reduce the corresponding stress. The influence of a previous strain on the stress depends on the time elapsed since that strain occurred and is weaker for those strains that occurred long ago. Such properties make the model of solid elaborated by Boltzmann a material with (fading) memory. In addition, Boltzmann made the assumption that a superposition of the influence of previous strains holds, which means that the stress-strain relation is linear. It has been proved then that this memory term is defined by a time convolution of a relaxation function with the Laplacian of the solution. This kind of dissipation turns out to be weaker than the frictional one.

In this proposal we would like to investigate the possibility of stabilizing the wave equation with a viscoelastic damping acting only on a part of the domain and complemented by a damping of fractional order in the other part of the domain. Moreover the interaction of these dissipations with a nonlinear source will be studied. We will try to determine sufficient conditions yielding exponential stability and sufficient conditions assuring blow up in finite time.

3. Project No. EE/LEAST MEAN/327

Principal Investigator: Dr. A. Zerguine (EE)

Co-Investigator-1: Dr. L. Cheded (SE)

Co-Investigator-2: Dr. Asrar Sheikh (EE)

Title: Performance Evaluation of a Soft Decision Based Least Mean Fourth (LMF) Algorithm: Applications to Wireless Communications

Abstract

Adaptive filtering techniques have been successfully implemented in various important applications such as echo cancellation, equalization, noise cancellation, and others. The rapid growth of computer technology made the on line implementation of adaptive filters possible and raised the interest of researchers in the development of new adaptive filtering algorithms for more challenging situations such as strong fading and large signal and noise distortions. In this work, the problem of adaptive equalizers under Non-Gaussian additive noise and interference using non-mean square error adaptive algorithms equipped with soft decision will be investigated. The members of this family will be analyzed and evaluated in multipath wireless communication channels. Ultimately, the most appropriate algorithm will be chosen. Performance evaluation will consider a number of performance measures into account. To name a few, steady-state performance, tracking to time variations due to

the nature of the environment, convergence behavior, and computational complexity are just few of the most important measures of performance.

**4. Project No. CHE/MOVING BED/328 Principal Investigator: Dr. Habib Al-Ali (CHE)
Consultant: Dr. Habib Zughbi**

Title: Investigation of the Hydrodynamics of a Moving Bed Reactor

Abstract

For certain types of chemical reactors where the catalyst decays rapidly but reversibly, continuous operation is possible by use of a Radial Flow Moving Bed Reactor (RFMBR). A Continuous Catalyst Regeneration (CCR) reformer unit is one of the industrial units using the RFMBR. RFMBR can be simply described as a reactor where the catalyst flows downward by gravity and the feed gas flows radially across the reactor and leaves through a center pipe. In this type of reactor there is an upper limit on the gas flow rate imposed by a mechanical phenomenon called "pinning". "Pinning" is when the catalyst particles are pinned against the center pipe due to high gas velocity. Understanding the pinning and the factors influencing it is required for the CCR reformer process engineers before doing any plant optimization. In this work experimental investigations of the hydrodynamics of a moving bed reactor will be carried out. Computational Fluid dynamics (CFD) models will be developed and qualitatively validated against own and/or published data. Results of this work will shed more light on the pinning phenomena in the CCR reformer reactor.

**5. Project No. CHE/POLYMER/329 Principal Investigator: Dr. Sleemur Rahman
Co-Investigator-1: Dr. O.S.B. Al-Amoudi
Co-Investigator-2: Dr. Shamshad Ahmad**

Title: An exploratory study on corrosion protection of reinforcing steel in concrete using conducting polymer

Abstract

The proposed research project of 36 month duration aims at exploring the possibility of using polyaniline, a conducting polymer, in coating of reinforcing steel bars used in concrete structures, as a protective measure against rebar corrosion. Polyaniline, which has been shown in literature to exhibit excellent corrosion protection characteristics, will be used in proposed work as: (a) independent coating, (b) primer with a commercial epoxy paint, (c) pigment with a resin on a commercial primer, and (d) pigment with a resin on polyaniline. These coatings applied on steel bars will be characterized before conducting corrosion study. Corrosion monitoring will be carried out on the coated bar samples when directly exposed to corrosive environment and when embedded in concrete. Before studying the corrosion performance of the coated bars being embedded in concrete under chloride exposure, the bond between coated bars and surrounding concrete will also be

evaluated. The proposed study will conclude with comparison of performances of these combinations of polyaniline and commercially available paint components against corrosion.

6. Project No. MS/SET SAMPLING/330 **Principal Investigator: Dr. Hassen Muttalak (Math)**
Co-Investigator-1: Mr. Marwan Al-Momani
Co-Investigator-2: Mr. Mohammad Saleh

Title: Estimating $P(Y < X)$ Using Ranked Set Sampling in Case of the Exponential Distribution

Abstract

The problem of making statistical inference about $\phi = P(Y < X)$ has been under great investigation in the literature using simple random sampling (SRS) data. This problem arises naturally in the area of reliability for a system with strength X and stress Y . The system fails any time its strength is exceeded by the stress applied to it. In this study we will consider making statistical inference about using ranked set sampling (RSS) data. Several estimators are proposed to estimate using RSS. The properties of these estimators will be investigated and compared with usual estimators based on SRS data. The likelihood ratio test (LRT) for the testing a simple hypothesis against one side alternatives using SRS and RSS data will be considered and compared via their power functions. Finally an application using real data set will be used if we can get hold of some real data set.

7. Project No. SE/Maint. Mgt./331 **Principal Investigator: Dr. Mohammad Ben Daya (SE)**
Co-Investigator-1: Dr. Salih Duffuaa (SE)
Co-Investigator-2: Dr. Abdul Raouf

Title: Maintenance Engineering and Management

Abstract

Technology is ever advancing which makes equipment more sophisticated and heavily capital intensive. It has been realized that effective maintenance enhances customer satisfaction by reducing product cost, increasing product quality, and maintaining the delivery schedule. Maintenance is an effective tool for keeping the companies competitive globally. Currently, there are a few maintenance handbooks available. Some of the handbooks deal exclusively with traditional maintenance techniques suitable for different crafts. The other present a qualitative treatment of maintenance material and some deal exclusively with a narrow area like conditioning monitoring. It is proposed to prepare a handbook which provides comprehensive treatment of the subject including quantitative treatment and management issues. The proposed book intends to cover maintenance related material applicable to large, medium and small size companies engaged in discrete and process type industry. The major aim of this book is to illustrate in example form the application of knowledge in solving real problems. It will present multi-disciplinary state of the art references that define both fundamental and applied works across entire

maintenance area. Its need is greatly felt by maintenance experts in industry as well as academia. Most of the contributors to the book would be practicing maintenance professionals, consultants and academicians of international standing. The proposed handbook is planned to be very comprehensive. Each chapter will cover the entire spectrum of the topic it deals with and includes extensive references to the theoretical foundations, recent research and future directions. The handbook is designed to present an inter-disciplinary perspective through applications and examples that reflect the growing importance of maintenance. This book is designed to be easy to use with a table of contents to facilitate quick reference within it. Each chapter contains clear and easy to understand figures and diagrams.

This book will provide the maintenance professionals and researchers with maintenance solutions on management skills to evaluate maintenance systems at the continuously improve the systems. It will also provide the latest development in the area of maintenance.

8. Project No. EE/Platform/332 **Principal Investigator: Dr. Mohammad Adnan Landolsi (EE)**
Co-Investigator-1: Dr. Wajih Abu-Al-Saud (EE)
Co-Investigator-2: Engr. Ahmad Abul-Hussain

Title: Development of a Software-Defined Radio Platform for Communication System Design

Abstract

Software Defined Radios (SDR) are comprised of programmable hardware platforms that allow flexible and efficient implementation of various signal processing functions typically used in communication modems and radio transceivers. With the ever increasing capabilities of digital signal processors (DSP), field programmable gate arrays (FPGA), and high speed analog-to-digital and digital-to analog converters (ADC & DAC), SDR-based designs are gaining widespread acceptance as an alternative to the more traditional approach (based on "rigid" unflexible architectures), particularly in the area of wireless communications where the multitude of different systems currently in use can be supported on a common programmable SDR platform. In this research proposal, our main objectives are to establish a communication system design platform based on SDR concepts, and to investigate and develop efficient reference designs for some of the most relevant building blocks for SDR architectures, namely a digital channel selection module, or *Digital Channelizer* (DC), and a digital frequency synthesizer module, or *Direct Digital Synthesizer* (DDS). The proposed work encompasses the investigation & selection of suitable platforms, design & development of algorithms and their implementation on the targeted hardware. This proposal gives a general overview of the SDR architecture, followed by a highlight of its major advantages and current challenges. A description of the proposed design approaches for designing and implementing the proposed SDR platform (with its DC and DDS modules) is then presented. Detailed project design steps, including task definition, scheduling, monitoring and evaluation plans, personnel and budget requirements, are also included.

9. Project No. MS/Neumann/333**Principal Investigator: Dr. Abdeslem Lyaghfour (Math)****Title: On the Free Boundary in a Class of Elliptic Free Boundary Problems with Neumann Boundary Condition****Abstract**

We consider a class of elliptic free boundary problems with Neumann boundary conditions including the heterogeneous dam problem with leaky boundary condition. Our objective is to investigate the continuity of the free boundary.

10. Project No. MS/Decay/334 Principal Investigator: Dr. Salim Messaoudi (Math)**Title: General Decay in Viscoelastic Damped Equations****Abstract**

In this project we consider a system which appears in viscoelasticity. Our main goal here is to investigate the effect of the dissipation induced by the viscoelastic (integral) term in the presence and the absence the nonlinear source term. We will seek reasonable conditions under which the system stabilizes to a stationary state and try to obtain a general estimates on the solution energy when the rate of decay in the relaxation function is not necessarily exponential or polynomial.

11. Project No. MS/Theorems/335 Principal Investigator: Dr. Ibrahim Rahimov (Math)**Title: Functional Limit Theorems for Branching Stochastic with Time Dependent Immigration****Abstract**

It is known that asymptotic behavior of a branching stochastic process with immigration is very sensitive to any changes of the immigration process in time. For instance in critical case change of the mean number of immigrating individuals in time leads to such fluctuations of the process, that one needs to use various functional normalizations to obtain non degenerate limit distributions for the process. Therefore, from theoretical point of view, providing of functional limit theorems for step functions constructed on sample paths of the process is difficult but important task. On the other hand this kind limit theorems are extremely useful in study of various functionals of the process and in statistical inference such as estimation of parameters of the process, testing some hypothesis on those parameters and other problems. In this project we obtain functional

limit theorems for discrete time branching process with time dependent- immigration.

12. Project No. CE/Design/336 **Principal Investigator: Dr. M.H. Baluch (CE)**
Co-Investigator-1: Dr. Ali Al-Gadhib (CE)
Co-Investigator-2: Dr. Ahmad S. Al-Gahtani (CE)
Co-Investigator-3: Dr. M. Kalimur Rahman (RI)

Title: Engineering Guidelines for Application and Design of Prestressed Precast Hollow Core Concrete Slabs Strengthened with CFRP Sheets

Abstract

Prestressed precast hollow core slabs are one of the most in vogue flooring systems needed to cover large spans in the Kingdom. Primarily used as floor or roof deck systems, hollow core slabs also have application as wall panels, spandrel members and bridge deck units. Strengthening of these slabs may be required for a variety of reasons. Some of the main factors include increased loading due to planned upgrading of the structure, damage due to non-inclusive seismic loading, corrosion induced damage, installation of heavy machinery, modification of the structural system due to the elimination of walls/columns or opening cut through slabs and errors in planning or construction due to insufficient design dimensions or insufficient reinforcing steel.

This principal objective of this research is to assess the flexural response of hollow core slabs strengthened by CFRP (carbon fiber reinforced plastic) sheets and to develop guidelines for its application in the Kingdom. A combined experimental, mechanistic and non-linear finite element model (FEM) study will be conducted to achieve the stipulated objectives. Full scale flexural load tests will be conducted on fifteen hollow core slabs strengthened with CFRP sheets. One slab will be tested as control. Nine undamaged slabs will be tested after strengthening with different number of layers of CFRP sheets and two types of splice/anchorage configurations. Five slabs will be damaged by flexural loading to preset damage levels and thereafter repaired by CFRP sheets and then loaded to failure under flexure.

Mechanistic and finite element models will also be developed to predict the flexural behavior of the hollow core slab strengthened with various CFRP schemes and calibration of the FEM model to predict experimental results will be made. In the light of results obtained from this research, increased capacity and efficiency of the various CFRP strengthening schemes as applied to precast concrete hollow core slabs will be examined. Guidelines about the design and safe usage of such systems, including the splicing/anchorage, will be developed.

13. Project No. ICS/Optical Test/337 **Principal Investigator: Dr. M. Sarfraz (ICS)**
Co-Investigator: Dr. Sabri Mahmoud (ICS)

Title: Automatic Arabic Optical Test Recognition (AOTR)

Abstract

Considerable progress in the recognition techniques of Latin and Chinese characters has been achieved. By contrast, Arabic Optical Text Recognition (AOTR) is still lagging although the interest and research in this area is becoming more intensive than before. This was a result of large number of graduates in related fields of study and the need for such products is increasing with no products to satisfy the needs. This proposal is addressing this area of research as the investigators believe that there is a considerable need. This proposal introduces the topic of AOTR and highlights the characteristics of Arabic text and the application areas of this research. It also presents an historical review of the Arabic text recognition systems. A model for AOTR is presented with five stages of an AOTR system. We devoted a section to each of the stages of this model: pre-processing, segmentation, feature extraction, classification, and post-processing. Each stage discussed main used techniques and the state of the art of research work related to each stage.

The investigators then report on samples of their contribution in AOTR. Some of their previously developed techniques are presented with emphasis on statistical and structural (syntactical) methods.

The proposal then states the work to be addressed in this project in general terms and specifies some of the merits of this proposed work. The investigators are going to develop an AOTR system that uses hybrid classification where more than one classifier is used (Syntactical, Statistical, and Neural network). They believe that there is a need for such system to boost the recognition rate. Hence, different types of features will be used. In addition, the researchers will delay the segmentation stage, which is error prone, so that it follows the recognition stage.

14. Project No. CIM/Customer/338

Principal Investigator: Dr. Alhassan Abdul -Muhmin (Mgt & Mkt)

Co-Investigator: Mr. Irfran Ilyas (Acct & MIS)

Title: Awareness, Adoption and Maturity Level of Customer Relationship Management (CRM) Practices in Saudi Companies

Abstract

Customer Relationship Management (CRM) is a key construct in modern marketing that is based on the premise of shifting the emphasis of marketing from short-term, transactional exchanges to long-term collaborative partnerships with key customers. Both in academic and practitioner circles, the current received wisdom is that effective CRM implementation can lead to desirable business outcomes like customer satisfaction, loyalty, retention, and company profitability. Accordingly, in practitioner circles CRM implementation is on the rise as organizations seek ways of capturing these important outcomes.

In academic circles too, research interest in CRM is also currently quite substantial and growing. Yet a review of the literature reveals virtually no published studies on the status of CRM implementation in Saudi organizations. This proposed study seeks to fill this dearth in the literature by examining the level of awareness, understanding, and adoption

of CRM systems among companies in Saudi Arabia. The study will adapt the CRM process implementation index proposed by Reinartz et al. [Reinartz, Werner, Manfred Krafft and Wayne D. Hoyer, "The Customer Relationship Management Process: Its Measurement and Impact on Performance", *Journal of Marketing Research*, Vol. 41(3), 2004; pp. 293-305] as a foundation for ascertaining differences in CRM maturity among Saudi companies. It will be conducted through a structured self-administered survey using a random sample drawn from the top 1000 companies in the Kingdom.

15. Project No. CIM/Saudization/339

Principal Investigator: Dr. Muhammad A. Sadi Mgt & Mkt)

Co-Investigator: Dr. Mohammad Al-Bureay (Mgt & Mkt)

Title: An Examination of Saudization Policy in the Service Sector: The Replacement of Foreign Workers with Locals in Saudi Arabia

Abstract

The Kingdom of Saudi Arabia, like several other countries in the Arabian Gulf region, is seeking to reduce its dependence on oil and promote a new economic order which will be characterized by greater diversity. One important element of the policy, at a time of rising unemployment, is that of maximizing job opportunities for locals and reducing the size of the expatriate workforce by installing Saudi nationals in public and private sector posts previously held by foreign workers. This job localization program has been termed the Saudization policy and the government is vigorously pursuing ambitious targets with a view to realizing the perceived benefits of the process for individuals, organizations and society. The background to the Saudization initiative and its features are examined in this study which focuses on implications for the Kingdom's service sector, identified by the government as a growth area of the future.

This study will employ a methodology in which a survey questionnaire will be administered. The survey questionnaire will be distributed to a sample of respondents in the sector of Eastern Province. The study will also employ secondary information obtained from published research, service sector experts and the authors' own observations. It is hoped that findings from this study will provide valuable insights into the efficacy of the Saudization policy and have important implications for the service sector in the Eastern Province.

16. Project No. EE/Wristband/340

Principal Investigator: Dr. Mohamed Mohandes (EE)

Co-Investigator-1: Dr. Maan Kousa (EE)

Co-Investigator-2: Dr. Saad Al-Shahrani (EE)

Co-Investigator-3: Mr. A. Abul Hussain (EE)

Title: RFID Wristband Tag for Pilgrims Identification

Abstract

In this project we propose to develop a prototype of a system that uses an RFID wristband for identification of pilgrims in the holy cities of Makkah and Medina. The wristband tag will have all information related to the holding pilgrim stored on the RFID chip. Stored information may include, name, age, nationality, medical conditions, photo, mutawif contacts and other formal details. This way if a pilgrim gets sick, lost, or dies he/she can be easily identified through the tag on the spot. Officers around the holy area will have a light handheld reader that can get all information from the tag itself without the need to burden the already overloaded communication network during the Hajj season. The tag will remove the language barrier as all needed information is stored. The developed prototype will be tested on a large group of people to show its viability to Hajj authorities in the hope of utilizing the technology on all pilgrims in future seasons. The prototype should be completed within 10 months from inception.

17. Project No. CHE/Binary/341 Principal Investigator: Dr. Javaid S.M. Zaidi (Che)
Co-Investigator-1: Dr. Ibnelwaleed Hussein (Che)
Co-Investigator-2: Dr. Usamah Mubaiyedh (Che)

Title: Separation of Binary Organics Mixtures Using Novel Composite Polymeric Membranes by Pervaporation

Abstract

The purpose of this proposal is to investigate the feasibility of applying pervaporation technology in the area of organic liquid mixture separation. Pervaporation is considered to be a promising alternative to conventional energy intensive technologies like extractive or azeotropic distillation in liquid mixtures separation for being economical, safe and eco-friendly. Pervaporation can be considered as a clean technology. Several organic–organic mixtures such as methanol/MTBE, methanol/toluene, benzene/toluene and benzene/cyclohexane, which are typically encountered in petrochemical industry, will be studied. The effects of operating parameters on the performance of new polymeric membranes will be analyzed. These parameters include feed concentration and temperature, and permeate pressure. In addition, long–term performance of the membranes will be studied in terms of chemical, mechanical and thermal properties. Optimization of the pervaporation separation performance with respect to the operating parameters for each separation type, and accordingly proper membrane modifications will be done to enhance their separation performance. Mathematical modeling of the pervaporation separation performance in terms of the temperature and composition of the mixtures and physico–chemical properties of mixtures will be carried out.

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		
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-FLOW/262)
Chemical Engineering	Dr. Muhammad Al-Arfaj Dr. Hussain Al-Duwaish (EE)	Development and Application of State Estimators in Control of Reactive Distillation (CHE/DISTILLATION/272)
Chemical Engineering	Dr. Nadhir Al-Baghli	Photoxidation of MTBE in the Presence of Hydrogen Peroxide (CHE/MTBE/275)
Chemical Engineering	Dr. Basel Abu Sharkh Dr. Shaikh Asrof Ali (Chem) Dr. Ibnelwaleed Hussain Dr. Hasan Al-Mualem (Chem)	Influence of Hydrophobe Architecture on Self-Assembly, Rheology, and Interfacial Properties of Amphiphilic oleyelectrolyte, Polyampholyte and Neutral Co-Polymers. (CHE/ COPOLYMERS/292)
Chemical Engineering	Dr. S.M. Javaid Zaidi Dr. Sleem ur Rahman Dr. Ibnelwaleed Hussain	Development of Highly Conductive Composite Membranes for Medium Temperature PEM Fuel Cell (CHE/PEM FUEL CELL/294)
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. Sulaiman Al-Khattaf Mr. Nasiru Tukur (Che)	Novel process for Methanol Alkylation of Tulene to Produce Xylene

(CHE/ALKYLATION/ 317)

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
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)

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
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)
Chemical Engineering	Dr. Javaid Z.M. Zaidi (Che) Dr. Ibnelwaleed Hussain (Che) Dr. Usamah Mubaiyedh (Che)	Separation of Binary Organics Mixtures Using Novel Composite Polymeric Membranes by Pervaporation (CHE/Binary/341)
Civil Engineering	Dr. M.H. Baluch Dr. Ali Al-Gadhib	Influence of Environmental Variables and Mix Design on Moisture Transport in Concrete (CE/MIX.DESIGN/267)
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. Blauch 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)

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Electrical Engineering	Dr. Ahmad Yamani Dr. Mohammed Deriche	Extraction of Optimal Features from Ultrasonic NDT Signals Using Time-Frequency and Time-Scale Distributions (EE/ULTRASONIC/318)
Electrical Engineering	Dr. A. Zerguine Dr. L. Cheded Dr. Asrar Sheikh	Performance Evaluation of a Soft Decision Based Least Mean Fourth (LMF) Algorithm: Applications to Wireless Communications (EE/LEAST-MEAN/327)
Electrical Engineering	Dr. Husain Masoudi (EE)	Broad-Band Time-Domain Beam Propagation Method (Sabbatical leave proposal) (EE/TIME DOMAIN/315)
Electrical Engineering	Dr. Husain Al-Zaher (EE) Mr. Mohd. K. Al-Ghamdi Mr. Noman Tassaduq	CMOS LOWPASS Filters for Dual Bluetooth/WLAN Direct-Conversion Receiver (EE/LOW-PASS/324)
Electrical Engineering	Dr. Mohammad Adnan 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. M. Mohandes (EE) Dr. Maan Kousa (EE) Dr. S. Al-Shahrani (EE) Mr. A. Abul Hussain (EE)	RFID Wristband Tag for Pilgrims Identification (EE/Wristband/340)
Mechanical Engineering	Dr. Hassan M. Badr Dr. M.A. Habib Dr. S.A.M. Said Dr. R. Ben Mansour	Turbulent Natural Convec-tion Flow in Parallel and Con-verging-Plate Vertical Channels (ME/TURBULENT/246)
Mechanical Engineering	Dr. Zaki Ahmad (ME)	Principles of Corrosion Engineering and Corrosion Control (Book-writing Project) (ME/COR. ENG. /258)
Mechanical Engineering	Dr. Mohammad Antar Dr. Maged El-Shaarawi	Entropy Generation Around a Solid/Liquid Sphere in a Gas

Stream (ME/ENTROPY/261)		
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Mechanical Engineering	Dr. Zaki Ahmad Dr. Maysser Al-Haddad Mr. B.J. Abdul-Aleem	Exploring the Corrosion Behavior of New Generation Scandium Reinforced Aluminum Alloys for Service Performance (ME/ALLOYS/288)
Mechanical Engineering	Dr. Mohammad Antar	Accurate Estimation of Heat Leak Through Hollow Building Blocks (ME/HOLLOW/323)
College of Comp. Sci. & Engg. Information & Computer Science	Dr. Khaled Salah Mr. Khalid El-Badawi	A Methodology for Successful Voice over IP Deployment (ICS/VOICE/304)
Information & Computer Science	Dr. M. Sarfraz	Interactive Curve Design with Applications in Computer Graphics, vision and Image Processing (ICS/GRAPHICS/306)
Information & Computer Science	Dr. M. Sarfraz	Reverse Engineering for Geometric Models Using Evolutionary Heuristics (ICS/REVERSE ENG/312)
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. M. Sarfraz Dr. Sabri A. Mahmoud	Toward Content-Based Indexing and Retrieval of Arabic Manuscript (ICS/Optical Test/337)
Computer Engineering Department	Dr. Mohammad Sadiq Sait Dr. A.S. Abdul Waheed Mr. Mahmoud R. Minhas	Parallel Iterative Heuristics for Performance-Driven Low-Power VLSI Standard Cell Placement

(COE/CELL.PLACE/263)

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Computer Engineering Department	Dr. Mohammad Elrabaa	Development of Digital Circuit Techniques for Clock Recovery and Data Re-Timing for High Speed Non-Return-to-Zero Source-Synchronous Serial Data Communications (COE/DIGITAL/287)
Systems Engineering	Dr. Umar Al-Turki Dr. Shokri Z. Selim Dr. Abdulbasit Andijani	On Stochastic Single Mac-hine Early-Tardy Scheduling SE/SCHEDULE/191
Systems Engineering	Dr Mohammad Ben Daya Dr. Mohammad Darwish Dr. Kadir Ertogral	Integrated Manufacturer-Retailer Supply Chain Models (SE/CHAIN.MODEL/265)
Systems Engineering	Dr. Malick Ndiaye Dr. Shaik Arifusalam (SE)	Integrating Retailing Location Models with GIS in Siting Support System (SE/RETAIL/279)
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)
College of Industrial	Dr. Haider Madani	Corporate Disclosure and

Management
Accounting & MIS

Reporting Practices in the Gulf
Cooperative Council Countries:
A Cross-National Comparative
Investigation
(CIM/DISCLOSE/248)

**College /
Department**

**Principal Investigator /
Co-Investigator(s)**

**Title of the Project
and its Code**

Accounting & MIS

Dr. Ahmad Abu Musa
Dr. Jasem Al-Rumaihi
Dr. Mohammad Al-Khaldi

Evaluating the Security
Controls of Computerized
Accounting Information
Systems in Saudi Arabian
Banks (CIM/SECURITY/303)

Department
& Management
Marketing

of **Dr. Alhassan**
& **Abdulmuhmin**
Mr. Irfran Ilyas (Mgt &
Mkt)

Awareness, Adoption and
Maturity Level of Customer
Relationship Management
(CRM) Practices in Saudi
Companies
(CIM/Customer/338)

College of Sciences
Chemistry

Dr. Anvarhusain Isab
Dr. M.I.M. Wazeer

Multinuclear NMR Study of
the Interactions of some Sulfur
Containing Biologically
Important Ligands with CD^{2+}
and Hg^{2+} Ions
(CY/NMR STUDY/277)

Chemistry

Dr. Bassam El Ali
Dr. Basel Abu Sharkh (Che)
Dr. Mohammad Morsy
Dr. Mohammad Fettouhi

Regioselective Catalytic
Hydrocarboxylation of
Alkynes by Palladium
Complexes. Effects of the type
of Ligands and Additives.
Computational Study of the
Mechanisms of Reaction
(CY/PALLADIUM/295)

Chemistry

Dr. Hassan M. Badawi
Dr. Wolfgang Forner

Potential Surfaces and
Vibrational Analysis of Some
Halo Propanols
(CY/PROPONELS/297)

Chemistry

Dr. M. Fettouhi (Chem)
Dr. Bassam El Ali (Chem)
Dr. Khalil Ziq (Phys)

New Group 10 Metal
Complexes Based on Chelate
Ligands Bearing Nitroxide
Radicals. Magnetic Properties
and Catalytic Performance in
Oxidation Reactions of
Alcohols (CY/METAL/301)

Chemistry	Dr. Hasan Badawi (Chem) Dr. Abdulaziz Alsuwaiyan (Chem) Dr. Wolfgang Forner (Chem)	Analysis of Vibrational Spectra and Ring-Puckering of Some Heterocyclic Compounds CY/ROTATION/309)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Earth Sciences	Dr. Mohammad Makkawi	Groundwater Resources and Environmental Management: Industrial Experience in Modeling Groundwater Aquifers (ES/GROUND-WATER/290)
Earth Sciences	Dr. Mahbub Husain (Release Time Proposal)	Application of Trace and Rare Earth Elements (REE) in Tectonic Interpretations of the Exposed Cretaceous Wasia Formation in Al-Kharj and Riyadh Area (ES/RARE EARTH/308)
Mathematical Sciences	Dr. Abdulwahab Kharab (Bookwriting Project)	An Introduction to Numerical Methods: A Matlab Approach (2 nd edition of the existing book) (MS/MATLAB-2/293)
Mathematical Sciences	Dr. Faisal Fairag	Theoretical and Computational Aspects of the Stream Function Form of a Ladyzhenskaya Model for Incompressible Viscous Flow (MS/STREAM FUNC-TION/278)
Mathematical Sciences	Dr. Selim Messaoudi	On Some Singular Visco-elastic Problems (MS/VISCOELASTIC/298)
Mathematical Sciences	Dr. Mohammad El-Gebeily Dr. Khaled Furati Dr. Hattan Tawfiq	Approximating Singular ODEs by Nearby Regular Ones: Theoretical and Computational Issues (MS/SINGULAR ODE/274)
Mathematical Sciences	Dr. Jawad Abuilhail	Primeness and Coprimeness Conditions for Comodules and

		Corings (MS/ CORINGS/296)
Mathematical Sciences	Dr. Abul Hasan Siddiqi	Wavelet and Fractal Methods for the Analysis of Meteorological Data of Saudi Arabia (MS/FRACTAL/310)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Mathematical Sciences	Dr. Mohammad Samman	Some Development in Near-Ring Theory (Sabbatical leave proposal) (MS/NEAR-RING/314)
Mathematical Sciences	Dr. Naser-Eddine Tatar Dr. Mohammad R. Alamia	Stabilization of a Partially Viscoelastic Material (MS/VISCO/326)
Mathematical Sciences	Dr. Hassan Muttalak (Math) Mr. Marwan Al-Momani Mr. Mohammad Saleh	Estimating $P(Y < X)$ Using Ranked Set Sampling in Case of the Exponential Distribution (MS/Set-Sampling/330)
Mathematical Sciences	Dr. Abdeslem Lyaghfour (Math)	On the Continuity of the Free Boundary in a Class of Elliptic Free Boundary Problems with Neumann Boundary Condition (MS/Neumann/333)
Mathematical Sciences	Dr. Salim Messaoudi (Math)	General Decay in Viscoelastic Damped Equations (MS/Decay/334)
Mathematical Sciences	Dr. Ibrahim Rahimov (Math)	Functional Limit Theorems for Branching Stochastic processes with Time-Dependent Immigration (MS/Theorems/335)
Physics	Dr. S.M. Al-Amoudi Dr. H. Bahlouli	Real-Time Dynamics of Bose-Einstein Condensates (PH/BOSE/241)
Physics	Dr. Abdullah Alsunaidi (Phys) Dr. Basel Abu Sharkh (Che)	Self-Assembly in Confined Semiflexible Copolymers (PH/COPOLYMERS/268)

Physics	Dr. Abdullah Alsunaidi Dr. H. Bahlouli	Mesoscale Simulation of the Response of Liquid Crystal Molecules to External Aligning Fields (PH/LIQUID/283)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Physics	Dr. Mohammad Al-Kuhaili Dr. S.M.A. Durrani Dr. E.E. Khawaja (Consultant)	Development of a New Method for Determining the Optical Constants (n and k) of Thin Inhomogeneous Films (PH/OPTICAL/286)
Physics	Dr. M.I. Al-Jarallah	Radon Gas and Radiation Dangers (Sabbatical leave to write a book) (PH/RADON GAS/315)
Physics	Dr. Nouar Tabet Dr. A. Mekki Dr. K. Mezghani (Mech Engg.)	DC-Magnetron Sputtering Synthesis and Characterization of the Physical Properties of Zinc Oxide Thin Films (PH/DC-MAGNETRON/299)
Physics	Dr. A.A. Naqvi (Phys) Dr.M.M. Nagadi (Phys) Dr. Omar Al-Amoudi (CE) Dr. M. Maslehuddin (RI)	Measurement of Chloride Concentration in Silica Fume and Fly Ash Cement Concretes Using PGNAA Technique (PH/FLY ASH/305)
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)
Construction Engineering & Management Dept.	Dr. Mohammad Al-Khalil	The Value Engineering Experience at Saudi Aramco (CEM/VALUE ENG/276)
College of Industrial Management Department of Management & Marketing	Dr. Mohammad Bureay	Islamic Management and Administration (CIM/ISLAMIC MGT/289)

Department of
Management &
Marketing

Dr. Muhammad A. Sadi
Dr. Mohammad Al-Bureay

An Examination of Saudization
Policy in the Service Sector:
The Replacement of Foreign
Workers with Locals in Saudi
Arabia (**CIM/Saudization/339**)

4. RESEARCH PROPOSALS UNDER REVIEW

#	Name of Faculty & Department	Title of Research Proposal
1.	Dr. Esmail Mokheimer Dr. Tarek Abdel-Galil Dr. Faleh Al-Sulaiman (ME)	Techno-Economic Feasibility Study for Implementing Efficient Air Conditioning Technologies for Local Manufacturers of small Central Air Conditioners
2.	Dr. S.M.A. Durrani (Phys) Dr. M.F. Al-Kuhaili (Phys) Dr. A.A. Jabbar (Phys)	Cerium Oxide Tin Film Gas Sensor for Monitoring of Carbon Monoxide
3.	Dr. Mohammed A. Al-Daous (Chem)	Growth of Uniform Zeolite Layers on 3D Ordered Macroporous Anion Modified Zirconia: Synthesis, Characterization, and Catalytic Evaluation
4.	Dr. Ibnelwaleed A. Hussein, Dr. Basel F. Abu Sharkh, Dr. Muhammad Al-Arfaj, Dr. João B.P. Soares, Professor of Chemical Eng., University of Waterloo, Canada, Consultant	Synthesis; Solution, Melt, and Solid-State Properties; and Modeling of Metallocene Polyolefins with Controlled Long Chain Branching
5.	Dr. Zain Yamani (Phys) Dr. M.A. Gondal (Phys) Mr. Talib Husain (Phys)	Laser Induced Breakdown Spectrometer for Trace Element Analysis.
6.	Dr. G.D. Khattak (Phys) Dr. A. Mekki (Phys)	Direct Current (DC) Conductivity Studies of Strontium-Borate Vanadate Glasses.
7.	Dr. Ahmed Z. Algarni Dr. Ayman H. Kassem (Aerospace Engg.)	A Toolbox for Remote-Sensing-Satellite Mission-Analysis and Design
8.	Dr. Tareaq Y. Al-Naffouri (EE) Consultant: Dr. Babak Hassibi (External)	The Effect of Spatial Correlation on the Capacity of Multi-Input Multi-Output Broadcast Channels with Partial Side Information
9.	Dr. Hamoud Ahmed Dehwah (Math) Dr. Mohd. Maslehuddin (RI) Dr. Omar B. Al-Amoudi (CE)	Optimization of Mix Design and Durability of Self-Compacted Concrete
10.	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
11.	Dr. Abdullah Alsunaidi (Phys) Dr. H. Bahlouli (Phys)	Dynamics and Morphology of Phase Separating Liquid-Crystal/Polymer Blends
12.	Dr. Amro Al-Qutub (ME) Dr. Ibrahim Allam (ME) Mr. M. Abdul Samad (ME)	A Study on the Dry Sliding Wear of 6061 Al/Al ₂ O ₃ Particulate Reinforced Aluminum Alloys Against Automobile Brake Materials

13.	Dr. Muhammad A. Sadi (Mgt) Dr. Salem M. Al-Ghamdi (Mgt)	Franchising in Saudi Arabia: A Study of the Small-Medium Enterprise Context
-----	--	---

2006-2007

#	Name of Faculty	Department	Title of the Research Proposal
IP-2007-01	Dr. Amro Al-Qutub Mr. M. Abdul-Samad	Mechanical Engg.	Development of Further Capabilities for the ME High Temperature Tribometer Budget: SR. 36,500 Duration: 12 months
IP-2007-02	Dr. Said Berrimi, Instructor	Dammam Community College	Study of Decay in Some Thermoelastic Systems Duration: 12 months Budget: SR. 36,400
IP-2007-03	Dr. Imad Jabir, Asst. Prof.,	Finance & Economics	Preparation for the End of the Fossil Fuel Era Duration: 12 months Budget: SR. 15,000
IP-2007-04	Dr. Imad Jabir, Asst. Prof., and Mr. Lurion Demello, Lecturer.,	Finance & Economics	Asymmetric Adjustment Towards Long-Run Equilibrium of the U.S. GDP and Energy Consumption Duration: 12 months Budget: SR. 33,400
IP-2007-05	Dr. Khaled Salah, Assoc. Prof., and Dr. Mohammad Sqalli, Asst. Prof.	ICS Dept. ICS Dept.	Intelligent Firewall DoS Attacks and Countermeasures Duration: 42 months Budget: SR. 291,700
IP-2007-06	Dr. Khaled Salah, Assoc. Prof..	ICS Dept.	Improving the Performance of Linux Networking Subsystem Duration: 24 months Budget: SR. 265,700
IP-2007-07	Dr. Amjad Khalil and Dr. Abdulhafez Selim	Physics Physics	Isolation and Characterization of Thermostable Enzymes (Amylases, Lipases and Glucosidases) from Thermophilic Bacteria Isolated from Desert Sand and Hot Spring in Saudi Arabia for Industrial Applications Budget: SR. 65,400 Duration: 18 months
IP-2007-08	Dr. Khalil Ziq Dr. A. Ghannam Dr. A.F. Salem	Physics Physics Physics	Magnetic Properties of ZnO-TM Semiconductor Duration: 18 months Budget: SR. 66,000

IP-2007-09	Dr. A. Aksoy, Mr. Mohammad Raashid	Physics Physics	Enhancement of Technical Capability of the 14 MeV FNAA Facility at KFUPM Duration: 24 months Budget: SR. 75,000
IP-2007-10	Dr. Mohammad E. Elrabaa, and Dr. Abdelhafid Bouhraoua	Computer Engg. Computer Engg.	Developing a Network-on-Chip for Field Programmable Gate Arrays Duration: 24 months Budget: SR. 168,600
IP-2007-11	Dr. Tarek Sheltami Dr. Ashraf Mahmoud Dr. Emad El-Sebakhy	ICS Dept. ICS Dept. ICs Dept.	Maximizing the number of Hops in Video Streaming over Mobile Ad Hoc Networks using Artificial Intelligence Duration: 28 months Budget: SR. 151,000
IP-2007-12	Dr. Tareq Y. Al-Naffouri,	Electrical Engg.	Broadcasting Data to Multiple User Groups: Information Theoretic Investigation of the wide Band Case Duration: 12 months Budget: SR. 51,200
IP-2007-13	Dr. Sadiq Sohail	Management & Marketing	IT Outsourcing in Saudi Arabia: Perspectives from Employees Duration: 12 months Budget: SR. 54,300
IP-2007-14	Dr. A.H. Bokhari and Dr. F.D. Zaman	Mathematical Sciences Mathematical Sciences	Lie Symmetry Methods, Nonlinear PDES & Application Duration: 24 months Budget: SR. 85,800
IP-2007-15	Dr. Abdullahi Umar	Mathematical Sciences	Semigroup of Order Decreasing Transformations on Posets Duration: 18 months Budget: SR. 42,600
IP-2007-16	Dr. T.M. Mustafa Dr. H. Azad	Mathematical Sciences Math. Sci	Symmetry Analysis of Some Nonlinear Klein-Gordon Equations on Sphere Duration: 20 months Budget: SR. 76,500
IP-2007-17	Dr. Kassem Mustapha	Mathematical Sciences	An Alternative Direction Implicit Quadrature Petrov-Galerkin Method for Solving a Class of Time-Dependent problem Duration: 12 months Budget: SR. 39,900
IP-2007-18	Dr. Mohammad El-Gebeily Engr. Shafiqur Rahman	Mathematical Sciences Res. Institute	Wavelet and Fractal Methods for the Analysis of Meteorological Data of Saudi Arabia: Phase 2 (Extension of INT/310) Duration: 12 months Budget: SR. 125,000
IP-	Dr. Jauwad	Mathematical	The Structure of Tilting Modules

2007-19	Abuhlail	Sciences	Commutative Rings Duration: 24 months Budget: SR. 88,000
IP-2007-20	Dr. Farag Azzedin	ICS Dept.	Reputation Assessment process in Peer-to-Peer Systems Duration: 36 months Budget: SR. 117,000
IP-2007-21	Dr. M.A. Chaudhry Dr. Asghar Qadir	Math. Sciences Math. Sciences	Extension of Ramanujan's Interpolation Formula and Applications of His Master Theorem (Project & Release time) Duration: 30 months Budget: SR. 122,000
IP-2007-22	Dr. Hanafy Omar Dr. Mohd. Abido	Aerospace Eng. Electrical Eng.	Optimal Design of Fuzzy-Based Guidance Law for Homing Noisy Measurements Using Multi-objectives Evolutionary Algorithms Duration: 18 months Budget: SR. 73,800
IP-2007-23	Dr. Q.H. Ansari Dr. Soliman Alhomidan	Mathematical Sciences Mathematical Sciences	Multiobjective Optimization and Vector Variational Inequalities Duration: 12 months Budget: SR. 67,300
IP-2007-24	Dr. A.R. Khan, Dr. Soliman Alhomidan Dr. Q.H. Ansari Mr. Shamsuddin Khan	Mathematical Sciences Dept.	Iterative Methods for Solving Variational Inequalities with Applications Duration: 18 months Budget: SR. 108,700
IP-2007-25	Dr. Mustafa Eid Dr. Salem Alghamdi Dr. Al-Ahmadi Mr. Irfan Ahmad Ilyas Mr. Mubashir Hussain	Accounting & MIS Mgt. & Mkt. Acct & MIS Acct & MIS Acct & MIS	A Conceptual IT-Based Model for Collaborative Research Duration: 20 months Budget: SR. 117,100

PROPOSALS SUBMITTED UNDER JUNIOR FACULTY RESEARCH GRANTS
DURING THE ACADEMIC YEAR 2006-2007

#	Name of Faculty	Department	Title of the Research Proposal
1.	Dr. Salem A.S. Al-Dini, Dr. Bekir S. Yilbas, (Consultant) (JFRP-2007-01)	Mechanical Engg. Mechanical Engg.	Formulation of Entropy Generation in Micro-Channel Flow: Flow Between Micro-Channel Formed by Parallel Plates: A Case study. Duration 11 months Budget: SR. 50,000
2.	Dr. Abdulrahman M. Jarad (JFRP-2007-02)	Earth Sciences Department	Univariate and Bivariate Statistical Analyses of the P_2O_5 , Al_2O_3 , MgO , SiO_2 , Fe_2O_3 and U_3O_8 in the Thanyat Turayf Phosphorite Deposits, Sirhan-Turayf Sub-basin, NW Saudi Arabia Duration: 11 months Budget: SR. 45,200
3.	Dr. Samir Al-Ghadiban (JFRP-2007-03)	Electrical Engg.	Uplink MIMO Scheduling Design and Evaluation for V-Blast Users Duration: 11 months. Budget: 38,500
4.	Dr. Ebrahim Malalla, Asst. Prof. (JFRP-2007-04) Dr. Naser Darwish (Consultant)	ICS Dept.	Open Addressing Hashing Schemes with Constant Worse-Case Search Time Duration: 11 months. Budget: 50,000
5.	Dr. Mohammad Yousef Dr. F.D. Zaman (Consultant)	Math Dept.	PDE Approach for Valuation of Complex Derivative Securities under Stochastic Volatility Duration: 11 months Budget: SR. 38,000
6.	Dr. J.H. Mutawa Dr. B. Chanane (Consultant)	Math Dept.	Identification of Nonlinear State Space Model with Observation Outliners Based on Leave-K-Out Diagnostics Duration: 12 months Budget: SR. 43,500
7.	Dr. Mohammad Eleiche Dr. K. Faisal (Consultant)	ICS Dept.	Metrics-based Identification and Characterization of Change Prone Packages in Object-Oriented Designs Duration: 11 months Budget: SR. 45,000
8.	Dr. Lahouri Ghouti Dr. A. Zerguine (Consultant)	ICS Dept. EE Dept.	Fingerprint Images: A powerful Tool for Biometric Authentication
9.	Dr. Khalid Al-Ramadan Dr. Muhittin Senalp (Consultant, Sadi Aramco)	Earth Sciences	Unravelling the Diagenetic Alterations and Related Reservoir Quality Evolution Along Sequence Boundaries of the Siliciclastic Deposits Duration: 12 months Budget SR: 50,000

5. BOOK-WRITING PROPOSALS SUBMITTED FOR FUNDING
WHICH ARE UNDER REVIEW

#	Name of Faculty	Department	Title of the Research Proposal
1	Dr. Smail Bezzazi, ELC Director,	Hail Community College	Reading Brainwaves 2 ISBN # 9960-9815-0-9
2.	Dr. Ahmed Sedky Budget: SR. 42,000, including SR. 20,000 as copyright fee to be paid to the publishers for 100 copies). Duration: 13 months.	Architecture Dept.	An Introduction to Area Conservation in the Arabic-Islamic City Publishers: Intellect Book Publishers, PO Box 862, Bristol BS99 1DE, UK (email: Masoud@intellectbooks.co.uk)

6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2007/2008

#	Name of Faculty	Department	Title of the Research Proposal
1	Dr. Habib Al-Ali	Chemical Engineering	Title: Cost Effective and Optimum Strategies for Emission Reduction in Refineries Host Institute: University of Waterloo, Waterloo, Canada. Sabbatical year: 2007-08
2.	Dr. Abdulwahab A. Abokhodair	Earth Sciences	Title: Numerical Tools for Geoscience Computations Host Institute: Department of Geology, UAE University, UAE Sabbatical year: 2007-2008 Budget: SR. 33,500
3.	Dr. Abdulaziz Al-Shuaibi	Mathematical Sciences Dept.	Title: Regularization and the Inverse Laplace Transform Host Institute: University of West Georgia, USA. Sabbatical year: 2007-08 Budget: SR.

**7. SABIC AND FAST TRACK PROPOSALS RECEIVED DURING
NOVEMBER 2006 FOR FUNDING**

S. No.	Name of Faculty	Department	Title of the Proposal
SF-2007-01	Dr. M.A. Gondal Dr. Abdulrahman Al-Arfaj Dr. Z.H. Yamani	Physics Chemistry Physics	Laser-Induced Photo-Catalytic Degradation of Phenol Using Different Semiconductor Catalysts
SF-2007-02	Dr. Bekir Sami Yilbas Dr. Shahzada Z. Shuja Dr. Shafiq M. A. Khan Mr. Abdul Aleem, B.J.	Mech. Engg. Mech. Engg. Mech. Engg. Mech. Engg.	Surface Improvement of Cemented Carbide Cutting Tool: Method of Laser Treatment
SF-2007-03	Dr. Abul Fazal M. Arif Dr. Anwar K. Sheikh	Mech. Engg. Mech. Engg.	Effect of Billet Quality on the Hot Extrusion Die Life
SF-2007-04	Dr. Abul Fazal M. Arif Dr. Bekir Sami Yilbas	Mech. Engg. Mech. Engg.	Numerical and Experimental Investigation of Thermal Stress Development During Laser Cutting of Sheet Metal
SF-2007-05	Dr. Iyad Al-Zaharnah Dr. Saif Al-Kaabi Dr. Bekir Sami Yilbas	Mech. Engg. Mech. Engg. Mech. Engg.	Flexural Behavior of a Cantilever Plate During the Welding Process
SF-2007-06	Dr. A. Mimouni	Math. Sciences	Ratliff-Rush Closures of Ideals in Integral Domains
SF-2007-07	Dr. Salim Messaoudi and two others from outside the University.	Math. Sciences	Uniform Stabilization in Systems of Non-Classical Thermo-elasticity
SF-2007-08	Dr. Ali Hussein Muqaibel Mr. Omar Johar	Electrical Engg. Electrical Engg.	Directional UWB Channel Characterization
SF-2007-09	Dr. Mohammad Nahid Siddiqui	Chemistry	Investigating the Reactivity Behavior of Arabian Asphaltenes
SF-2007-10	Dr. Jaafar H. Al-Mutawa Dr. Fouad Al-Sunni	Math. Sciences Systems Engg.	Identification of Errors in Variables Model with Observation Outliers
SF-2007-11	Dr. Husain A. Al-Jamid Mr. Mohd. Zaheed Khan	Electrical Engg. HFCC College	Analysis of Full-Vectorial Three Dimensional Optical Waveguides with Multiple Longitudinal Discontinuities Using Pade Approximants
SF-2007-12	Dr. Ashraf Elazouni Dr. Mohammad Abido	CEM Dept. Electrical Engg.	Finance-based Scheduling of Multiple Simultaneous Construction Projects

SF-2007-13	Dr. Maatouk Khoukhi	Architectural Engg.	The Use of Desiccant Cooling System Coupled to Solar Collector in the Kingdom of Saudi Arabia: Feasibility Study
SF-2007-14	Dr. H.E. Emara-Shabaik Dr. M.A. Habib	Systems Engg. Mech. Engg.	Dynamics of Drum Boiler with Non-Uniform Heat Flux Distribution
SF-2007-15	Dr. Ahmad Z. Al-Garni Dr. Farooq Saeed	Aerospace Eng Aerospace Eng.	Aerodynamic Performance and Directional (Yaw) Stability Analysis of Delta and Double-Delta Wing Configurations
SF-2007-16	Dr. Farooq Saeed Dr. Ahmad Z. Al-Garni Mr. Ahmad Jamal	Aerospace Eng. Aerospace Eng. Aerospace Eng.	Numerical Modeling and Investigation of Novel Design Arrangements for Improving Surface Heat Transfer From an Aircraft Hot air Anti-Icing System
SF-2007-17	Dr. Abdul-wahid A. Saif Dr. Moustafa El-Shafei Dr. M.A. Habib	Systems Engg. Systems Engg. Mech. Engg.	Estimation of Quality of Reduction Iron in Direct Reduction Furnaces
SF-2007-18	Dr. Mazen Khaled Dr. Bekir Sami Yilbas Dr. Omar Al-Amoudi	Chemistry Mech. Engg. Civil Engg.	Surface Modification of Steel by HVOF for Corrosion Protection in Simulated Concrete Pore Environment.
SF-2007-19	Dr. A.A. Isab Dr. M.I.M. Wazeer	Chemistry Chemistry	Solid and Solution NMR Studies of ^{113}Cd and ^{199}Hg Complexes with the Constituents of DNA and Proteins
SF-2007-20	Dr. Hassan A. Muallem Dr. Shaikh Asrof Ali	Chemistry Chemistry	Synthesis of Polyisoxazolidines: A Novel Class of Polymers for Inhibition of Mild Steel Corrosion
SF-2007-21	Dr. Salahaddin Mohammad Dr. Emad El-Sebakhy Dr. Abdulhafez Selim	ICS Dept. ICS Dept. Biophysics Dept.	Prediction of Relative Solvent Accessibility of Residues in Proteins Using Data Mining Framework: As an Application in Bioinformatics
SF-2007-22	Dr. Jauhar Ali Dr. Sahalu Junaidu Mr. Saquib Razak	ICS Dept. ICS Dept. ICS Dept.	A Visualization Tool for Basic ICS Courses Allowing Students to Visualize Data Structures
SF2007-23	Dr. Samir Al-Ghadban Dr. Salam Zummo	EE Dept. EE Dept.	New Adaptive Schemes for Wireless Networks Based on Multi-Layer Space-Time Transmission
SF-2007-24	Dr Salam Zummo	Elec. Engg.	Performance of Forward Error Correction in Wireless Ad Hoc Networks
SF-2007-25	Dr. A. Abulkibash	Chemistry	Determination of pH Using Sequential Injection Analysis Combined with

			Differential Electrolytic Potentiometry
SF-2007-26	Dr. Mohammad Youssef Dr. Salem Alghamdi	Mgt & Mkt Mgt & Mkt.	Chain Management Practices and Its Impact on the Competitive Advantage of Saudi Arabian Companies
SF-2007-27	Dr. Anwar Khalil Sheikh Mr. Ahmed Mohiuddin	Mechanical Eng Mechanical Eng.	Quality Assurance in Submerged Arc Welding (SAW)
SF-2007-28	Dr. Maan Kousa Dr. Sadiq Sait Mr. Ahmar Shafi Mr. Ajmal Khan	Electrical Engg. Computer Eng. Electrical Eng. Electrical Eng.	Investigation and Performance Evaluation of IP Telephony (IPT) and Voice over IP (VoIP) in University Network
SF-2007-29	Dr. Hussain Alzaher Mr. Noman Tasadduq	Electrical Eng. Electrical Eng.	An Integrable 60 Hz Notch Programmable Filter
SF-2007-30	Dr. Mohammad Abido	Electrical Engg.	Optimal Power Flow Using Multiobjective Particle Swarm Optimization
SF-2007-31	Dr. Wasfi Al-Khatib Dr. L. Cheded	ICS Dept. Systems Engg.	Detection of Q/A Segments in Arabic Audio Lectures
SF-2007-32	Dr. Salem Al-Ghamdi Dr. Mohammed Youssef	Mgt & Mkt Mgt & Mkt	Influence of Commitment and Islamic Ethics on Organizational Change
SF-2007-33	Dr. Mehmet Sunar Dr. Lahouari Cheded	Mechanical Eng Systems Eng.	Application of Wavelet Techniques to Vibration Analysis of Rotating Machinery
SF-2007-34	Dr. M.H. Shwehdi Dr. Jamil Bakhashwain Mr. Umar Johar	Electrical Engg. Electrical Engg. Electrical Engg.	Investigating the Influence of KFUPM Personal Computers Processing Modes on Line Current Harmonics and Harmonic Content
SF-2007-35	Dr. Uthman Baroudi	Computer Engg.	Cross-Layer Optimization for Ad Hoc Wireless Networks
SF-2007-36	Dr. Uthman Baroudi Mr. Saquib Razzaq	Computer Engg. ICS Dept.	Characterizing Link Behavior over Wireless Ad Hoc Networks

SF-2007-37	Dr. Uthman Baroudi	Computer Engg.	Cross-Layer Optimization for Wireless Sensor Networks
SF-2007-38	Dr. Ahmet Z. Sahin Dr. Syed M. Zubair	Mechanical Eng Mechanical Eng.	Exergy Analysis of Process Heaters
SF-2007-39	Dr. Esmail Mokheimer Dr. Hassan M. Badr	Mechanical Eng Mechanical Eng	Validity of Computational Models for Simulation of Heat Transfer in Ground Heat Exchangers
SF-2007-40	Dr. Abul Kalam Azad Dr. Shamshad Ahmad	Civil Engg. Civil Engg.	Post-Initiation Corrosion State of Reinforced Concrete: A Phenomenological Study
SF-2007-41	Dr. Kassem Mustapha	Mathematical Sciences	An Efficient Numerical Solution for Semi-Linear Fractional Order Partial Differential Equations
SF-2007-42	Dr. A.R. Khan Dr. N. Hussain (KAAU)	Mathematical Sciences	Coincidences and Approximation of Non-Commuting Multi-Valued Maps with Applications
SF-2007-43	Dr. Khalid Masood Dr. Muhammad Tahir Mustafa	Math. Sciences Math. Sciences	Investigation and Regularization of Initial Inverse Heat Conduction Problem in Two Dimensions by total Variation and Spline Methods
SF-2007-44	Dr. Nasser-eddine Tatar	Math. Sciences	New Families of Relaxation Functions in Viscoelasticity
SF-2007-45	Dr. Mohammad H. Umar Dr. Anwar Joarder	Math. Sciences Math Sciences	A Study of the Bivariate Unit-Gamma LogNormal (BUGL) Distribution
SF-2007-46	Dr. Salim Messaoudi Dr. Nasser-eddine Tatar	Math. Sciences Math. Sciences	Critical Exponent for a Viscoelastic Problem in R^N

SF-2007-47	Dr. Qamar Hasan Ansari Dr. Soliman Alhomidan	Math. Sciences Math Sciences	Vector Quasi Equilibrium Problems and Their Applications
SF-2007-48	Dr. H.M.S. Bahidarah	Mechanical Engineering	Numerical Investigation on Flow Fluid and Heat Transfer Characteristics of Converging-Diverging Shape Edge-Shaped Wavy-Channels
SF-2007-49	Dr. Hanafy Omar Dr. Mohammed Abido	Aerospace Eng Electrical Eng.	Optimal Design of Fuzzy-based Guidance Law for Homing Missiles with Noisy Measurements Using Multi-Objectives Evolutionary Algorithms

8. PUBLICATIONS IN REFEREED JOURNALS
REPORTED AFTER JULY, 2006

College of Engineering

Civil Engineering

1. "Effect of Geotextile and Cement on the Performance of Sabkha Subgrade," Aiban, S.A., Al-Ahmadi, H.M., Asi, I.M., **Al-Amoudi, O.S.B.**, and Siddique, Z.U., Journal of Building and Environment, Vol. 41, 2006, pp. 807-820.
2. "Effect of Geotextile on the Load-Carrying Capacity and Deformation Characteristics of Sabkha Soil," Aiban, Saad A., Siddiqi, Zaki U., **Al-Amoudi, O.S.B.**, Al-Ahmadi, H.M., and Asi, I.M., Journal of Geosynthetics International, Vol. 13, No. 3, 2006, pp. 98-110.
3. "Residual Strength of Corrosion-Damaged Reinforced Concrete Beams," **A.K. Azad**, S. Ahmad and S.A. Azaher, ACI Materials Journal, ACI, Aug. 2006.
4. "Performance of Crossflow Membrane Bioreactor (CF-MBR) when Treating Refinery Wastewater," Muhammad Muhitur Rahman and **Al-Malack, Muhammad H.**, Desalination, 191 (2006), pp. 16-26.
5. "A Meshless Method for Non-linear Poisson Problems with High Gradients", **Husain J. Al-Gahtani**, Computer-Assisted Mechanics & Eng. Sciences CAMES, 13 (2006), p. 367.

Chemical Engineering

1. Hydrodynamic and transport parameter sensitivity in the simulation of nonisothermal agitated gas-liquid reactors", **A. A. Shaikh** and **A. Jamal**, Chemical Engineering Journal, 119, 27-36 (2006).
2. "A chemical reaction engineering laboratory experiment: isothermal laminar-flow reactor", **AboGhander, N.B.** and **Shaikh, A.A.** Journal Chemical Engineering Japan, 39, 678-681 (2006).
3. "Synthesis and comparative solution properties of single-, twin-, and triple-tailed associating ionic polymers based on diallylammonium salts", **Ali, Sk. Asrof; Umar, Yunusa; Abu-Sharkh, B. F.; Al-Muallem, Hasan A.**, Journal of Polymer Science, Part A: Polymer Chemistry (2006), 44(19), 5480-5494.
4. "Corrosion properties of duplex treated Ti-6Al-4V alloy in chloride media using electrochemical and positron annihilation spectroscopy techniques", **Khaled, M. M.; Yilbas, B. S.; Al-Qaradawi, I. Y.; Coleman, P. G.; Abdulmalik, D.; Seddigi, Z. S.; Abulkibash, A.; Abu-Sharkh, B. F.; Emad, M. M.**, Surface and Coatings Technology (2006), 201(3-4), 932-937.
5. "Morphology and conformation analysis of self-assembled triblock copolymer melts", **Abu-Sharkh, B.F.; AlSunaidi, Abdullah**, Macromolecular Theory and Simulations (2006), 15(6), 507-515.
6. "Structure and mechanism of formation of polyelectrolyte multilayers", **Abu-Sharkh, B. F.**, Polymer (2006), 47(10), 3674-3680.

7. "Structure and mechanism of the deposition of multilayers of polyelectrolytes and nanoparticles", **Abu-Sharkh, B.F.**, Langmuir (2006), 22(7), 3028-3034.
8. "Viscoelastic Properties of a High Temperature Cross-linked Water Shut-Off Polymeric Gel", **Al-Muntasheri, A.G., Hussein, Ibnelwaleed H., Nasr-Eldin, Hisham A., Amin, and Mohamed B.** J. Petroleum Science & Engineering, 55, 56-66, 2007.
9. "Influence of Branch Content, Comonomer Type and Composition Distribution on non-isothermal Crystallization Kinetics of Metallocene LLDPEs", **Ashraful Islam, Hussein, Ibnelwaleed A. and Atiqullah, Muhammed**, European Polymer Journal, 43, 599-610, 2007.
10. "Rheological, Thermal and Mechanical Characterization of Metallocene LLDPE blends with HDPE: Influence of M_w ", **Hameed, Tayyab, and Hussein, Ibnelwaleed A.** Polymer Journal, 38(11), 1-13, 2006.

Electrical Engineering

1. "Online Adaptive Control for an SVC System", **A.H.M.A.Rahim, E.P.Nowicki and O.P.Malik**, Electrical Power Systems Research, Vol. 76, 9-10, pp.801-807, June 2006.
2. "Robust Damping Controls for a Unified Power Flow Controller", **A.H.M.A.Rahim, J.M.Bakhashwain, S.A.Al-Baiyat**, International Journal of Emerging Electric Power Systems, Vol. 6, Issue 2, pp.1-21, 2006.
3. "Fuzzy STATCOM Control Strategies for Power System Stabilization", **A.H.M.A.Rahim, E.P.Nowicki and J.M.Bakhashwain**, Automatic Control & System Engineering Journal-ICGST, Vol. 6, no. 2, pp. 1-9, 2006.
4. "Flaw impulse response estimation in ultrasonic non-destructive evaluation using bi-cepstra", **Yamani, A.** NDT & E International, Vol. 40, pp. 57-61, January, 2007.
5. "Fork-Coupled Resonators for High Frequency Characterization of Dielectric Substrate Materials", **A. Muqaibel, A. Safaai-Jazi, and S. Riad**, IEEE Transactions on Instrumentation and Measurements, Vol. 55, No. 6, pp. 2216-2220, December, 2006.
6. "Pathloss and Time Dispersion Parameters for Indoor UWB propagation", **A. Muqaibel, A. Safaai-Jazi, A. Attiya B. Woerner, and S. Riad**, IEEE Transactions on Wireless Communication, Vol. 5, No. 3, pp. 550-559, March, 2006.
7. "Union Bounds on the Error Probability of Coded MRC in Nakagami-m Fading," **Salam Zummo**, IEEE Communications Letters, vol. 10, No. 11, pp. 769 – 771, November, 2006.
8. "Throughput Analysis of ARQ Protocols Over Rician, Nakagami and MIMO

- Block Fading Channels,” **Salam Zummo**, Arabian Journal on Science and Engineering (AJSE), December 2006.
9. “CMOS Bandpass Filter for Low-IF Bluetooth Receivers,” **Alzaher, H., and Al-Ghamdi, M.**, IEEE Transactions on Circuits and Systems I-Regular Papers, Vol. 53, pp. 1636-1647, 2006.
 10. “Simultaneous Stabilization Of Power System Using UPFC-Based Controllers”, **Ali T. Al-Awami, Y. L. Abdel-Magid, and M. A. Abido**, Journal of Electric Power Components and Systems, Vol. 34, No. 9, pp. 941-959, September, 2006.
 11. “Large signal analysis of wideband nonlinear amplifiers with third-order intermodulation and second-harmonic injection,” **M.T. Abuelma'atti** FREQUENZ, Vol. 60, , pp.155-159 July-August 2006.
 12. “Prediction of the two-tone suppression and intermodulation performance of auditory systems,” **M.T. Abuelma'atti**, Applied Acoustics, Vol. 67, pp. 882-891, September, 2006.
 13. ”Large signal analysis of wideband non-linear amplifiers with sum and difference frequency injection,” **M.T. Abuelma'atti**, International Journal of Electronics, Vol. 93, pp.493-510, July, 2006.
 14. "Flexible Digital Scrambler/Descrambler System," **Munir A. Al-Absi**, WSEAS Transaction on Circuits and Systems, Issue 8, Volume 5, pp 1376-1378, August, 2006.
 15. “Semi-Random LDPC Codes for CDMA Communication over Nonlinear Bandlimited Satellite Channels,” **M.A. Landolsi**, International Journal of Satellite Communications and Networking, Vol. 24, Issue 4, pp. 303-317, July 2006.
 16. ”Recurrence Formula for the Impulse Response Coefficients of the SincN FIR Filter" **Essam Hassan**, the Electronics Letters, Vol.42, No.15, pp 850-851, 20th July, 2006.
 17. “Class-AB square root domain filter”, **M. Al-Gahtani**, WSEAS Transactions on Circuits and Systems, Vol. 5, No. 8, pp 1381-1388, August, 2006.
 18. "Towards Skew Estimation of Document Images in OCR System", **Sarfraz, M., Zidouri, A., and Shahab, S. A** International Journal of Pattern Recognition and Machine Intelligence, International Scientific, Vol. 01(1), 2006.
 19. “Multi-Font Arabic Character Recognition”, **Zidouri, A., and Sarfraz, M.**, International Scientific, Vol. 02(1), pp. 21-33, 2006
 20. "Convergence and Steady-State Analysis of the Normalized Least Mean Fourth Algorithm,” **A. Zerguine**, Digital Signal Processing, Vol. 17 (1), pp. 17-31,

January 2007.

21. "A novel audio coding scheme using warped linear prediction model and the discrete wavelet transform", **M. Deriche and D. Ning**, IEEE Transactions on Audio Speech and Language Processing, 14 (6): pp. 2039-2048, November 2006.
22. "High-precision current conveyor implementation employing a current-steering output stage", **B. Wilson, M. Al-Gahtani**, International Journal of Electronics, Volume 93, Number 10, pp 653 – 662, October 2006.

Mechanical Engineering

1. "Conditions for Pressure Build-up due to buoyancy effects on Forced Convection in Vertical Eccentric Annuli under Thermal Boundary Condition of First Kind, Mokheimer, E. M. A. and Sami S., , Heat and Mass Transfer, Vol. 43 (2), December 2006, pp. 175-189.
2. "Correlations for maximum possible induced flow rates and heat transfer parameters in open Vertical eccentric annuli", Mokheimer, Esmail M.A and Maged A.I. El-Shaarawi, International Communications in Heat and Mass Transfer, Online November 10, 2006.
3. "Numerical Study of Fluid Flow and Heat Transfer over a Series of In-Line Non-Circular Tubes Confined in a Parallel Plate Channel", Haitham M.S. Bahaidarah, M. Ijaz, and N.K. Anand, Numerical Heat Transfer Part-B, Volume 50, Number 2 / August 2006 pp.97 - 119.
4. "Entropy generation in laminar jet: effect of nozzle exiting velocity profiles", Shuja S.Z., Yilbas B.S. and M.S. Khan, Heat and Mass Transfer, vol 42, n 9, p 771-777, 2006.
5. "Laser short-pulse heating of gold-silver assembly: entropy generation due to heat and electricity flows in electron sub-system", Yilbas B.S., Numerical Heat Transfer, Part A, vol 49, n 9, p 873-891, 2006.
6. "Laser cutting of corners: assessment of cutting quality", B.S. Yilbas, C. Karatas, O. Keles, I. Uslan, Y. Usta, M. Ahsan, Z. Yilbas, Lasers in Engineering, vol 16, n 1-2, p 157-171, 2006.
7. "Three-point bend testing of HVOF AMDRY 9954 coating on Ti-6Al-4V alloy", Al-Anazi D., M.S.J. Hashmi, Yilbas B.S., and Sunar M., J. Material Processing Technology, v 174, n 1-3, p 204-210, 2006.
8. "Thermal stress development due to laser step input pulse intensity heating", Yilbas B.S. and Ageeli N., J. Thermal Stresses, Vol. 29, n 8, p 721-751, 2006.
9. "Laser Heating and thermal stresses time exponentially heating puls case", Yilbas B.S. and Naqvi I., Transaction of Canadian Society of Mechanical Engineers, vol 30, n 1, p 113-142, 2006.
10. "Laser cutting of corners: cutting quality assessment", Yilbas B.S., Karatas C., Uslan

I., Keles O., Usta Y., Yilbas Z., and M. Ahsan, Lasers in Engineering, vol. 16, n 1-2, 2006, p 157-171, 2006.

11. " Heating of Gold Due to Surface Heat Flux and Entropy Generation", Yilbas B.S. and Boran K., Jap. J. Appl. Phys., Vol. 45, No. 8A, pp. 6308-6314, 2006.
12. "Environmental Degradation of Flexural and Fracture Properties of Glass/Vinyl Ester Filament Wound Pipes", Gasem, Z.M, Key Engineering Materials, Vol 334-335 (2007) pp.501-504.

Petroleum Engineering

1. "Quality Assurance Lessens Core, Log Data Uncertainties," **Hamada, G. M.**, Oil & Gas Journal, October 2, 2006, pp. 41 - 46.
2. "The Coefficient of Isothermal Compressibility of Black Oils," **Al-Marhoun, M.A.**, paper SPE 81432-SUM, SPE Reservoir Evaluation & Engineering Online, August 2006.
3. "DMR Porosity can Better Estimate Tight Gas Sand Porosity", **Hamada, G.M.**, Nafta Journal, Zegreb, R. of Croatia, November 2006, pp. 459-466.

Aerospace Engineering Department

1. "Neural Network Based Failure Rate Prediction for De Havilland Dash-8 Tires", **Al-Garni, A.Z., Jamal, A., Ahmad, A.M., Al-Garni, A.M., and Tozan, M.**, Engineering Applications of Artificial Intelligence, Vol. 19, No. 2, Sep 2006 (1427), pp. 681-691.
2. "Failure Forecasting of Aircraft Air Conditioning/Cooling Pack with Field Data", **A. Z. Al-Garni , M. Tozan , A. M. Al-Garni, and A. Jamal**, Accepted by AIAA, accepted for Journal of Aircraft, 2006.

College of Sciences

Chemistry Department

1. "Conformational stability and normal coordinate analyses of imidoalkyne $O=C=CH-CH=NH$ ", **H. M. Badawi, A.Al-Saadi**, J. Mol. Struct., Vol. 784 (2006), 259.
2. "Conformational equilibrium and normal coordinate analyses of ketenecarboxylic acid $O=C=CH-COOH$ ", **H. M. Badawi**, Can J Anal Sc Spectrosc., Vol. 51 (2006), 9.

3. "Normal coordinate and vibrational analyses of 2-aza- and 2-phosphabutadienes $\text{CH}_2=\text{CH}-\text{M}=\text{CH}_2$ (M is N and P)", **H. M. Badawi**, Can J Anal Sc Spectrosc., Vol. 51 (2006), 74.
4. "C-N Barriers to Internal Rotations and Vibrational Analyses of Carbamoylazine $\text{NNN}-\text{CONH}_2$ ", **H. M. Badawi**, Asian J Spectrosc., Vol. 10 (2006), 7.
5. "Vibrational Analyses of sulfamoyl halides $\text{NH}_2\text{SO}_2\text{X}$ (X is F, Cl and Br)", **H. M. Badawi**, Spectrochim. Acta Part A, Vol. 65 (2006), 453.
6. "Comparison of the Quality of DFT Versus MP2 and MP3 Total Energies and an Unexpected Size Effect in the Conformational Equilibria Together with the Vibrational Analyses of Vinylhalogermanes", **W. Förner, H.M. Badawi and Z.S. Seddigi**, Asian Journal of Spectroscopy, 10 (2006), 15-36 (2006).
7. "Analysis of the Asymmetric Ring Puckering Potential in 1-Oxo-1-Chloro-Phosphetane and Analysis of Theoretical Vibrational Spectra", **H.M. Badawi and W. Förner**, Asian Journal of Spectroscopy, 10 (2006), 37-51.
8. "Synthesis and Comparative Solution Properties of Single-, Twin-, and Triple-Tailed Associating Ionic Polymers Based on Diallylammonium Salts", **Sk. Asrof Ali, Yunusa Umar, B. F. Abu-Sharkh, and Hasan A. Al-Muallem**, Journal of Polymer Science, Part A: Polymer Chemistry, 44(9) (2006), 5480-5494.
9. "Synthesis and crystal structure of bis(4-methylpiperidine-dithiocarbamate-S,S')-palladium(II)", Saira Shahzadi, Saqib Ali, Amin Badshah, Farkhanda Shaheen, Faiz Ahmed and **Mohammed Fettouhi**, Journal of Chemical Crystallography, 36(9) (2006), 567-570.
10. "Catalytic Processing of Waste Plastics With/Without Petroleum Resid – An Economic Evaluation", Rahman, Faizur; **Siddiqui, M. N.**; Ali, M. F. and Redhwi, H. H., Energy Sources, Part A, Volume 28(15) (2006), p.1353-1363.
11. "Solution and Solid-State NMR Studies of Thiourea, Selenourea, N,N-Dimethyl selenourea and their Ag(I) Complexes", **M. I. M. Wazeer, A. A. Isab and S. Ahmed**, Can. J. Anal. Spectroscopy, 51 (2006), 43-48.
12. "Complexation of gold(I) trimethylphosphine with selenone containing ligands", **A. A. Isab, and S. Ahmad**, Transition Metal Chem 31 (2006), 500-503.
13. "Synthesis and Characterization of Mercury(II) Complexes of Selones: X-ray Structure, CP MAS and Solution NMR Studies", **A. A. Isab, M. I. M. Wazeer, M. Fettouhi, S. Ahmad and W. Ashraf**, Polyhedron, 25 (2006), 2629-2636.
14. "Crystal structure of dibromo-bis(1,3-imidazolidine-2-thione-S)zinc(II), $\text{ZnBr}_2(\text{C}_3\text{H}_6\text{N}_2\text{S})_2$ ", **M. Fettouhi, M. I. M. Wazeer and A. A. Isab**, Z. Kristallogr., NCS, 221 (2006), 221-222.
15. "Applications of NMR spectroscopy in understanding the gold biochemistry", **A.**

A. Isab, and S. Ahmad, Spectroscopy, 4 (2006), 109-123.

Earth Sciences Department

1. "Fractal subseries of the harmonic series", **Korvin, G.**, Journal of Number Theory (2006, submitted).

Mathematical Sciences Department

1. "Mixed semidefinite and second-order cone optimization approach for the Hankel matrix approximation problem", M.M. Alshahrani and Suliman S. Al-Homidan, Nonlinear Dynamics and Systems Theory, 6, no.3, (2006), 211-224.
2. "Solving hankel matrix approximation problem using semidefiniteprogramming" Suliman S. Al-Homidan, Journal of Computational and Applied Mathematics, 202, No. 2, 304-314.
3. "On the dimension theory of polynomial rings over pullbacks", S. Kabbaj, Multiplicative Ideal Theory in Commutative Algebra, Springer, (2006), 263-277.
4. "On a class of free boundary problems of type $\text{div}(a(X)\text{grad } u)=-\text{div}(H(X)\chi(u))$ ", S. Challal and A. Lyaghfour, Differential and Integral Equation, 19, no.5, (2006), 481-516.
5. "On the dam problem with two fluids governed by a nonlinear Darcy's law", S. Challal and A. Lyaghfour, Advances in Differential Equations, 11, no.8, (2006), 841-892.
6. "On the boundary stabilization of a compactly coupled system of nonlinear wave equations", A. Guesmia and S.A., Messaoudi, Int. J. Evolution Eqns., 1, No. 3, (2005), 211-224.
7. "Characterizations and applications of γ -open sets", R. M. Latif, Soochow Journal of Mathematics, 32, No.4, (2005), 369-378.
8. "Product moments of bivariate wishart distribution", A.H. Joarder, Journal of Probability and Statistical Science, 4, No. 2, (2006), 233-244.
9. "Relationship between available and exchangeable potassium content and other soil properties", M. Kozak, M. Stepien and A.H. Joarder, Polish Journal of Soil Science, 38, No. 2, (2005), 179-186.
10. "Algebraic inequalities of measures of location" A. Laradji and A.H. Joarder, Communications in Statistics – Theory and Methods, 35, no.11, (2006). (USA, ISI)
11. "Some integrals and their applications in correlation analysis", A.H. Joarder, Statistical Papers, (2006). (Germany, ISI).
12. "A family of estimators of mean, ratio and product of a finite population using random nonresponses", H.P. Singh, P. Chandra, A.H. Joarder and S. Singh, Test: Journal of the Spanish Statistical Society, 16, no. 1, (2006). (Spain, ISI).
13. "An introduction to uncorrelated T-Model", B.M.G. Kibria and A.H. Joarder, Journal of

Statistical Research, 40, n0.1, (2006), 59-72.

14. "Common fixed points of compatible maps on balls and eigenvalue problems" A.R. Khan and A.A. Domlo, Nonlinear Analysis Forum, 11, no.1, (2006), 15-21.
15. "Coincidence and invariant approximation theorems for generalized f -nonexpansive multivalued mappings", A.R. Khan, F. Akbar, N. Sultana and N. Hussain, International Journal of Mathematics and Mathematical Sciences, 2006, Article ID 17673, (2006), 1-18.
16. "An impulsive nonlinear singular version of the Gronwall-Bihari Inequality," N. Tatar, Journal of Inequalities and Applications, 2006, Article ID 8561, (2006), 1-12.
17. "Nonexistence of solutions to a hyperbolic equation with a time fractional damping, Zeitschrift fur Analysis und ihre Anwendungen", M. Kirane and N. Tatar, J. Anal. Anal. Appl., 25, no.2, (2006), 131-142.
18. "Existence and global attractivity of a periodic solution to a nonautonomous dispersal system with delays", M. Kouche and N. Tatar, Applied Mathematical Modelling, 31, no.4, (2007), 780-793.
19. "Some fractional differential inequalities and their applications", K.M. Furati and N. Tatar, Mathematical Inequalities and Applications, 9, no.4, (2006), (*Abstract available on line*).
20. "Nonexistence results for a fractional problem arising in thermal diffusion in fractional media", N. Tatar, Chaos, Solitons and Fractals, (2006). (*On line 8 September 2006*).
21. "Long time behavior for a nonlinear fractional model", K.M. Furati and Tatar, Journal of Mathematical Analysis and Applications, (2006). (*Available on line 26 November 2006*).
22. "On some bounds for the Mellin transform and applications to the Riemann zeta and Macdonald functions", P. Cerone, M.A. Chaudhry and A. Qadir, Integral Transforms and Special Functions, 17, (2006), 769-777.
23. "Existence results for some Bvps associated with second order odes", A. Benmezai, A. Boucherif, S. Djebali and T. Moussaoui, Dynamics of cont., Discrete and Impuls System, A:Mathematical Analysis, 13, no.6, (2006), 737-748.
24. "Positive solutions of second order boundary value problems", A. Boucherif, Proc. Conference Differential and Difference Equations and Applications, (2006), 231-236 (Hindawi Publ. Corporation 2006).
25. "Fully coprime comodules and fully coprime corings", J. Abuhlail, Applied Categorical Structures, 14, no. 5-6, (2006), 379-409.
26. "Eigenvalues of sturm-liouville problems with discontinuity inside a finite interval", B. Chanane, Applied Mathematics and Computation, doi:10.1016/j.amc.2006.11.082.
27. "Sturm-liouville problems with parameter dependent potential and boundary conditions", B. Chanane, J. Computational and Applied Mathematics, doi:10.1016/j.cam.2006.12.006.

28. "Computing the spectrum of non self-adjoint sturm-liouville problems with parameter dependent boundary", B. Chanane, J. Computational and Applied Mathematics, doi:10.1016/j.cam.2006.06.014.
29. "Computing the eigenvalues of singular sutrm-liouville problems using the regularized sampling method", B. Chanane, Applied mathematics and Computation, doi:10.1016/j.amc.2006.05.187, (2006).
30. "Wavelet optimized finite difference method with non-static regridding", Azad, A. Siddiqi and M.T. Mustafa, Applied Mathematics and Computation, (2006), doi:101016/j.amc.2006.06.130.
31. "Computer attitude, use, experience and perceived pedagogical usefulness; the case of Mathematics Professors", B. Yushau (2006), Eurasia Journal of Mathematics, Science and Technology Education, 2, No. 3, 1-17.
32. "Fully coprime comodules and fully coprime corings", J. Abuihlail, Applied Categorical Structure, 41, No. 5-6 (2006), pp. 379-409.

Physics Department

1. "Surface Chemistry of Selected Supported Metallocene Catalysts Studied by DR-FTIR, CPMAS NMR, and XPS Techniques", M. Atiqullah, M. N. Akhtar, M. Faiz, A. Moman, A. H. Abu-Raqabah, J. H. Khan, and M. I. Wazeer, Surf. Interface Anal. 38 (2006) 1319
2. "XANES Investigation of Vanadium-doped ZnO Thin Films", M. Faiz, N.Tabet, A. Mekki, B.S. Mun, and Z. Hussain, Thin Solid Films 515 (2006) 1377
3. "Structural and magnetic investigation of Fe₂O₃-TeO₃ glasses", A Mekki, GD Khattak and LE Wenger, Journal of Non-Crystalline Solids 352 (2006) 3326-3331.
4. "Optimization of Mammography Linear Grid Geometry", Al Kafi M., Maalej N., Naqvi A. A. Medical Physics Journal, 33(6): 1989-1990, June 2006.
5. "Surface Dose Measurement in 6 MeV X-ray Beam Using Radiographic Film and TLD", Al-Ghamdi H., Maalej N., Medical Physics Journal, 33(6): 2138-2138, June 2006.
6. "Chain transfer in pulsed laser polymerization of methylmethacrylate in the presence of different cobalt (II)[Co(dm^g-2H)₂ (BF₂)₂] and [Co(afdo-2H)₂ (BF₂)₂] complexes", M. S. Hussain, S. A. Awan, Z. S. Seddigi, M. W. Ashraf and M. A. Khan, J. Photochemistry & Photobiology A: Chemistry, Vol. 184, 58-65 (2006)
7. "Optical emission characteristics of glow discharges in Ar-O₂ and He-O₂ gas mixtures", A. M. Al-Jalal and M. A. Khan, Czech. J. Phys., Vol. 56, B611-617 (2006).

8. "Cumulative contributions of 3s-np ($n \geq 3$) transitions in comparing O-atom densities in low pressure Ar-O₂ and He-O₂ glow discharges", **M. A. Khan and A. A. Al-Jalal**, Applied Physics Letters, 89 (2006).
9. "Functional dependence of ultrasonic speed in water on salinity and temperature", **Y. N. Al-Nassar, A. M. Al-Jalal, M. A. Khan, and S. A. Al-Kaabi**, The e-Journal of Nondestructive Testing & Ultrasonics: (www.ndt.net), Vol.11, No.6, (2006).
10. "Detection of Heavy Metals in Arabian Crude Oil Residue using Laser Induced Breakdown Spectroscopy", **Gondal, M. A. T. Hussain, and Z. H. Yamani**, TALANTA, Vol 69 (2006) 1072.
11. "Plastic Deformation of Steel Surface due to Laser Shock Processing", **B.S. Yilbas, A.F.M. Arif and M.A. Gondal**, Journal of Engineering Manufacture, Volume 220, Number 6 (2006) 857-867(11)
12. "Gamma radiation effects on GdBa₂Cu₃O₇ high temperature Superconductor" **Kh A. Ziq and H. Hashem**, Phys. Stat. Sol. (c) 3, No. 9, (2006) 2975–2977.
13. "Hydrogen effects on vortex pinning in GdBa₂Cu₃O₇ high temperature superconductor" **Kh A. Ziq and H. Qadi**, Phys. stat. sol. (c) 3, No. 9, (2006) 2999–3001.
14. "Performance Improvement of keV Neutrons-based PGNAА setups" **Naqvi . A. A., M. S. Abdelmonem, Ghada Al-Misned , and Hanan Al-Hamdi**, Applied Radiation and Isotopes, Vol 64/12 (2006) pp 1631-1636.
15. "Gamma rays Interferences in Corrosion Analysis of Concrete Samples", **Naqvi A. A., M. M. Nagadi and O. S. B. Al-Amoudi**, Nuclear Instruments & Methods in Physics Research A, Vol 569/3 (2006) pp 803-809.
16. "New Source-Moderator Geometry to Improve Performance 252Cf and 241Am-Be Sources based PGNAА setup", **Naqvi A. A., M. S. Abdelmonem, Ghada Al-Misned and Hanan Al-Ghamdi**, Nucl. Instr. Meth. A. Vol 562/1(2006) pp 358-364.
17. "Prompt Gamma Analysis of Chlorine in Concrete for Corrosion Study", **Naqvi A. A., M. M. Nagadi and O. S. Baghaabra Al-Amoudi**, Applied Radiation and Isotopes, Vol 64/2 (2006) pp 283-289.
18. "Performance improvement of a PGNAА setup due to change in moderator design: A Monte Carlo study" **M. S. Abdelmonem, A. A. Naqvi, Ghada Al-Misned, Hanan Al-Ghamdi**, Journal of Radioanalytical and Nuclear Chemistry, Vol. 271, No.3 (2007) 685–690.
19. "Total and spectral natural gamma-ray logs of core sample", **Aksoy A., M. M. Nagadi, F. Z. Khiari and A. A. Naqvi**, Arabian Journal for Science and Engineering, Vol. 31 (2006) pp. 15-22.

20. "Irradiation-induced gold silicide formation and stoichiometry effects in ion beam-mixed layer", **Khalfaoui, R.; Benazzouz, C.; Guittoum, A.; Tabet, N.; Tobbeche, S.** Vacuum 81(1), (2006) 45.
21. "Thin film coated energy-efficient glass windows for warm climates", **A.M. Al-Shukri**, Desalination 209 (2007), pp. 301-308.

College of Computer Science & Engineering

Information & Computer Science Department

1. "A Learning Approach for Prioritized Handoff Channel Allocation," **E. El-Alfy, Y. Yao and H. Heffes**, IEEE Transactions on Wireless Communications, Vol. 5, No. 7, pp. 1651-1660, July 2006.
2. "An Empirical Study of Relationships among Extreme Programming Engineering Activities", Alshayeb, M. and Wei Li, Information and Software Technology Journal. Vol. 48 Issue 11, November 2006, pp. 1068-1072.
3. "A Random Algorithm for Multiselection", **M. H. Alsuwaiyel**, Journal of Discrete Mathematics and Applications, V. 16, No. 2, 2006, pp. 175-180(6).
4. "Machine-Learning-based Classification of Speech and Music", **M. Kashif Saeed Khan, and W. Al-Khatib**, Multimedia Systems, 12(1): 55-67, August 2006.
5. "On the Deployment of VoIP in Ethernet Networks: Methodology and Case Study," **K. Salah**, International Journal of Computer Communications, Elsevier Science, Vol. 29, No. 8, 2006, pp. 1039-1054.
6. "Computer-Aided Reverse Engineering using Simulated Evolution on NURBS", **Sarfraz, M.**, (2006), International Journal of Virtual & Physical Prototyping, Taylor & Francis, Vol. 1(4).
7. "Towards Skew Estimation of Document Images in OCR System", **Sarfraz, M., Zidouri, A., and Shahab, S.A.**, (2006), International Journal of Pattern Recognition and Machine Intelligence, International Scientific, Vol. 01(2), pp. 47–56.
8. "Identification of Number Plates under Extreme Outdoor Factors", **Yousuf, S.A., and Sarfraz, M.**, (2006), International Journal of Pattern Recognition and Machine Intelligence, International Scientific, Vol. 01(3), pp. 69–78.

Computer Engineering Department

1. "Distributed XML-based Network Management using JPVM", **Shaik Sirajuddin, and Mohammed H. Sqalli**, International Journal of Network Management

(IJNM), John Wiley & Sons, Inc. Volume 16, Issue 4, July/August 2006, Pages: 263-277.

2. "Modeling and Formal Verification of DHCP Using SPIN", **Syed M. S. Islam, Mohammed H. Sqalli, and Sohel Khan**, International Journal of Computer Science & Applications (IJCSA), Volume 3, No. 2, June 2006, Pages: 145-159.
3. "Hardware Implementations of GF(2m) Arithmetic using Normal Basis", **T. Al-Somani, and A. Amin**, Journal of Applied Sciences Vol. 6, Nov. 6, 2006, Pages 1362-1372.
4. "Gateway Selection Review in Ad hoc Networks," **Tarek Sheltami**, The Journal of Computers, VOL. 1, No.2, May 2006, Pages 8-14.
5. Fast 160-Bits (GFp) Elliptic Curve Crypto Hardware of High-Radix Scalable Multipliers", **Adnan Gutub**, International Arab Journal of Information Technology (IAJID), Vol. 3, No. 4, October 2006.
6. "High Performance Elliptic Curve GF(2m) Crypto Processor", **Turki F. Al-Somani, M. Ibrahim, and Adnan Gutub**, Information Technology Journal (ITJ), Vol. 2, No. 5, 2006.

Systems Engineering Department

1. "Compressed Workweek Scheduling with Days-off Consecutivity, Weekend-off Frequency, and Work Stretch Constraints", **H. K. Alfares**, INFOR, Vol. 44, No. 3, pp.175-189, August 2006.
2. "Lot-sizing, Preventive Maintenance, and Warranty Decisions for Imperfect Production Systems", **M. Ben-Daya**, and S.M. Noman, Journal of Quality in Maintenance Engineering, 12, pp. 68-80, 2006.
3. "A Discounted Integrated Inspection-Maintenance Model for a Single Deteriorating Production Facility", M. Hariga, N. Azaiez, and **M. Ben-Daya**, Int'l. Transactions in Operational Research, 13, pp. 353, 2006.
4. "Age-based Hybrid Model for Imperfect Preventive Maintenance" S. El-Ferik and **M. Ben-Daya**, , IIE Transactions, 38, pp. 365, 2006.
5. "Imperfect Production Systems with Inspection Errors, Preventive Maintenance, Inflation and Time Value of Money", **M. A. Darwish**, Asia Pacific Journal of Operational Research, 23(1), pp. 89-105, 2006.
6. "Sensitivity Minimization of MIMO Systems with a Stable Controller : A Linear Fractional Transformation Approach", **A. W. Saif**, Transactions on Systems, Signals & Devices, Vol. 1, No. 1, pp. 50-58, 2006.

7. “Early-Tardy Minimization for Joint Scheduling of Jobs and Maintenance Operations on a Single Machine”, S.A. Raza, **U.M. Al-Turki**, S. Z. Selim, International Journal of Operations Research (to appear in the special issue on “Scheduling in Manufacturing, Information, and Service Industries”)

College of Environmental Design

Architecture Department

1. “Application of an Alternative Teaching Model in a Virtual Architectural Design Studio: Impacts and Constraints, **Reffat, R.** (2006) Journal of Open House International, Vol. 37 (3), pp. 77-84.
2. “Computing in Architectural Design: Reflections and an Approach to New Generations of CAAD, **Reffat, R.** (2006) Journal of Information Technology in Construction, Vol. 11, pg. 655-668, <http://www.itcon.org/2006/45>

Architectural Engineering Department

1. “Business Continuity during Facility Renovations”, **Hassanain, M., and Al-Mudhei**, Journal of Corporate Real Estate, Vol. 8, No. 2, 2006, pp. 62-72.
2. “Factors Affecting the Development of Flexible Workplace Facilities”, **Hassanain, M.**, Journal of Corporate Real Estate, Vol. 8, No. 4, 2006, pp. 213-220.
3. “Towards the Design of Fire Safe School Facilities”, **Hassanain, M.**, Disaster Prevention and Management, Vol. 15, No. 5, 2006, pp. 838-846.

City & Regional Planning Department

1. “A Communicative Planning Approach to Combat Graduate Unemployment in Saudi Arabia”, **Aldosary, Adel, Syed Masiur Rahman, and Yusuf Adedoyin Aina**, Human Resource Development International, Vol. 9, No.3, 2006.
2. “Principles for the Rejuvenation of an Islamic City in the Modern Context: The Case of Medina of Tunis”, **Aldosary, Adel, and Shahid, Mohammad M.**” CriSSMA Working Paper No.12 , Research Centre on the Southern Systems and Wider Mediterranean (CriSSMA), Faculty of Political Science, Università Cattolica del Sacro Cuore, Milan, Italy, December, 2006.

Construction Engineering & Management Department

1. "Classifying Construction Contractors Using Unsupervised-Learning Neural Networks", **Ashraf M. Elazouni**, Journal of Construction Engineering and Management, ASCE, Vol. 132, pp. 1242-1253 (2006).

College of Industrial Management

Finance & Economics Department

1. “The impact of Saudi Arabia’s WTO accession on selected economic sectors and domestic economic reforms.” **Ramady. M. and Mansour M.** World Review of Entrepreneurship, Management and Sustainable Development. Vol. 2 No. 3, 2006. pp 189-199.

Management & Marketing Department

1. "Learning Institution to Learning Organization: Kudos to Reflective Practitioners", **Yeo, R.K.** (2006) Journal of European Industrial Training, Volume 30, Number 5, pp 396-419
2. "Building Knowledge through Action Systems, Process Leadership and Organizational Learning", **Yeo, R.K.** Foresight-The Journal of Future Studies, Strategic Thinking and Policy, Volume 8 Number 4, pp 34-44
3. "The Relationship between Consumers' Attitudes and Predicting their Behaviors: The Case of the United Arab Emirates (UAE)" (Single Author) , **El-Omari, Hussein A.** The International Journal of applied management of Change, Volume 1, Issue 2, UK, 2006".
4. "Plant Location ISO 9000 and quality Management Practices", **Youssef, M.; Al-Ghamdi, S. and others; I.** Journal of Quality and Reliability Management, Vol. 23, No. 8, 2006.
5. "Restructuring a higher education institution; A case study from a developing country" **Sohail, Sadiq M.** Daudi S. and Rajadurai, J. (2006). International Journal of Educational Management, Vol. 20 No. 4 2006 pp.279-290
6. "Socio-economic Impact Assessment in Saudi Arabia: problems and perspectives". **Sohail, Sadiq M.** and Burney, M. A. (2006) World Review of Entrepreneurship, Management and Sustainable Development, Vol. 2 No. 3, pp 248-257
7. “An Evaluation of Malaysian Consumers' Perceptions Towards Products Made in Korea: An Asia Pacific Marketing Perspective” **Sohail, Sadiq. M** and Ahmed, Z.U. (2006) Journal of Korean Academy of Management Science, Vol. 16 No. 1.
8. "Marketing of Australia as a Tourist Destination to Malaysian Tourists", Ahmed, Zafar U., Chris Myers, **Sohail, Sadiq. M** Services Marketing Quarterly (2006), Vol. 28, Issue. 2, pp 57-78.

Finance & Economics Department

1. “Causality Between Financial Development and Economic Growth: An Application of Vector Error-Correction and Variance Decomposition Methods to Saudi Arabia” **Mansur Masih, Ali Elg and Haider Madani,** Applied Economics

(in press)

2. “Macroeconomic Policy Trilemma in Open Economies: Which Policy Option is Ideally Suited to the Malaysian Context ?” **Mansur Masih**, Journal Pengurusan, 24, 2006, 3-26
3. “Tests of Different Variants of the Monetary Model in a Developing Economy: Malaysian Experience in the Pre- and Post- Crisis Periods”, **Mansur Masih**, C. Lee and M. Azali, Applied Economics (in press)

9. RESEARCH PAPERS PRESENTED AT CONFERENCES REPORTED AFTER JULY, 2006

College of Engineering

Civil Engineering

1. “A Damage-Propagation Model for Chloride-induced Corrosion of Reinforced Concrete Beams”, **A.K. Azad**, S. Ahmad and S.F. Azher, 8th Int. Conf. on Concrete in Hot and Aggressive Environments, to be held in Nov. 2006.
2. “Influence of Temperature and Chloride Contamination on the Corrosion Performance of Fusion-bonded Epoxy Coated Rebars in Blended Cement Concrete,” M. Maslehuddin, O.S. Al-Amoudi, **A.S. Al-Gahtani** and M. Ismail, Accepted abstract, Concrete Durability Conference, Bahrain, Nov. 2006.
3. “Effect of Chloride Concentration Reinforcement Corrosion in Concrete”, Maslehuddin, M. **Al-Dulaijan**, **S.U.**, Ibrahim, M. Alidi, S.H. and Meththel, M.H., ACI Special publication SP 234, American Concrete Institute, Farmington Hills, pp. 205-224, July 2006.
4. “Assessment of the Status of USTs at Service Stations in Eastern Saudi Arabia,” **M. Al-Suwaiyan** et al., The 4th Saudi Technical Conference and Exhibition, Riyadh, Dec. 2006.
5. “Assessment of Entrapment of Saudi Arabia Light Crude Oil in Sandy Unconfined Aquifers: A rational approach”, N. Muazu and **M. Al-Suwaiyan**, The 2nd International Conference on Water Resources and Environment, 2006, Riyadh.
6. “Groundwater Contamination from USTs: Prevention versus Restoration”, **Mohammad S. Al-Suwaiyan**, The 2nd International Conference on Water Resources and Arid Environment, 2006, Riyadh, Saudi Arabia.
7. “Advanced Oxidation of Phenol and Ammonia for Industrial Wastewater Treatment: Process Efficiency & Reuse Possibilities”, Mohammad S. Vohra, Syed A. Malik and **Mohammad S. Al-Suwaiyan**, The 2nd International Conference on Water Resources and Arid Environment, 2006, Riyadh, Saudi Arabia.
8. “Treatment of Synthetic Pretreated Petroleum Refinery Wastewater Using TiO₂-Assisted Photocatalysis”, **Vohra, M.S.**, Malik, S.A., and Saleh, M.S., Fourth Saudi Technical Conference & Exhibition, December 2-6, 2006, Riyadh.
9. “Analysis of Rectangular Plates: A Variational Symbolic Approach”, **Husain J. Al-Gahtani**, Proceedings of the 11th Arab Structural Engineering Conference, Kuwait, 13-15 November, 2006.

Electrical Engineering

1. "Array feeders for Microwave communication systems," **Sheikh S.I., et al**, Progress in Electromagnetic Research Symposium (PIERS-2006), Tokyo, Japan, August 2-5, 2006.
2. "High speed performance of 1.55 um buried hetero-structure lasers with 20 InGaAsP/InGaAlAs quantum wells," **M.N. Akram, O. Kjebon, M. Chacinski, R. Schatz, J. Berggren, F. Olsson and A. Berrier**, European Conference on Optical Communication, Cannes, France, September, 2006
3. "Adaptive Stabilizing Control of Power System through Series Voltage Control of a Unified Power Flow Controller", **A.H.M.A.Rahim and S.A.Al-Baiyat**, Proc. Summer Computer Simulation Conference, SCSC'06, pp.251-256, ISBN 1-56555-307-1, Calgary, July-August, 2006.
4. "Wavelet-PCA based classification of defects using ultrasonic pulse echo signals", **Yamani A., and M. Deriche**, ICCE-14 Conference, Boulder, Co., U.S.A., July 2-8, 2006.
5. "Performance Analysis of Coded Cooperation Diversity in Wireless Networks," **Salam Zummo**, Proceedings of the IEEE International Conference on Communications, (ICC'06), Istanbul, Turkey, 2006.
6. "Ping-Cheng Yeh and Wayne Stark, "Performance Analysis of Bit-Interleaved Space-Time (BI-ST) Coded Systems Over Wireless Channels," **Salam Zummo**, Proceedings of the IEEE International Conference on Communications, (ICC'06), Istanbul, Turkey, 2006.
7. "Analysis and design of UPFC damping stabilizers for power system stability enhancement," **M. A. Abido**, Ali T. Al-Awami, and Y. L. Abdel-Magid, Proceedings of The IEEE Symposium on Industrial Electronics ISIE'2006, Montreal, Canada, pp. 2040-2045, July 9-13, 2006.
8. "Multiobjective Optimal VAR Dispatch Using Strength Pareto Evolutionary Algorithm," **M.A. Abido**, Proceedings of The IEEE World Congress on Computational Intelligence 2006, Vancouver, Canada, 2006, pp. 730 – 736, July 16-21, 2006.
9. "Power System Stability in Deregulated Environment," **Ibrahim El-Amin, Jamil Bakhawain, and M. A. Abido**, Proceedings of The 16th GCC-CIGRE, Abu-Dhabi, United Arab Emirates, pp. 147-152, November 28-30, 2006.

10. "Power System Stabilizer Tuning Study of East-Central Power System in Saudi Arabia," **M.A. Abido**, Proceedings of The Fourth Saudi Technical Conference and Exhibition 2006, Riyadh, Saudi Arabia, December 2-6, 2006.
11. "Optimal Location and Setting of FACTS for Optimal Power Flow Problem Using a Hybrid GA/PSO Algorithm," **M.A. Abido and M.M. Al Hulail**, Proceedings of The Fourth Saudi Technical Conference and Exhibition 2006, Riyadh, Saudi Arabia, December 2-6, 2006.
12. "A reconfigurable Satlin/Sigmoid/Gaussian/Triangular basis functions computation circuits," **M.T. Abuelma'atti and A. Shwehneh**, IEEE Asia Pacific Conference on Circuits and Systems, Singapore, pp.1174-1177, December 4-7, 2006.
13. "Engineering education in Saudi Arabia: Problems and solutions," **M.T. Abuelma'atti**, The Fourth Saudi Technical Conference and Exhibition, Riyadh, Saudi Arabia, pp. 1-10, December 2-6, 2006.
14. "Ethical issues in the publication of research," **M.T. Abuelma'atti**, Symposium on Graduate Studies in the universities of the GCC countries, King Faisal University, Al-Ahsa, Saudi Arabia, pp. 69-71, November 26-27, 2006.
15. "Frequency independent phase shifter," **Munir Al-Absi**, ICM 2006, KFUPM, 16-19 December 2006
16. "A New Biasing Technique for the MOS transistor," **Munir A. Al-Absi**, 10th WSEAS International Conference on CIRCUITS, Vouliagmeni, Athens, Greece, pp. 534-563, July 10-12, 2006.
17. "A New Polyphase Current-Mode Filter Using Digitally-Programmable Current-Controlled Current-Conveyor" **S. Al-Shahrani and M. Al-Gahtani**, the 18th International Conference on Microelectronics ICM-2006 at KFUPM, December 16-19, 2006.
18. "Deregulation and Restructuring of the Electricity Sectors, **M. Shwehdi**, GCC CIGRE's 15th Seminar Proceedings, Abu-Dhabi, 29-30 November, 2006.
19. "ELF Electric and Magnetic Fields Exposure Assessment of Live-Line Workers for 132 kV Transmission Line of SEC", **I.O. Habiballah, T. K. Abdel-Galil, M. M. Dawoud, C. A. Belhadj, M. Arif Abdul-Majeed**, and T.A. Al-Betairi 2006 IEEE PES Transmission and Distribution Conference and Exposition: Latin America, Caracas, Venezuela, August 2006.
20. "External Electric & Magnetic Field Assessment On The General Public Near A 132 KV Transmission Line Right Of Way", **M. M. Dawoud, C. A. Belhadj, I.O. Habiballah, T. K. Abdel-Galil, and M. Arif Abdul-Majeed**, 4th International Workshop on Biological Effects of EMFs, Crete, Greece, Proc. Vol.1, pp. 645-652, 16-20 October 2006.

21. "International Restructuring and Privatization Experiences: Lessons Learned", the GCC CIGRE's **T.K. Abdel-Galil, I. El-Amin, I.O. Habiballah**, 15th annual seminar & 11th Exhibition for Electrical Equipment, Abu-Dhabi, UAE, 28 - 30 November 2006.
22. "How Much Does Transmit Correlation Affect the Sum-Rate of MIMO Downlink Channels?" **Tareq Y. Al-Naffouri, Masoud Sharif, And Babak Hassibi**, IEEE International Symposium on Information Theory, Seattle, Washington, July 2006.
23. "Application of Heuristic Algorithms for Multi-user Detection," **H. El-Morra, A. U. Sheikh and A. Zerguine**, ICC 2006, Istanbul, Turkey, June 11-15, 2006.
24. "Adaptive Equalizer Based on a Power-of-Two-Quantized-LMF algorithm," **M. U. Otaru, A. Zerguine, L. Cheded and A. U. Sheikh**, EUSIPCO-2006, Florence, Italy, September 4-8, 2006.
25. "A Particle Swarm Algorithm For Optimal Power Flow Problem", **A. Mantawy and M. S. Al-Ghamdi**, proceedings of the 6th IASTED international conference European power and energy systems, Rhodes, Greece, pp.202-206, June 26-28, 2006.
26. "Fundamentals of Multimodal Biometrics (Invited)", **M. Deriche**, 3rd IS3PA Conference, Algeria, July 2006
27. "Introduction to Biometrics Systems" (Tutorial), **M. Deriche**, WORLCOMP 2006, USA, July 2006
28. "A News Algorithm for Speaker Identification using the DS Theory of Evidence", **I. Naseem & M. Deriche**, IPCV 2006, USA, July 2006
29. "A new implementation of the ICP algorithm for 3D surface registration using a comprehensive look up matrix", **A. Almhdi, C. Léger, M. Deriche, R. Lédée**, EUSIPCO 2006, Italy, September 2006.
30. "External electric and magnetic field assessment on the general public near a 132 KV transmission line right of way," **M. M. Dawoud, C. A. Belhadj, I.O. Habiballah, T. K. Abdel-Galil, and M. Arif Abdul-Majeed**, 4th International Workshop on Biological Effects of EMFs, Crete, Greece, Proc. Vol.1, pp. 645-652, 16-20 October, 2006.
31. "A Discrete Harmonic,Potential Field for Optimum Point-to-Point Routing on a Weighted Graph", **Ahamd A. Masoud**, Proceedings of the 2006 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, Beijing-Chnia, October 9-15, 2006
32. "A Delay-tolerant, Potential field-based, Network Implementation of an Integrated Navigation System," **Rachana Gupta, Ahmad A. Masoud, Mo-Yuen Chow**, Proceedings of the 2006 IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China, October 9-15, 2006.

33. “Agile, Steady Response of Inertial, Constrained Holonomic Robots Using Nonlinear, Anisotropic Dampening Forces,” **Ahmad A. Masoud**, CDC 2006, 45th IEEE Conference on Decision and Control, Manchester Grand Hyatt, San Diego, California, USA, December 13-15, 2006.
34. “A Network based, Delay-tolerant, Integrated Navigation System for a differential drive UGV using Harmonic Potential Field,” **Rachana Gupta Ahmad A. Masoud, Mo-Yuen Chow**, CDC 2006, 45th IEEE Conference on Decision and Control, Manchester Grand Hyatt, San Diego, California, USA, December 13-15, 2006.
35. “Kino-Dynamic, Harmonic, Potential-based Motion Planning, **Ahmad A. Masoud**, Proceedings of the 2006 IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing-China, October 9-15, 2006.
36. “Automatic Translation of Arabic Text to Arabic Sign Language using computers”, **M. Mohandes**, ICGST International Conference on Artificial Intelligence and Machine Learning (AIML-06), Sharm El Sheikh, **Egypt, 13 - 15 June 2006**
37. "Online Development of Digital Logic Design Course", **M. Mohandes, M. Dawoud, A. Abul Hussain, S. Al Amoudi**, 2nd IEEE International Conference On Information & Communication Technologies: From Theory To Applications, Umayyad Palace, Damascus, Syria, April 24 - 28, 2006
38. “Enhancing Electrical Engineering Courses by Online development”, **M. Mohandes. Dawoud, Abul Hussain, Balghonaim, Deriche**, International Conference on Engineering, Education (ICEE2006), Buraida, Saudi Arabia, 25-27 March 2006.
39. “RFID Technology to Improve Pilgrim Services” **M. Moahndes, M. Koussa**, The First Scientific Symposium for Madinah Munawara Research, Taiba University, 15-16 March, 2006.

Mechanical Engineering Department

1. "Potential of using Plate and Frame Heat Exchangers in Residential Air Conditioners", **Mokheimer, E. M. A. and Said S.A.M**, Accepted for publications in the Fourth Saudi Technical Conference & Exhibition (STCEX2006), to be held in Riyadh, Saudi Arabia, December 02-06, 2006
2. "Environmental Degradation of Flexural and Fracture Properties of Glass/Vinyl Ester Filament Wound Pipes", **Gasem, Z.M.**, Presented at the 5th Asian-Australasian Conference on Composite Materials (ACCM-5), Hong Kong, November 2006,

Petroleum Engineering Department

1. "Cased-Hole Formation Resistivity (CHFR) Technique Improves Hydrocarbon Saturation Monitoring in Developed Reservoirs," **Hamada, G. M.**, SPE # 104472 presented at 2006 Eastern Regional Meeting, Canton, USA, October 11 – 13, 2006.

Aerospace Engineering Department

1. "Geometry Effects on Critical Conductivity Ratio and Wall Thickness For Conjugate Natural Convection in Eccentric Annuli", **Maged A. I. El-Shaarawi, Esmail M. A. Mokheimer, Ahmad Jamal**, presented at the 13th International Heat Transfer Conference, Sydney, Australia, , Aug. 2006 (1427H).

College of Sciences

Chemistry Department

1. "Participation of Propargyl Moiety in Butler's Cyclopolymerization Process", oral presentation, **Hasan Al-Muallem**, "World Polymer Congress MACRO: 41st International Symposium on Macromolecules", 16-21 July 2006, Rio de Janeiro, Brazil.
2. "Thermodynamics of Solution of Non-mesomorphic Solutes in the p-n-hexyl-p'-cyanobiphenyl (6CB) Liquid Crystal Solvent"; an oral presentation, **G. A. Oweimreen**, Abstracts of the 12th International Symposium on Solubility Phenomena and Equilibrium Processes at the TU Bergakademie Freiberg, July 23 – 28, 2006, Freiberg, Germany.
3. "Utilization of Satellite images in monitoring spatial and temporal changes of algal mats along the Red Sea shoreline", oral presentation, **Assad Al-Thukair**, International Seminar "Coastal Water Management Sustainable Use of Marine Resources", 14-16 November 2006, Dakar, Senegal.

Earth Sciences Department

1. "Estimation of permeability from wireline logs in a Middle Eastern carbonate reservoir using fuzzy logic", **Abdulrahman, A., Sabakhi, E., Ahmed, A., Vantala, A., Raharja, I. & Korvin, G.** , SPE Paper # 105350 MEOS Conference, 11-14 March, 2007.

Mathematical Sciences Department

1. "On a class of elliptic free boundary problems" **A. Lyaghfour**, AIM's Sixth International Conference on Dynamical Systems, Differential Equations and Applications, University of Poitiers, France, June 2006.
2. "Coincidence points of some nonlinear maps with applications", **A.R. Khan**, Summer Conference in Mathematics, Lahore University of Management Sciences (LUMS), Pakistan, July 29-30, 2006.
3. "Convergence of random Ishikawa iteration scheme for two operators", **A.R. Khan**, 7th International Pure Mathematics Conference, Islamabad, Pakistan, August 5-7, 2006.
4. "Random coincidence points of multivalued contractive random operators", **A.R. Khan**, In proceedings of the 4th International Conference on Nonlinear Analysis and Convex Analysis. Okinawa, Japan, 1-12.
5. "The effects of promotion exams in preparatory year program on students performance in first calculus course at university", **M.H. Omar and B. Yushau**, 3rd International Conference on the Teaching of Mathematics at the undergraduate level, ICTM: Istanbul, Turkey, July 2006.
6. "A variant of gauss quadrature rule", **M.A. Bokhari**, ICNAAM-2006, Greece, September 15-19, 2006.

Physics Department

1. "Air Gap Effect on Mammography Image Quality", **Maalej N, Al Kafi M A, Nobah A., Naqvi A A.**, World Congress of Medical Physics and Biomedical Engineering, Sept 2006, Seoul, Korea.
2. "Comparison of Five Different Methods for Obtaining the Modulation Transfer Function of a Diagnostic X-ray Machine", **Al-Dhukair A, Maalej N.**, World Congress of Medical Physics and Biomedical Engineering, Sept 2006, Seoul, Korea.
3. "Organ Dosimetry for a Worker Standing Under a 132 kV Power Line", **Maalej N.**, **Abdel-Galil T. K.**, **Abdul-Majeed M. Arif.**, and **Habiballah I. O.**, World Congress of Medical Physics and Biomedical Engineering, Sept 2006, Seoul, Korea.
4. "Photoneutron intensity variation with field size around radiotherapy linear accelerator 18-MeV X-ray beam", **H. Al-Ghamdi, Fazal-ur-Rehman, M. I. Al-**

- Jarallah and N. Maalej**, 23rd International Conference on Nuclear Tracks in Solids (23 ICNTS), Sep 2006. Beijing, China.
5. “Thermal Neutron Dose Calculation in Synovium Membrane for BNCS”, **Khalid Abdallah, Naqvi A. A., Maalej N. and El-Shaha B.** Proceedings 12th International Conference on Neutron Capture Therapy, Takamatsu, Kagawa, Japan, Oct 2006, 385-388.
 6. “Thermal Neutron Dose Calculations in a Brain Phantom from $^7\text{Li}(p,n)$ Reaction Based BNCT Setup”, **B. A. Elshahat, A. A. Naqvi, N. Maalej and Khalid Abdallah.** Proceedings 12th International Conference on Neutron Capture Therapy, Oct 2006, Takamatsu, Kagawa, Japan, 381-384.
 7. “Comparative Study of short and long term Indoor Radon Measurements”, **M. I. Al-Jarallah, Fazal-ur-Rehman and Khalid Abdalla,** 23rd International Conference on Nuclear Tracks in Solids, Beijing, China, 11-15 Sept. 2006.
 8. “Indoor Radon Survey in Sana’a and Hodeidah Cities of Yemen” Khayrat, **M. I. Al-Jarallah and Fazal-ur-Rehman,** 23rd International Conference on Nuclear Tracks in Solids.
 9. “Photoneutron Intensity Variation with Field Size around Radiotherapy Linear Accelerator 18-MeV X-ray Beam” H. Al-Ghamdi, **Fazal-ur-Rehman, M. I. Al-Jarallah and N. Maalej,** 23rd International Conference on Nuclear Tracks in Solids.
 10. “Optical emission characteristics of glow discharges in Ar-O₂ and He-O₂ gas mixtures”, **A. M. Al-Jalal and M. A. Khan,** 22nd Symposium on Plasma Physics and Technology, Prague, Czech Republic, June 26-29, 2006.
 11. “Photoacoustic and laser induced breakdown spectrometry and its applications in the field of environment”, S. Abdulmajeed, T. Hussain, **M. A. Gondal and Z.H. Yamani,** 3rd Educational Scientific Gathering in the Eastern Province/ Physics Festival, Dhahran, May, 2006, Saudi-Arabia.
 12. “Global Environmental Problems and need for advanced laser based analytical techniques”, **M.A. Gondal,** 9th Symposium on analytical and environmental Chemistry, Baragali, Pakistan (July 24-26, 2006).
 13. “Neutron dose calculations for an accelerator based BNCT setup”, **El-shahat B. A., Naqvi A. A., Maleej N.,** Proceeding of “Radchem 2006- 15th Radiochemical Conference held at Marianske Lazne, Czech Republic on 23-28 April 2006.
 14. “Synthesis and Properties of Nanostructured ZnO” **A. Mekki, N. Tabet,** International Workshop BIAMS-06, Saint Petersburg, Russia, 11-14 June 2006.
 15. “The Use of Instructional Technology in Teaching Freshman Physics Course”, **A. Mekki,** Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.

16. “XPS Studies of Vanadium-Phosphate Glasses”, **G.D. Khattak and A. Mekki**, Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.
17. “Students’ Difficulties with Kinematics Graphs in Introductory Physics Courses”, **Z. Khiari and A. Mekki**, Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.
18. “Low Temperature DC Magnetron Sputtering Synthesis of ZnO Thin Films”, **M. Hezam, N. Tabet and A. Mekki**, Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.
19. “Performance Tests of a $^7\text{Li}(p,n)$ Reaction Based Moisture Measurements Set up – A Monte Carlo Study”, **A.A. Naqvi, M.S. Abdelmonem**, Hanan Al-Ghamdi and Ghada Al-Misned, Presented at 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.
20. “Thermal Neutron Flux Optimization of a PGNA Set up Using a Portland Cement Sample”, **A.A. Naqvi and M.M. Nagadi**, Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.
21. “Neutron Capture Therapy Studies at KFUPM”, **Naqvi, A.A., Nabil Maalej, Bassam El-Shehat and Khalid Abdallah**, Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.
22. “Prompt Gamma Ray Yield Calculation for Fly Ash Cement Samples”, **A. Naqvi, M.M. Nagadi, O.S.B. Al-Amoudi**, and M. Maslehuddin, Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.
23. “Influence of Ambient Gas Pressure on Performance of Laser-Induced Breakdown Spectrometry for Planetary Science Applications”, **M.A. Gondal**, T. Hussain, and **Z.H. Yamani**. Presented at the 3rd Saudi Physical Society Meeting, KACST, 18-20 December 2006, Riyadh, Saudi Arabia.

College of Computer Sciences and Engineering

Information & Computer Science

1. “Techniques for Customizing Patient’s Diagnosis User Interface”, **Ejaz Ahmed**, 11th World Congress on Internet in Medicine, MedNet2006, pp.15 PubMed, November 2006.
2. “Design Structural Stability Metrics and Post-Release Defect Density: An Empirical Study”, **Mahmoud Elish and David Rine**, Proc. the 30th Annual International Computer Software and Applications Conference (COMPSAC’06), Sep. 2006.
3. “Arabic Character Recognition using Modified Fourier Spectrum (MFS).” , **Sabri A. Mahmoud and Ashraf S. Mahmoud**, Proceeding of the International Conference Geometric Modelling & Imaging-New Trends, 5-6 July, 2006, London, UK, Page(s) 155 - 159.
4. “A Novel Corner Detector Approach using Sliding Rectangles” **Masood, A. and Sarfraz, M.** (2006), The Proceedings of The 4th ACS/IEEE International Conference on Computer Systems and Applications (AICCSA-06), Sharja, UAE, pp. 621 – 626, IEEE Computer Society Press, USA.
5. “An Analytical Tool to Assess Readiness of Existing Networks for Deploying IP Telephony”, **K. Salah and M. Almashari**, Proceeding of 11th IEEE Symposium on Computers and Communications, IEEE ISCC 2006, Sardinia, Italy, June 27-30, 2006, pp. 302-305.
6. “Computer-Aided Indexing of Historical Manuscripts”, **S.A. Shahab, W. Al-Khatib and S. Mahmoud**, in the Proceedings of the International Conference on Computer Graphics, Imaging, and Visualisation, Sydney, Australia, July 2006.
7. “Performance Comparison of CBT and PIM Multicast Routing Protocols over MPLS Networks,” **N. El-Shenawy, M. El-Drini, M. Fahmy and E. El-Alfy**, IEEE International Conference on Computer Engineering & Systems (ICCES'06), November 2006.

Computer Engineering Department

1. “An All-Digital Clock Frequency Caputring Circuitry For NRZ Data Communications,” **Muhammad E. S. Elrabaa**, Accepted for publication in the 13th IEEE International Conference on Electronics, Circuits and Systems (ICECS 2006), Dec. 2006, Nice, France.
2. “A Portable Clock Recovery Circuit (CRC) For Systems-On-Chip Serial Data Communication,” **Muhammad E. S. Elrabaa**, Accepted for publication in the International Conference on Microelectronics (ICM06), December 2006, Dhahran.
3. “A Digital Clock Re-Timing Circuit for On-Chip Source-Synchronous Serial Links,” **Muhammad E. S. Elrabaa**, Accepted for publication in the International Conference on Microelectronics (ICM06), December 2006, Dhahran.

4. "An Efficient Network-on-Chip Architecture Based on Modified Bidirectional Multi-Stage Interconnection Network (MIN) Topology," **A. Bouhraoua and Muhammad E. S. Elrabaa**, Accepted for publication in the International Conference on Microelectronics (ICM06), December 2006, Dhahran.
5. "A High-Throughput Network-on-Chip Architecture for Systems-on-Chip Interconnect," **A. Bouhraoua and Muhammad E. S. Elrabaa**, Accepted for publication in the International Symposium on System-on-Chip (SOC06), November 2006, Tampere, Finland.
6. "An Evolutionary algorithm to Multi-objective OSPF Weight Setting Problem", **Sadiq M. Sait, Mohammed H. Sqalli, and Mohammed Aijaz Mohiuddin**, the 19th ACS Australian Joint Conference on Artificial Intelligence (AI-2006), Hobart, Tasmania, Australia, December 4-8, 2006.
7. "A High-Speed Self-Timed Carry-Skip Adder", **Alaaeldin Amin**, IEE Proceedings-Circuits, Devices and Systems, Volume 153, Issue 6, December 2006, Pages 574-582
8. "DFT for Controlled-Impedance IO Buffers," **Al-Yamani, A**, 43rd ACM/IEEE Design Automation Conference (DAC'06), San Francisco, CA, July 24-26, 2006
9. "Test Time Reduction through Power Control," **Al-Yamani, A.A.**, IEEE International Design and Test (IDT'06), Dubai, UAE, November 2006.
10. "Performance Analysis of an Error Tolerant Low Power Memory Architecture," **Argyrides, C, J. Mathew, A. Al-Yamani, and D. Pradhan**, IEEE International Design and Test (IDT'06), Dubai, UAE, November 2006.
11. "The Mobile Patient: A Case Study Implementation and Analysis for SNET," **T. R. Sheltami, and A. S. Mahmoud**, the 22nd Biennial Symposium on Communications, May 29 - June 1, 2006 Queen's University, Kingston, ON, Canada, Pages 308-311.
12. "Adaptive Radio Resource Management for Multi-Operator WCDMA Based Cellular Wireless Networks with Heterogeneous Traffic," **Salman A. Al-Qahtani, Ashraf S. Mahmoud, Tarek R. Sheltami, and Mohamed El-Tarhuni**, to appear on the 17th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC'06) September 11-14, 2006, Helsinki, Finland.
13. "H.264 Compression Based Improvement in Hop Count and Power Consumption of MANETs," **Tarek Sheltami and Hafiz M. Asif** to appear The Australian Telecommunication Networks and Applications Conference ATNAC 2006, Australia, December 2006.
14. "Effect of Voice Traffic over MANET using Energy Aware Cluster Based Routing Protocol," **Md. Golam Kaosar and Tarek Sheltami**, to appear The Joint International Conference of TSSA & WSSA 2006, Indonesia, December 8-9, 2006.

Systems Engineering Department

1. “Channel Equalization Using Power-of-Two Quantizer-based Least Mean Fourth Algorithm”, M.U. Otaru, A. Zerguine, and **L. Cheded**, European Signal Processing Conference (EUSIPCO’2006), September 4-8, 2006, Florence, Italy.
2. “Hypertension and Diabetics Electronic Monitoring System”, **M. A. Al-Dajani**, 6th Nordic Conference on e-Health and Telemedicine, August 31–September 1, 2006, Helsinki, Finland.
3. “Strong Stabilization of Time Delay Systems”, **A. W. Saif**, and M. Al-Dhaifallah, The 6th Int’l. Conference on Computational Aspects and Their Applications in Electrical Engineering, September 19-21, 2006, Philadelphia University, Jordan.
4. “Optimal Process Targeting of Multi-components Multi-characteristics Products”, **A. Siddiqui**, M. El-Shafei, and S. O. Duffuaa, Proceeding of the 4th Int’l. Conference on ‘Manufacturing Research (ICMR’06), September 5-7, 2006, Liverpool, England.
5. “Cyclical Staff Scheduling and Workforce Allocation Application for a Call Center”, **K. Ertogral**, Abstract Proceedings of 21st European Conference on Operational Research, July 2006, Reykjavik, Iceland.
6. “Modeling NOx Emission Using Radial Basis Function Networks”, Surajdeen Iliyas Ahmed, and **M. El-Shafei**, Proceedings of the Int’l. Conference on Intelligent Systems & Computing: Theory and Applications (ISYC’06), 2006, Cyprus.
7. “U-Model based Tracker Scheme for MIMO Bilinear Systems”, S. Saad Azhar Ali, and **F. AL-Sunni**, Asian Control Conference 2006, Bali, Indonesia.
8. “Random Quantization: A New Analysis with Applications”, **L. Cheded**, 7th International Conference on Mathematics in Signal Processing, December 18-20, 2006, Cirencester, U.K.

College of Environmental Design

Construction Engineering & Management Department

1. “Comparison of Cluster Analysis and Unsupervised-Learning Neural Networks in Classifying Construction Contractors”, **Ashraf M. Elazouni**, Proceedings of the 1st International Construction Specialty Conference, Canadian Society for Civil Engineering, Calgary, Canada, May 2006.

College of Industrial Management

Finance & Economics Department

1. “Does the Environmental Kuznets Curve exist? An Application of Long-Run Structural Modeling to Saudi Arabia” **Mansur Masih** and **Lurion De Mello**, 1st International Conference on Clean Development Mechanism, Riyadh, Saudi Arabia, September, 2006
2. “Price Dynamics of Crude oil and the Regional Petrochemical Markets” **Mansur Masih** and **Lurion De Mello**, ICFAI International Conference on Business and Finance, Hyderabad, India, December, 2006
3. “Stock Mis-pricing and Corporate Investment Decision”, **Mohammed Al-Zahrani**, Financial Management Meeting (FMA), held on October 13, 2006 at Salt Lake City, Utah, USA.

Department of Management & Marketing

1. "Organizational Learning: What Singapore Firms Perceive as Factors, Strategies and Outcomes", **Yeo, R.K.**, International Conference of Business and Information Singapore, 12-14 July, 2006.
2. "Building Effective Competitiveness in the Arab World." **Oukil, M. Said**, College of Business Administration, University of Kuwait on December 12-13, 2006.

10. BOOKS PUBLISHED AND CONTRIBUTIONS

Mechanical Engineering

1. “Crystallization Kinetics of Polymers,” , **R. Patki; K. Mezghani; P.J. Phillips** chapter 39 in Physical Properties of Polymers Handbook. J.E. Mark, American Institute of Physics, **December, 2006**

Mathematical Sciences Department

1. “Handbook of Differential Equations: Stationary Partial Differential Equations”, Contributed Chapter: *On the Dam Problem* by **A. Lyaghfour**, Edited by M. Chipot and P. Quittner, Elsevier-North Holland. Vol.3, Chapter 6, (2006), 465-552.
2. “Best approximation operator and fixed points of multivalued mappings” **A.R. Khan**, Modern Mathematical Models, Methods and Algorithms for Real World Systems, edited by A.H. Siddiqi, I.S. Duff, O. Christensen, Anshan Tunbridge Wells, U.K., 2007, 293-301.

Physics Department

1. "Essential principle of statistical physics", **I. Nasser**
2. "General physics by examples with multiple choice questions". **I. Nasser**

Information & Computer Science

1. “Computer Graphics, Imaging and Visualization – Techniques and Applications”, **Banissi, E., Sarfraz, M., Huang, M. L., and Wu, Q.** (Eds.), (2006), IEEE Computer Society, USA, ISBN: 0-7695-2606-3.
2. “Geometric Modeling and Imaging – New Trends”, **Sarfraz, M., and Banissi, E.** (Eds.), (2006), IEEE Computer Society, USA, ISBN: 0-7695-2604-7.
3. “Computing Optimized NURBS Curves using Simulated Evolution on Control Parameters”, **Sarfraz, M., Sait, Sadiq M., Balah, M., and Baig, M. H.** (2006), in Applications of Soft Computing: Recent Trends, Series: Advances in Soft Computing, Tiwari, A.; Knowles, J.; Avineri, E.; Dahal, K.; Roy, R. (Eds.), ISBN: 3-540-29123-7, Springer Verlag, 35-44.
4. “Object Recognition using Fourier Descriptors: Some Experiments and Observations”, **Sarfraz, M.**, (2006), in Computer Graphics, Imaging and Visualization – Techniques and Applications, Banissi, E., Sarfraz, M., Huang, M. L., and Wu, Q. (Eds.), ISBN: 0-7695-2606-3, IEEE Computer Society, USA, 281-286.

5. “Object Recognition using Moments: Some Experiments and Observations”, **Sarfraz, M.**, (2006), in Geometric Modeling and Imaging – New Advances, Sarfraz, M. and Banissi, E. (Eds.), ISBN: 0-7695-2604-7, IEEE Computer Society, USA, 189-194.
6. “Curve Fitting with NURBS using Simulated Annealing”, **Sarfraz, M. and Riyazuddin, M.**, (2006), in Applied Soft Computing Technologies: The Challenge of Complexity, Series: Advances in Soft Computing, A. Abraham, B. De Baets, M. Köppen and B. Nickolay (Eds.), ISBN: 3-540-31649-3, XXXIII, Springer Verlag.

Architecture Department

1. “Changing Trends in Architectural Design Education” **Jamal Al-Qawasmi and Guillermo Vasquez de Velasco** (eds) (2006) 9957-8602-0-8.

11. TECHNICAL REPORTS, FUNDED PROJECTS AND PATENTS

College of Engineering

Civil Engineering Department

1. "Determination of Chloride Threshold Value and Service Life Estimation of RC Structures with Hadeed-Sabic Rebars", CER 2279, July 2006.
2. "Optimizing of Student Bust Transport in KFUPM Campus", **S. Al-Senan**, M. Ndiaye, J. Qawasmi, A report presented to the Office of the Supervisor of the Financial and Administrative Affairs, 24 July 2006.
3. "Increasing Enrolment in Graduate Programs", **Al-Shayea**, et al., Contributing to the progress report; one of the KFUPM Strategic Plan Studies, the Office of Planning & Quality, KFUPM, August 2006.
4. "Development of a Software to Evaluate Liquefaction Potential of Soils", **Al-Shayea**, Final Report for the Project for Innovation Grants Scheme (IGS-22), College of Engineering Sciences, KFUPM, March 20, 2006 and August 12, 2006.
5. Contributing to the progress report on Diagnosis – AAFAQ, **Al-Shayea**, et al., August 2006.
6. "KFUPM Traffic Manual", **N. Ratrou** et al., 4th edition, KFUPM Press, Saudi Arabia, 2006.

Chemical Engineering Department

1. "Weatherable, mechanically stable polypropylene based date palm fiber reinforced composites", **Abu-Sharkh, B. F.**, U.S. Pat. Appl. Publ. (2006), 11 pp.

Electrical Engineering Department

1. "Analysis of Bit-Interleaved Coded Modulation (BICM) Over Wireless Channels," **Salam Zummo**, Final Report, Fast-Track Project, KFUPM, September 2006.
2. "Rate-Compatible Low-Density Parity Check Codes for Wireless Networks," **Salam Zummo**, Adnan Landulsi and Faisal Zaheer, Final Report, Fast-Track Project, KFUPM, September 2006.
3. "Radiation pattern control of surface reflector antennas by controlling the radiator surface impedance", **Essam Hassan and Hassan Ragheb**, Fast track project, KFUPM, June 2006.
4. "Scattering of electromagnetic waves by N dielectric coated metallic strips",

Hassan Ragheb and Essam Hassan, KFUPM fast track final report, June 2006

5. "Preliminary Modeling for a New Electricity Tariff Structure; **M. H. Shwehdi**, A Case Study Saudi Arabia, 2006.
6. "Convergence and Steady-State Analysis of the Normalized Least Mean Fourth Algorithm: Application to Mobile Communications," **A. Zerguine and A. U. Sheikh**, Final Report, Fast Track 2004/2, July, 2006.
7. "Adaptive Suppression of Multi-user Interference in a 3G W-CDMA System," **A. U. Sheikh and A. Zerguine**, Final Report, KACST, AT-21-58, November, 2006.
8. "Translation of Arabic Text to Arabic Sign Language Using Computers", **M. Mohandes**, Prince Salman Center for Disability Research, Final Report, May 2006.
9. "Data Security Using Smart Cards" **M. Mohandes, T. Halawani, A. Balghonaim, M. Kassas**, KACST Project, December 2006.
10. "An Integrated System for Arabic Sign Language Recognition" **M. Mohandes, T. Halawani, S. Al-Baiyat, J. Okakah**, KACST Project, June. 2006.
11. "Arabic Sign Language Recognition Using an Instrumented Glove and Support Vector Machines" **M. Mohandes, T. Halawani, S. Al-Baiyat, J. Okakah**, Prince Salman Center for Disability Research, June. 2006.
12. "A New Feature Extraction Algorithm using Mutual Information with Application to Arabic Speech Recognition", **M. Deriche, A. Balghonaim**, KACST Report, September, 2006.
13. "Development of an Intelligent Nondestructive Testing tool to detect and identify defects found in petrochemical plants," **Yamani, A., Deriche, M.**, 2nd detailed Report KACST funded project AR 106-24, September 24, 2006.
14. "Improving the Lightning Performance and Protection of Electric Power Transmission Distribution Lines in Saudi Arabia", **M. H. Shwehdi**, FINAL REPORT KACST PROJECT No. AR-22-09, submitted November 2006.
15. "EE 303 Electronics II Online Course Development," **M.Kassas, H. Al-Zaher, A.E. Hussein, A. Abul Hussain, N. Tasadduq, U. Johar and A. Bashir**, Final Report, July 2006.

College of Sciences

Chemistry Department

1. "Bacterial diversity of cyanobacterial mat degrading petroleum compounds at elevated salinity and temperatures", Raeid M.Abed, **Al-Thukair, A. A.**, and Dirk de Beer, FEMS Microbiol Ecol, 57 (2006), 290-301.

Mathematical Sciences Department

1. "Branching Processes with Continuous Space of States", **I. Rahimov** and **W. Al-Sabah**, Technical Report# 355, (May 2006).
2. "Some Distributional Results in Two Correlated Chisquare Variables", **A.H. Joarder**, Technical Report# 356, (September 2006).
3. "Semigroups of Mappings", **J.M. Howie**, Technical Report# 357, (September 2006).
4. "On Some Generalizations of the Hat Problem and Transformation Semigroups", **A. Laradji** and **A. Umar**, Technical Report# 358, (October 2006).
5. "On the Multivariate T-Distribution and Some of its Applications", **B.M.G. Kibria** and **A.H. Joarder**, Technical Report# 359, October 2006.
6. "Investigation of an Initial Inverse Problem by Using Hyperbolic Heat Equation with Bessel Operator and A Total Variation Method", **Khalid Masood** and **M. T. Mustafa**, Technical Report# 360, October 2006..
7. "Regularization of an Initial Inverse Problem by Using Smoothing Splines and Hyperbolic Heat Equation with Bessel Operator", **Khalid Masood** and **M. T. Mustafa**, Technical Report# 361, October 2006.
8. "Fully Coprime Comodules and Fully Coprime Corings", **J.Y. Abuhlail**, Technical Report# 362, October 2006.
9. "Skewness and Kurtosis of Bivariate Distributions", **A.H. Joarder**, Technical Report # 363, (November 2006).
10. "On the Two-sample t-Test and Simple Linear Regression", **M.H. Omar** and **B. Yushau**, Technical Report# 364, December 2006.

College of Computer Science & Engineering

Information & Computer Science Department

1. "Computerized Adaptive Testing Methodologies," **E. El-Alfy**, Technical Report, KFUPM-CCSE-2006-001/ICS, September 2006.

Computer Engineering Department

1. "A Tutorial on: Digital Integrated Circuits Testing" **Al-Yamani, A**, Computer Science Department, University of Bristol, Bristol, UK, June 22, 2006
2. "A Tutorial on: Logic Analysis and Synthesis," **Al-Yamani, A**, Computer Science Department, University of Bristol, Bristol, UK, July 14, 2006

3. "Energy-Delay Efficient Test" Center for Reliable Computing," **Al-Yamani, A**, Stanford University, Stanford, CA, USA, July 24, 2006
4. "Systematic Scan Reconfiguration", **Al-Yamani, A**, School of Electronics and Computer Science, University of Southampton, Southampton, UK, August 2, 2006

Systems Engineering Department

1. "Hybrid ANN/HMM Models for Arabic Speech", M. El-Shafei, Research Project Final Report, FT/2004/06, September 2006

12. SEMINARS OFFERED BY KFUPM FACULTY

Chemical Engineering Department

1. Speaker : Ghazi Hamed Al-Utaibi
 Title : Investigations of Mixing in Mechanically Stirred Tanks
 Date : November 22, 2006

Electrical Engineering Department

1. Speaker : **Sheikh S.I.**
 Title : Circularly Polarized Micro strip Phase-shifters
 Date : 27th September, 2006
 Venue: : EE Department, KFUPM, Dhahran, KSA
2. Speaker : **Sheikh S.I.**
 Title : Interactive and Animated Lecture Notes: Ways and Means
 Date : 29th July, 2006
 Venue: : Ahsanullah University of Science and Technology, Dhaka, Bangladesh
3. Speaker : **Salam Zummo**
 Title : Error Probability of Bit-Interleaved Coded Modulation (BICM) in Wireless Environments
 Date : November, 2006
 Venue: : EE Department, KFUPM, Dhahran, KSA
4. Speaker : **M. Kassas**
 Title : Programmable Logic Controllers and their applications
 Date : December 3-4, 2006
 Venue: : EE Department, KFUPM, Dhahran, KSA
5. Speaker : **Alzaher, H.**
 Title : Electronic Design approaches
 Date : 2006
 Venue: : Advanced Electronic Company, Riyadh, KSA
6. Speaker : **Tareq Y. Al-Naffouri**
 Title : How Much Does Transmit Correlation Affect the Sum-Rate of MIMO Downlink Channels?
 Date : August 22, 2006
 Venue: : Intel Corporation Research, Santa Calara, CA, USA
7. Speaker : **Tareq Y. Al-Naffouri**
 Title : Broadcasting Data to Multiple User Groups: An Information Theoretic Investigation
 Date : July 21, 2006
 Venue: : EE Department, California Institute of Technology,

USA

8. Speaker : **Tareq Y. Al-Naffouri**
 Title : A Unified View of Mean-Square Analysis of Adaptive Filters
 Date : November 20, 2006
 Venue: : KFUPM, Dhahran, KSA
9. Speaker : **Mohandes, M.**
 Title : RFID Wristband Tag for Pilgrim Identification
 Date : November 7, 2006
 Venue: : KFUPM, Dhahran, KSA
10. Speaker : **Mohandes, M.**
 Title : An Integrated System for Communication with the Deaf and Hearing Impaired.
 Date : December 4, 2006
 Venue: : KFUPM, Dhahran, KSA
11. Speaker : **M. Deriche**
 Title : Fundamentals of Multimodal Biometrics
 Date : July, 2006
 Venue: : 3rd ISPA Conference, Algeria
12. Speaker : **M. Deriche**
 Title : Introduction to Biometrics Systems (Tutorial)
 Date : July, 2006
 Venue: : WORLCOMP 2006, USA
13. Speaker : **I. Naseem and M. Deriche**
 Title : A New Algorithms for Speaker Identification using DS Theory of Evidence
 Date : July 2006
 Venue: : IPCV 2006, USA
14. Speaker : **M. Deriche**
 Title : Fractals in Engineering (Invited)
 Date : 2006
 Venue: : Applied Math Day, KFUPM, Dhahran, KSA

Invited Seminars

1. "Silencing Mobile Phones : STC could be a leader" **Dr. Ali Muqaibel** King Abdul-Aziz Compound, Riyadh, Tuesday , Dec. 19, 2006
2. "Ultra wideband : A Competing Wireless Technology" **Dr. Ali Muqaibel** King Abdul-Aziz Compound, Riyadh, Tuesday , Dec. 19, 2006

Mechanical Engineering Department

1. Speaker : Dr. Bekir S. Yilbas
 Topic : Laser Nitriding of Ti6al4V Alloy : Metallurgical
 Properties
 Date : September 12, 2006

2. Speaker : Dr. A. Al-Sarkhi
 Topic : Effect of Dra Reducing Polymer on Annular Flow Patterns
 of Gas and Liquid in a Horizontal Pipeline
 Date : September 13, 2006

3. Speaker : Shoaib A. Quraishi & Ishaq Mirza
 Topic : Using E-Resources @ KFUPM Library
 Date : September 19, 2006

4. Speaker : Dr. Shafique Khan
 Topic : Multi-Scale Discrete Dislocation Plasticity Analysis : Theory
 and Applications
 Date : October 31, 2006

5. Speaker : Mr. Mohammed Omer
 Topic : Flow Induced Vibrations in Pipe Junctions : An
 Uncoupled Approach
 Date : November 07, 2006

6. Speaker : Dr. M. Tahir Mustafa
 Topic : Surface Defects Detection Using Smoothing Splines
 Date : November 14, 2006

7. Speaker : Mr. Bader M. Al-Jarallah
 Topic : Effect of Sensitization on Corrosion Fatigue Crack
 Propagation of 304 Stainless Steel in 3.5% NaCl
 Date : November 21, 2006

8. Speaker : Mr. Ahmad Sorour
 Topic : High Temperature Corrosion of Heat Resistant Nickel-
 Based Alloys in Carburizing Environments
 Date : November 21, 2006

9. Speaker : Mr. Mazhar Azim
 Topic : Fluid Dynamic Characteristics in Branch Pipe
 Connections
 Date : November 28, 2006

10. Speaker : Mr. Fadi Al-Bedoor
 Topic : Application of Wavelet Techniques to Vibration Analysis
 of Rotating Machinery
 Date : November 28, 2006

11. Speaker : Dr. Numan Abu-Dheir
Topic : The Effect of Mold Vibration on the Solidification of Aluminum Alloys Castings
Date : December 05, 2006
12. Speaker : Mr. Nadhir I. Al-Nasri
Topic : Assessing the remaining Strength of Corroded Pipelines
Date : December 12, 2006

Finance & Economics Department

Prof. Mansur Masih

1. Speaker : Prof. Mansur Masih (as the holder of Bumiputra-Commerce Bank Chair Professor of Finance and Banking)
Title : Recent and Ongoing Advances in Econometric Research Methodology in Finance and Economics
Date : July-August 2006
Venue : Northern University of Malaysia, Malaysia.
2. Speaker : Prof. Mansur Masih
Title : Developments in Econometric Research Methodology for Applied Research
Date : July 28, 2006
Venue : National University of Malaysia, Malaysia.
3. Speaker : Prof. Mansur Masih
Title : Does the Environmental Kuznets Curve Exist? An Applications of Long-Run Structural Modeling to Saudi Arabia
Date : November 27, 2006
Venue : College of Industrial Management, KFUPM

Prof. M.A. Ramady

1. "The Emerging Sino-Saudi Energy Alliance". Global Dialogue and the China Institute of International Studies, Beijing, October, 2006.
2. "Saudi Arabia Private Sector Comes of Age: The Economic Offset Program as a Source of Downstream Petrochemical Technology Transfer." 12th Annual Conference on Development of Polyolefin, Houston, Sept. 2006.
3. "The Saudi Arabian Economy: Overview, Globalization, Multinationals And Joint Ventures," Saudi Aramco JV Forum Nov. 2006.

Department of Management & Marketing

1. Speaker : Dr. M. Said Oukil
 Topic : A World of Innovation
 Date : September 13, 2006

Chemistry Department

1. Speaker : Dr. Wolfgang Forner
 Title : Nonlinear Quasiparticles on Polyparaphenylene
 Date : September 26, 2006
2. Speaker : Dr. Ghassan Oweimreen
 Title : Solution Thermodynamics of Nonmesomorphic Solutes in a Liquid Crystal Using GLC
 Date : October 3, 2006
3. Speaker : Mr. Nemr Mehanna
 Title : Advanced Plasma Atomic Emission Techniques and Applications
 Date : November 28, 2006
4. Speaker : Mr. Taufiq Abdo Saleh
 Title : In Situ Monitoring Using Remote Sensing
 Date : December 5, 2006

Earth Sciences Department

1. Speaker : Dr. Khalid Ramadhan (KFUPM ESD)
 Title : Distribution of diagenetic alterations in Upper Jurassic shoreface deposits, NW France
 Date : November 07, 2006
2. Speaker : Dr. Zulfiqar Ahmed (KFUPM ESD)
 Title : Volcanoes of Taba, NW Saudi Arabia
 Date : November 28, 2006
3. Speaker : Dr. Abdullatif Al-Shuhail (KFUPM ESD)
 Title : Ground Penetrating Radar, Principles and Applications
 Date : December 05, 2006

Seminars by Outside Speakers

1. Speaker : Dr. Jan Mrlina (Geoph. Inst. of Czech. Acad. Sci., Prague)
 Title : Monitoring fluids in reservoirs by repeated gravity surveys
 Date : September 19, 2006
2. Speaker : Dr. Wail Musa (Schlumberger Carbonate Res. Ctr., Dhahran)
 Title : Design of explicit depth wavefield extrapolators using vector space projections
 Date : September 26, 2006
3. Speaker : Mr. Emmanuel Bize (Schlumberger Carbonate Res. Ctr., Dhahran)
 Title : Reservoir rock typing and electrofacies types, a core and log approach to characterize reservoirs
 Date : November 14, 2006
4. Speaker : Dr Jim Wright (Memorial University of Newfoundland, Canada)
 Title : Exploration Seismic research at Memorial University: Petroleum and Minerals
 Date : November 21, 2006
5. Speaker : Dr. Kassem Ghorayeb (Schlumberger Carbonate Research Center, Dhahran)
 Title : Thermal diffusion in hydrocarbon reservoirs: Impact on compositional variation
 Date : December 12, 2006

Mathematical Sciences Department

Lecturers/Seminars by Math Faculty:

1	Speaker Title Date	: : : :	Dr. A. Lyaghfour On the Continuity of the Free Boundary in a Class of Elliptic Problems with Neumann Boundary Condition. Sunday, September 24, 2006
2	Speaker Title Date	: : : :	Prof. Salim Messaoudi General Decay in Viscoelastic Damped Equations Sunday, October 1, 2006
3	Speaker Title Date	: : : :	Dr. Kassim Mustapha A Numerical Solution for Some Fractional Partial Differential Equations Sunday, October 8, 2006
4	Speaker Title	: :	Prof. F.D. Zaman Earthquakes and Seismic Waves

	Date	:	Sunday, November 5, 2006
5	Speaker	:	Dr. Anwar Joarder
	Title	:	Norms of Spherical Distributions
	Date	:	Sunday, November 12, 2005
6	Speaker	:	Prof. Asghar Qadir (Adjunct Prof. KFUPM)
	Title	:	Geometric Methods for Differential
	Date	:	Sunday, November 19, 2006
7.	Speaker	:	Prof. Asghar Qadir (Adjunct Professor)
	Title	:	Approximate Symmetries and Conservation Laws
	Date	:	Tuesday, November 28, 2006
8.	Speaker	:	Dr. Khalid A. Al-Shammari
	Title	:	Filippov's Operator and Some of its Properties in R^n
	Date	:	Sunday, December 10, 2006

Math Education Seminars

1.	Speaker	:	Dr. Rajai Alassar
	Title	:	Parametric Equations
	Date	:	Tuesday, October 31, 2006
2.	Speaker	:	Prof. Asghar Qadir (Adjunct Prof. KFUPM)
	Title	:	Directions for Ph.D. Programmes in Mathematics
	Date	:	Tuesday, November 21, 2006
3.	Speaker	:	Dr. Muhammad Yousuf
	Title	:	Test Generating Demonstration for Calculus Courses
	Date	:	Tuesday, November 28, 2006

Lectures/Seminars by outside speakers

1.	Speaker	:	Dr. Abdulwahab A. Abokhodair
	Title	:	Numerical Tools for Geophysical Computations Semi-Automatic Differentiation (SD)
	Date	:	Sunday, October 29, 2006
2.	Speaker	:	Prof. Tamas Rapcsák (<i>Computer and Automation Research Institute, Hungarian Academy of Sciences</i>)
	Title	:	Sectional Curvatures in Nonlinear Optimization
	Date	:	Sunday, November 26, 2006
3.	Speaker	:	Prof. Tamas Rapcsák (<i>Computer and Automation Research Institute, Hungarian Academy of Sciences</i>)
	Title	:	Mechanical Equilibrium Problems and Equilibrium Systems
	Date	:	Sunday, December 3, 2006

Research (StaR) Group Seminar

1.	Speaker Title Date	: : :	Dr. Anwar H. Joarder A Comparison and Contrast of Some Methods for Sample Quartiles Tuesday, September 26, 2006
2.	Speaker Title Date	: : :	Dr. Ibrahim Rahimov Functional Limit Theorems for Branching Processes and Possible Applications Tuesday, October 3, 2006
3.	Speaker Title Date	: : :	Dr. Anwar H. Joarder Some Insights into Statistical Independence Tuesday, October 10, 2006
4.	Speaker Title Date	: : :	Dr. Abdullahi Umar A Remark About Independent Events Tuesday, November 14, 2006

DERL (Differential Equations Research Lab)

1.	Speaker Title Date	: : :	Dr. Nasser-eddine Tatar Critical Exponent for the Fractional Telegraph Equation Tuesday, September 26, 2006
2.	Speaker Title Date	: : :	Dr. A. Boucherif Positive Solutions of Second Order Boundary Value Problems Tuesday, November 7, 2006

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

October–December 2006

(Seminars given by the following faculty members)

1.	Speaker Title	: :	Dr. A. Mimouni Ratliff-Rush Ideals in a Noetherian Ring (I)
2.	Speaker Title	: :	Dr. A. Mimouni Ratliff-Rush Ideals in a Noetherian Ring (II)
3.	Speaker Title	: :	Dr. J. Abuhlail Finitely Generated n -Tilting Modules
4.	Speaker Title	: :	Dr. J. Abuhlail Generalized n -Tilting Modules
5.	Speaker Title	: :	A. Mimouni On the Integral Closure of Idelas (I)
6.	Speaker Title	: :	A. Mimouni On the Integral Closure of Idels (II)
7.	Speaker Title	: :	Dr. J. Abuhlail Open Problems in Tilting Theory (I)
8.	Speaker Title	: :	Dr. J. Abuhlail Open Problems in Tilting Theory (II)

Conferences out side KFUPM:

7. "On a class of elliptic free boundary problems" A. Lyaghfour, AIM's Sixth International Conference on Dynamical Systems, Differential Equations and Applications, University of Poitiers, France, June 2006.
8. "Coincidence points of some nonlinear maps with applications", A.R. Khan, Summer Conference in Mathematics, Lahore University of Management Sciences (LUMS), Pakistan, July 29-30, 2006.
9. "Convergence of random Ishikawa iteration scheme for two operators", A.R. Khan, 7th International Pure Mathematics Conference, Islamabad, Pakistan, August 5-7, 2006.
10. "Random coincidence points of multivalued contractive random operators", A.R. Khan, In proceedings of the 4th International Conference on Nonlinear Analysis and Convex Analysis. Okinawa, Japan, 1-12.
11. "The effects of promotion exams in preparatory year program on students performance in first calculus course at university", M.H. Omar and B. Yushau, 3rd International Conference on the Teaching of Mathematics at the undergraduate level, ICTM: Istanbul, Turkey, July 2006.
12. "Commutative rings and modules", S. Kabbaj, Conjecture cortona conference, Rome, Italy, June 4-10, 2006.
13. "A variant of gauss quadrature rule", M.A. Bokhari, ICNAAM-2006, Greece, September 15-19, 2006.

Research Papers Presented at Conferences.

3. "A variant of gauss quadrature rule", M.A. Bokhari, Proceedings of ICNAAM-2006, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, Greece, September 15-19, 2006.

Physics Department

- 1) "Environmental problems in Pakistan and advanced optical techniques", **M.A. Gondal**, NESCOM, Islamabad, Pakistan, 24th August, 2006.
- 2) "Laser Desulfurization of Crude Oil", **M.A. Gondal**, Saudi Aramco, 18 November, 2006.
- 3) "Future Nuclear Energy" **M.I. Al-Jarallah**, Teachers College Dammam, 26. Nov. 2006.
- 4) "Achievements of Muslims in the field of Astronomy" **A. F. Salem**, SCITECH, 9 Ramadhan 1427 H.
- 5) "Nanotechnology and its possibilities", **N. Tabet**, Peer Group Leadership Training Camp, 8th September, 2006, Khobar.

- 6) “What is Nanotechnology?” **N.Tabet**, SciTech, Khobar, 12 Oct. 2006.
- 7) “From Nuclear to Nano-technology”, **N. Tabet**, Teachers College, Dammam, 27th November, 2006.
- 8) “Superconductivity and its Application”, **K.A. Ziq**, SciTech, Al-Khobar, 28th September 2006.
- 9) “The Physics Medicine Relationship”, **Anan M. Al-Karmi**, SciTech, Al-Khobar, 27th September 2006.

Internal Lecturers/Seminars Presented by KFUPM Faculty

Speaker	:	Dr A. Al-Jalal
Topic	:	A Home-Written Computer Program For Generating And Analyzing Multiple-Choice Exams.
Date	:	17 Sept. 06
Speaker	:	Prof. I. Nasser
Topic	:	Amplitude Ratios In Phase Transition.
Date	:	24 Sept. 06
Speaker	:	Dr. F. Khiari
Topic	:	Students Difficulties with Physics Concepts in Introductory Physics Courses.
Date	:	29 Oct. 06
Speaker	:	Prof. M.A. Gondal
Topic	:	Laser Induced Breakdown Spectroscopy And Its Applications
Date	:	5 Nov. 06
Speaker	:	Prof. A.A. Naqvi
Topic	:	Radiative Capture To Boron Capture. Examples Of Thermal Neutrons Beam Applications
Date	:	12 Nov. 06
Speaker	:	Prof. Fida F. Al-Adel
Topic	:	A Physicist View Of The International Efforts In Education, Sciences And Culture
Date	:	19 Nov. 06
Speaker	:	Prof. M. A. KHAN
Topic	:	Optical Assessment Of O- Atom Densities In Low Presence Glow Discharges In H ₂ -O ₂ And Ar-O ₂ Gas Mixtures.
Date	:	3 Dec. 06
Speaker	:	Dr. Guldad Khattak
Topic	:	Direct Current (DC) Conductivity Studies of

Date : Strontium-Borate-Vanadate Glasses
10 Dec.06

Speaker : Tariq Ahmed
Topic : Open Questions in Physics
Date : 7 Jan. 06

Speaker : Mahmoud Hezam
Topic : Nano Structures of Zinc Oxide
Date : 14 Jan. 07

Seminars Offered by Outside Speakers at KFUPM

Speaker : Prof. Asghar Qadir
Topic : Constraining The Parameters Of The Central Black Hole
Date : 26 Nov. 06

Speaker : Prof. M.S. Abdel Hady
Topic : Production of Superior Plants to Sustain Saltines and Drought Using Biotechnology Methods
Date : 5 Dec. 06

Speaker : Dr. Jan Buiting
Topic : The Inherent Connection Between Water Saturation and Permeability for the Complex Pore Systems in Carbonates
Date : 17 Dec.06

Information & Computer Science Department

1. A Seminar on a New Trend in Educational Assessment: Computerized Adaptive Testing," **E. El-Alfy**, KFUPM, November 7, 2006
2. "Storytelling and Puzzles in Computer Science and Software Engineering Education", **M.R.K. Krishna Rao**, Griffith University, Brisbane, Australia, Aug 2006.
3. "Decidable Termination of Logic Programs", **M.R.K. Krishna Rao**, University of South Australia, Adelaide, Australia, Oct 2006.
4. "Automatic Arabic Optical Text Recognition", **M. Sarfraz**, KFUPM, September 17, 2006.
5. "Object Recognition using Fourier Descriptors", **M. Sarfraz**, University Sydney Technology, Sydney, Australia, July 26, 2006.
6. "Object Recognition using Moments", **M. Sarfraz**, SOAS, University of London, London, UK, July 6, 2006.

Computer Engineering Department**Seminars presented by COE faculty and Graduate Students:**

- Speaker: Mr. Ali M. Al-Bahrani
 Title: Testability Estimation Using Atomic Changes Metrics
 Date: Tuesday, December 19, 2006
 Venue: 22-119
- Speaker: Mr. Mohammed Mansoor Ali
 Title: FSM State Assignment for Area, Power and Testability using Modern Optimization Techniques
 Date: Tuesday December 12, 2006
 Venue: 22-119
- Speaker: Mr. Taha Anwar Jamil
 Title: Applying Iterative Heuristic on Weight Setting Problem in OSPF Routing
 Date: Tuesday December 5, 2006
 Venue: 22-119
- Speaker: Dr. Radwan Abdel-Aal <Radwan@kfupm.edu.sa>
 Title: Network Ensembles (Committees) for Improved Classification and Regression
 Date: Tuesday November 14, 2006
 Venue: 22-119
- Title: A High-Throughput Network-on-Chip Architecture for Systems-on-Chip Interconnect
 Speaker: Dr. Abdelhafid Bouhraouah
 Date: Tuesday October 31, 2006
 Venue: 22-119
- Speaker: Mr. Mohammed S. Al-Logmnai (Saudi ARAMCO)
 Title: Ajax, a new way of thinking for web applications
 Date: Tuesday October 31, 2006
 Venue: 22-119

Seminars delivered by COE Guest Speaker:

Speaker: Professor Bashir Al-Hashimi
 Professor of Computer Engineering
 Director of Pervasive Systems Research Center
 Deputy Head of School, School of Electronics and Computer Science
 Southampton University, UK Mr. Mohammed S. Al-Logmnai (Saudi ARAMCO)

Title: 1. Lower Power Reliable Computing Systems
 2. Pervasive systems

Date: Tuesday, November 21, 2006

Venue: 22-105

Speaker: Professor Bashir Al-Hashimi
 Professor of Computer Engineering
 Director of Pervasive Systems Research Center
 Deputy Head of School, School of Electronics and Computer Science
 Southampton University, UK Mr. Mohammed S. Al-Logmnai (Saudi ARAMCO)

Title: 3. Evolving Curriculum Design of Computer Engineering
 4. Master Level Course in System-on-Chip

Date: Wenesday, November 22, 2006

Venue: 22-105

Systems Engineering Department

Offered by Department Faculty

Speaker : Dr. Muhammad Al-Salamah (Asst. Professor)
 Topic : *“Solution Procedure for the Design of a Natural Gas Transmission Network with Redundant Links”*
 Date : November 28, 2006

Speaker : Dr. Kadir Ertogral (Asst. Professor)
 Topic : *“Developing Staff Schedules for a Bilingual Telecommunication Call Center with Flexible Workers”*
 Date : December 12, 2006

Offered by Outside/Invited Speakers

Speaker : Mr. Amrou Al-Sharif (Regional Manager, Teclusion Co.)
 Topic : *“Virtual Instrumentation and Control Solutions for Industry and Academics*
 Date : September 20, 2006

Speaker : Mr. Saad Azhar Ali (Electrical Engineering Dept.)
 Topic : *“U-Model Based Multivariable Nonlinear Adaptive Control”*
 Date : November 14, 2006

Speaker : Prof. Tamas Rapcsak (Computer and Automation Research
Institute, Hungarian Academy of Sciences, Budapest Hungary)
Topic : *“Spatial Decision Problems”*
Date : November 29, 2006

13. SEMINARS OFFERED BY OUTSIDE SPEAKERS IN THE UNIVERSITY

Petroleum Engineering Department

1. Speaker : Kassem Ghorayeb, Dhahran Center for Carbonate Research,
Schlumberger
Topic : Black Oil Delumping
Date : 16th September 2006

2. Speaker : Azhar Hussain, Wireline Logging Section of Schlumberger,
Schlumberger
Topic : Introduction to Schlumberger Wireline Logging Tools and
Sensors for Open Hole and Cased Hole
Date : 10th October 2006

3. Speaker : Talal Hassoun, Petroleum Consultant
Topic : Closed -Form Van Der Waals Critical Point for Petroleum
Reservoir Fluids
Date : 14th November 2006

4. Speaker : Hamoud Al-Anazi, Upstream Research and Development
Division, Saudi Aramco
Topic : Enhancement of Gas Productivity in Retrograde Gas Reservoirs
Date : 15th November 2006

5. Speaker : Frank Chang, Schlumberger Dhahran Carbonate Research Center
Topic : Enhancing Carbonate Reservoir Simulation Efficiency through
Perforating
Date : 22nd November 2006

6. Speaker : Kassem Ghorayeb, Schlumberger Dhahran Carbonate Research
Center
Topic : Integrated Surface/Sub-surface Modeling: Impact on Field
Planning
Date : 29th November 2006

7. Speaker : Konstantin Zorbalas, Saudi Aramco
Topic : Well Integrity – Growing in Importance
Date : 6th December 2006

8. Speaker : Taha M. Okasha, R& D Center, Saudi Aramco
Topic : Utilizing Special and Conventional Core Analyses in Reservoir
Development and Characterization (Shu'aiba Reservoir)
Date : 12th December 2006

9. Speaker : Ali H. Al-Hassan, SPE Middle East Regional Council
Topic : How to Improve the Technical and Professional Competence of

Date : Young Petroleum Engineer
18th December 2006

Chemistry Department

1. Speaker : Dr. Moustafa Elshafei
Title : Computational Methods in Bioinformatics
Date : September 19, 2006
2. Speaker : Mr. Hassan Za'Za'
Title : McGraw-Hill Education/Chemistry, 9th Edition by Chang
Date : October 10, 2006
3. Speaker : Dr. Abdulhafez Selim
Title : Biology of Bone Healing
Date : November 7, 2006
4. Speaker : Mr. Mansour Al-Shafei and Dr. Taha
Okasha
Title : Micro-Scale Wettability Determination of Arab-C, D and
Shu'aiba Reservoirs
Date : November 21, 2006
5. Speaker : Dr. Zulfiqar Ahmed
Title : Chemistry of the volcanic fields of Saudi Arabia
Date : December 12, 2006

Mathematical Sciences Department

1.	Speaker Title Location Date	: : : :	Dr. M. Aslam Chaudhry An identity-type functions and polynomials with applications KACS, Riyadh March 2006
2.	Speaker Title Location Date	: : : :	Dr. M. Aslam Chaudhry A unification of Hardy-Littlewood and Riesz conjectures, ICM Madrid, Spain August 2006