

RESEARCH NEWSLETTER

January, 2006

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FOREWORD

This first issue of the University Research Newsletter for the academic year 2005-2006 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 2005 to January 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. CHE/COPOLYMERS/292

Investigator: Dr. Basel Abu Sharkh

Co-Investigators: Dr. Shaikh Asrof Ali

Dr. Ibnelwaleed Hussain

Dr. Husain Al-Mualem

Title: Influence of Hydrophobe Architecture on Self-Assembly, Rheology and Interfacial Properties of Amphiphilic Polyelectrolyte, Polyampholyte and Neutral Copolymers

Abstract

Hydrophobically modified water-soluble copolymers and terpolymers (using SO₂ as the third monomer) will be synthesized from special type of diallylammonium salts and small amounts of a novel class of hydrophobic comonomers by a cyclopolymerization technique. The resultant pH-responsive ionic polymers (cationic polyelectrolyte, anionic polyelectrolyte and polyzwitterions) will be used to investigate the influence of special hydrophobe characteristics on self assembly, rheology and interfacial properties of the aqueous solutions of polymers. The hydrophobic comonomers will include various diallylammonium salts with different characteristics to investigate influence of size, bulkiness, and flexibility of the hydrophobe on self assembly and solution properties. 0.5% to 5% hydrophobes will be incorporated in the copolymers. Laser light scattering will be used to correlate sizes of polymer aggregates to copolymer concentration, hydrophobe content and spacer length. Consequently, the mechanisms of polymer association (inter-molecular vs. intra-molecular association) will be examined. Influence of hydrophobe characteristics on rheological behavior and surface and interfacial activities under various conditions such as polymer concentration, shear rate, temperature and salinity will also be investigated. Understanding the self-assembly of these polymers in solution is expected to lead to the design of new hydrophobically associating copolymers that could be used in different applications. These applications include enhanced oil recovery, paints, protein partitioning, and drug delivery systems, which are of interest to different sectors of the Saudi industry.

Effectiveness of the new class of hydrophobe in improving the associative behavior of the hydrophobically modified poly(vinyl alcohol) and polyacrylates will also be investigated.

2. Project No. MS/MATLAB-2/293

Investigator: Dr. Abdulwahab Kharab

Title: BOOKWRITING PROJECT: “AN INTRODUCTION TO NUMERICAL METHODS: A MATLAB APPROACH- 2ND EDITION.

Abstract

This is a textbook designed for an introductory course in numerical methods. It deals with the theory and application of the most commonly used numerical methods for solving numerical problems on microcomputers. It is intended for students in mathematics,

science, and engineering. The thrust of this text is to assist the students to become familiar with the most common numerical methods encountered in science and engineering.

This book introduces students to a wide range of useful and important algorithms. Computer results are presented with full details so that the main steps of the algorithm of each numerical method are visualized and interpreted. A supplementary CD-ROM, attached at the back of the book, has been developed for students' use with MATLAB. The CD-ROM contains simple MATLAB functions that give a clear step-by-step explanation of the mechanism behind the algorithm of each numerical method covered. The style of the book is easy, direct, and simple. This is likely to boost students' confidence in their ability to master the elements of the subject.

Features in the Second Edition:

There have been some minor changes in most of the sections. Major new features are as follows:

- MATLAB has been incorporated as an integral part of the text.
- Real-word examples have been added to each section.
- The number of exercises and computer problems has been increased tremendously.
- The number and variety of applied problems at the end of each chapter has been increased.
- A new chapter on numerical optimization.

3. Project No. CHE/PEM FUEL CELL/294

**Investigators: Dr. S.M. Javaid Zaidi
Dr. Saleem ur Rahman
Dr. Ibnelwaleed Hussain**

Title: “Development of Highly Conductive Composite Membranes For Medium Temperature PEM Fuel Cell”

Abstract

This proposal is concerned with the development of highly conductive novel composite membranes, their fuel cell testing, performance evaluation and long-term stability for PEM fuel cell. Fuel cells are now considered as reaching the threshold of commercialization. The most widely used solid polymer electrolyte membrane in fuel cells is Nafion 117. Due to some drawback of these membranes such as high cost (~ 800 US\$/m²), methanol crossover in direct methanol fuel cell (DMFC) and poor conductivity at higher temperatures above 100 °C, there is a need to develop less expensive and better performance polymer membranes.

Here we are proposing the fuel cell testing and electrochemical characterization of newly developed composite membranes in both hydrogen fuel cell and DMFC. The work will be carried out in two phases. In the first phase two new type of solid proton conductors namely tungstophoric acid supported on mesoporous MCM-41 silica and 12-molybdophosphoric acid encaged in the supercages of Y-zeolite will be developed and characterized. In the second phase the novel composite membranes will be prepared by composting these solid proton-conducting materials separately into sulfonated polyether-ether ketone (SPEEK) matrix respectively. These composite membranes are expected to show high conductivity at higher temperatures and will be more stable. Also, the

tungstophoric acids encaged into the porous MCM 41 and Y-zeolite when incorporated in the composite membranes are expected to resist the diffusion of methanol in DMFC. These membranes will be tested for their fuel cell performance and stability in a fuel cell station and will be subjected for their thermal and morphological characterization. The diffusion of methanol through these membranes will be studied in a permeability setup and their diffusion rates measured. The fuel cell testing data and the results of this investigation will enable us to predict the performance of these novel composite membranes in an actual fuel cell utilizing the abundant methanol cheaply available in the Kingdom.

4. Project No. CY/PALLADIUM/295

Investigators: Dr. Bassam El Ali

Dr. Basel Abu Sharkh

Dr. Mohammad Morsy

Dr. Mohammad Fettouhi

Title: “Regioselective catalytic hydrocarboxylation of alkynes by palladium complexes. Effects of the type of ligands and additives. Computational study of the mechanism of the reaction”

Abstract

The principal objective of this project is the catalytic conversion of aryl and alkyl alkynes (such as 1-heptyne and phenylacetylene) into acrylic acid derivatives. These products are important monomers for the production of various polymers. Also, they are versatile petrochemical intermediates for the production of various fine chemicals. The main tasks in this project are the study of the effects of phosphine ligands and additives on the conversion of alkynes, on the regioselectivity of the reaction toward branched or linear products, and also on the recycling efficiency of palladium catalysts.

The realization of this project is subdivided into 5 steps:

- (1) The synthesis of some important phosphine ligands as co-catalysts and polysulfonic acids or zeolites having sulfonic acid groups as additives.
- (2) The examination of the catalytic systems consisting of different palladium complexes and phosphine ligands in the carbonylation reactions of alkynes.
- (3) The study of the effects of the ratios of carbon monoxide to hydrogen and the effects of the additives such as polysulfonic acid or zeolite bearing sulfonic acid groups. The reactions will be conducted either in the presence of water or alcohol to produce acrylic acid derivatives.
- (4) The study of the possible recycling of the palladium catalysts.
- (5) The computational study of the mechanism of the reaction of hydrocarboxylation of alkynes.

The application of the carbonylation technique for the production of acrylic acid derivatives catalyzed by palladium based systems is expected to give interesting results that can be applied in the petrochemical industry in Saudi Arabia.

5. Project No. MS/CORINGS/296

Investigator: Dr. Jawad Abuihlail

Title: Primeness and Coprimeness Conditions for Comodules and Corings

Abstract

In 2001, R. Nekooei and L. Torkzadeh [NT01] introduced the concept of "coprime coalgebras" over base fields as a generalization of simple coalgebras. On the set of *coprime subcoalgebras* of a given coalgebra they defined a topology whose properties reflect (and are reflected by) the structure of the coalgebra under consideration.

Through this research project we generalize that concept to comodules for corings over (not necessarily commutative) base rings by defining a comodule to be coprime provided its ring E of comodule endomorphisms is prime. Moreover we introduce the [new] notions of (*completely*) *coprime*, *cosemiprime* comodules and *coprimitive*, *cosemiprimitive* comodules which generalize *simple*, *semisimple* comodules. We plan then to investigate the relations between these new coprimeness conditions of a comodule of a given coring with other (co)primeness conditions of the comodule in the literature (considered as a bimodule over the dual ring of the coring under consideration and over its ring of comodule endomorphisms).

In this project, we plan mainly to undertake an extensive and intensive study of these [new] notions with the goal of obtaining a complete characterization of comodules having these properties and study their structure. We plan also to construct a topology on the set of coprime subcomodules of a given comodule and study the interplay between the topological properties of that topological space and the structure of the comodule under investigation.

The results we get for comodules will be applied then to develop a theory of coprime corings that not only dualizes but also generalizes the theory of prime rings (recall that every ring is a coring in a natural way).

With the results we get on coprime corings and comodules we will try to shed some light on the answer of the following crucial problem: how to define *colocalizations* for corings and comodules that dualize and generalize the classical *localizations* of rings and modules? We hope to be able to give (at least partial) answers to this open problem.

6. Project No. CY/PROPONELS/297

**Investigators: Dr. Hasan M. Badawi
Dr. Wolfgang Forner**

Title: Potential Surfaces and Vibrational Analysis of Some Halo-Propanols

Abstract

The objective of this research proposal is to investigate the conformational and structural stability of some halo alcohols by Density Functional and ab initio MP2 calculations. The energies of the compounds in their stable conformations and the transition states will be optimized at DFT-B3LYP/6-311+G** or MP2/6-311+G** levels of calculation. The barrier to internal rotation and the asymmetric potential function coefficients will be determined. The rotational constants and total dipole moments of the compounds at their most stable conformations will be determined by these calculations. The Infrared and Raman spectra of the molecules at the condensed phases will be measured experimentally. The vibrational frequencies will be calculated at DFT-B3LYP/6-311+G** level and complete vibrational assignment of the calculated normal modes will be made based on normal coordinate calculations, measured polarization ratios, relative IR intensities and Raman activities. The potential energy distribution PED of the fundamental vibrations will be determined from the calculations.

7. Project No. MS/VISCOELASTIC/298

Investigator: Dr. Salim Messaoudi

Title: On Some Singular Viscoelastic Problems

Abstract

In this project we consider a singular system which appears in viscoelasticity. This system involves different damping mechanisms, either internal or the one resulting from the integral term, and a nonlinear source. Our main goal here is to characterize the weighted Sobolev spaces in which we obtain existence and uniqueness of strong solutions. We also study the interaction between the dissipation term and the nonlinear source term and seek reasonable conditions on the relaxation function and the nonlinearity in the source under which the system stabilizes to a stationary state or alternatively the solutions blow up in finite time. Eventually, the decay rate of convergence of solutions to the equilibrium state will be specified.

8. Project No. PH/DC-MAGNETRON/299

Investigators: Dr. Nouar Tabet

Dr. A. Mekki

Dr. Khaled Mezghani

Title: DC-MAGNETRON SPUTTERING SYNTHESIS AND CHARACTERIZATION OF THE PHYSICAL PROPERTIES OF ZINC OXIDE THIN FILMS

Abstract

The aim of this project is to synthesize and study the electrical properties of zinc oxide thin films obtained by reactive plasma in our home made dc magnetron sputtering system.

Pure samples as well as Sb and Mo-doped films will be prepared in various experimental conditions. The effect of the various parameters on the physical properties of the films will be investigated. These parameters are the partial pressure of oxygen, the total pressure in the chamber and the temperature of the substrate. Nitrogen doped films will be obtained by adding a controlled amount of nitrogen gas in the chamber during sputtering. Antimony doped films will be obtained by using a Zinc target including a controlled amount of antimony. The structure and composition of the films will be analyzed by X-ray Diffraction (XRD), Scanning Electron Microscopy (SEM) and X-ray Photoelectron Spectroscopy (XPS). Hall effect measurements will be carried out to investigate the electrical properties of the films. The duration of the project will be 30 working months.

ARABIC PROJECTS SUPPORTED BY THE UNIVERSITY

الصناعي الإجتماع : علم
عنوان المشروع : الدكتور/ خضير بن سعود الخضير
إسم المؤلف : ARA-1426/01
المشروع رقم

الملخص

بالعلوم وعلاقاته مجالاته كذلك , وتطوره الصناعي الإجتماع علم نشأة الكتاب يستعرض
ظل في الصناعي العمل ومشكلات الإنتاج نظم تطور إلى يتطرق كما . الأخرى الإجتماعية

الأثار عن الحديث الى إضافة الإجتماعية والتغيرات التكنولوجي والتقدم الحديثة التحولات المملكة في الصناعية التنمية مسيرة وكذلك السعودي المجتمع على وتطبيقه التصنيع عن الناجمة.

التحليلية الكيمياء في الأساسية : المفاهيم
عنوان المشروع : الدكتور/ عبدالله أبو الكباش
إسم المؤلف
رقم المشروع : ARA-1426/02

الملخص

ألحجمي بنوعها التقليدية التحليل طرق متضمنا الكيمياء في الأساسية للمفاهيم شرحا الكتاب يقدم تجارب إلى يتطرق كما ,منهما لكل العملية والتطبيقات الآلية التحليل طرق إلى إضافة والوزن التحليل طرق لكل معملية.

. : أساسيات الفيزياء الحرارية والإحصائية
عنوان المشروع : الدكتور/ إبراهيم ناصر والدكتور/ عبدالله السنيدي
إسم المؤلف
رقم المشروع : ARA-1426/03

الملخص

الكتاب مقدم لطلاب السنوات النهائية بكليات العلوم والتربية والهندسة . سيتضمن الكتاب موضوعات المادة العلمية وأمثلة متنوعة بحلولها المتكاملة ، وتمارين متنوعة بنهاية كل باب مع حلولها المختصرة ، ويختم المنهج الملاحق الإضافية والتي تحتوي على موضوعات متقدمة .

المعاينة وطرق البيانات : جمع
عنوان المشروع : الدكتور/ حسن المطلق
إسم المؤلف
رقم المشروع : ARA-1426/04

الملخص

بصورة البيانات جمع في تستخدم أن يمكن التي العلمية الإحصائية الطرق إلى الكتاب يتطرق بعيدا ودقيقة علمية بطرق البيانات جمع كيفية إلى العرب الباحثين يرشد كما ,ومبسطة صحيحة الحقيبة فيه سيستخدم الذي الأول الكتاب هذا ويعتبر ,الرياضية التفاصيل في الخوض عن المعاينة طرق اهم تحليل في Minitab الإحصائية.

البدنية واللياقة : الصحة
عنوان المشروع : الدكتور/ علي ابوصالح والدكتور/ غازي حمادة
إسم المؤلف
رقم المشروع : ARA-1426/05

الملخص

جميع الكتاب هذا ويخدم ,للصحة بالنسبة الرياضة اهمية ويبين وتنقيفي توعوي كتاب يعتبر المجتمع شرائح.

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. Raafat Al-Anaizy 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 olyelectrolyte, 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)
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)

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Electrical Engineering	Dr. Abdelmalek Zidouri (EE) Dr. Muhammad Sarfraz (ICS)	Automatic Text Recognition: A Need in Arabization (EE/AUTO-TEXT/232)
Electrical Engineering	Dr. M.A. Abido Dr. Youssef Abdel-Magid	Power System Stability Enhancement Using Unified Power Flow Controllers (EE/POWER/282)
Mechanical Engineering	Dr. Hassan M. Badr Dr. M.A. Habib Dr. S.A.M. Said Dr. R. Ben Mansour	Turbulent Natural Convection Flow in Parallel and Converging-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)
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)
College of Computer Science & Engineering		
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)
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)		
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
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)
Accounting & MIS	Dr. Haider Madani	Corporate Disclosure and Reporting Practices in the Gulf Cooperative Council Countries: A Cross-National Comparative Investigation (CIM/DISCLOSE/248)
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)
Earth Sciences	Dr. Mohammad Makkawi	Groundwater Resources and Environmental Management: Industrial Experience in Modeling Groundwater Aquifers (ES/GROUND- WATER/290)
College /	Principal Investigator /	Title of the Project

Department -----	Co-Investigator(s) -----	and its Code -----
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 FUNCTION/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)
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)
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)

**College /
Department**

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

**Title of the Project
and its Code**

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)**

**College of
Environmental Design
(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)**

4. RESEARCH PROPOSALS UNDER REVIEW

#	Name of Faculty & Department	Title of Research Proposal
1	Dr. Mahbub Hussain, Earth Sciences Department (RELEASE TIME PROPOSAL)	Application of Trace and Rare Earth Elements (REE) in Tectonic Interpretation of the Exposed Cretaceous Wasia Formation in Al Kharj and Riyadh Area (Release time research proposal). Host: University of Texas at Dallas, Richardson, Texas 75083-0688, USA
2.	Dr. Abdeslem Lyaghfour, Mathematics Department (RELEASE TIME PROPOSAL)	On the Continuity of the Free Boundary in a Class of Elliptic Free Boundary Problems with Neumann Boundary Condition (Release Time Research proposal) Host Institution: Texas A&M University at Austin, USA.
3.	Dr. Nasser-eddine Tatar Dr. Mohammad R. Alamia (Math)	Stabilization of a Partially Viscoelastic Material
4.	Dr. Wasfi Al-Khatib, ICS Dr. Sabri A. Mahmoud, ICS Dept.	Toward Content-Based Indexing and Retrieval of Arabic Manuscripts
5.	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
6.	Dr. Hasan Mohammad Badawi Dr. Abdulaziz Al-Suwaiyan (Chem) Dr. Wolfgang Forner (Chem)	Analysis of Vibrational Spectra and Ring Inversion of Some Cyclic Compounds
7.	Dr. Muhammad Sarfraz (ICS) Dr. Sabri A. Mahmoud (ICS)	Automatic Arabic Optical Text Recognition (AOTR)
8.	Dr. Saleem ur Rahman (Che) Dr. O.S.B. Al-Amoudi (CE) Dr. Shamsah Ahmad (CE)	An Exploratory Study on Corrosion Protection of Reinforcing Steel in Concrete Using Conducting Polymer
9.	Dr. Sheikh Sharif Iqbal (EE) Dr. Saad Al-Shahrani (EE)	Design of Active 24-GHz Microstrip Linear Phased Array-Antenna for Microwave Sensors
10.	Dr. M. Mohandes (EE) Dr. Maan Kousa (EE) Dr. S. Al-Shahrani (EE) Mr. A. Abul Hussain (EE)	RFID Wristband Tag for Pilgrims Identification
11.	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
12.	Dr. Ramazan Kahraman (Che) Dr. Sleem ur Rehman (Che) Dr. Mesfer Al-Zahrani (CE)	Corrosion Investigation of Stainless Steel and Stainless Steel Clad Reinforcing Bars. Duration: 36 months. Budget: SR. 302,700.

11.	Dr. Salah M. Sultan (Chemistry)	Sequential Injection Analysis Technique for Automated Titrations (Release time) (proposal recd. on 26.1.2003)
12	Dr. Khaled Salah (Asst. Prof.) ICS Mr. Khalid El-Badawi (Lecturer)	A Methodology for Successful Voice over IP Deployment
13.	Mr. Ejaz Ahmed (ICS) Dr. Muhammad Salahdin Mr. M.I. Abbasi Mr. Bashir Muhammad Ghamdi	Implementation of Staging Schema for Web Based Data Warehousing Applications
14.	Dr. Mohammad Fettouhi (Chem) Dr. Bassam El Ali (Chemistry) Dr. Khalil Ziq (Physics)	New Group 10 metal complexes based on chelate ligands bearing nitroxide radicals. Magnetic properties and Catalytic performance in Oxidation Reactions of Alcohols
15.	Dr. M. Saleh Ashoor (IAS Dept.) Dr. Israr S. Khan (CIM) Dr. Gaze K. Hamadeh (Medical Center)	An Investigation of Repetitive Strain Injuries (RSI) Among the Computer Users in Universities of Saudi Arabia;
16.	Dr. Sulaiman Al-Khattaf (Che) Dr. Raafat Alnaizy (Che) he is replaced by Mr. Nasiru Tukur, Lecturer, Chemical Engg. Dept.	A Novel Process for Methanol Alkylation of Toulene to Produce Xylenes; duration: 24 months.
17.	Dr. Bassam El Ali (Chemistry) Dr. Basel Abu Sharkh (Che) Dr. Mohamed Morsy (Chemistry) Dr. Mohamed Fettouhi (Chemistry)	Regioselective Catalytic Hydrocarboxylation of Alkynes by Palladium Complexes. Effects of the type of Ligands and Additives. Computational Study of the Mechanisms of Reaction
18.	Dr. M.H. Baluch, CE Dept. Dr. Ali H. Al-Gadhib Dr. O.S.B. Al-Amoudi Dr. M. Kalimur Rahman	Engineering Guidelines for Application and Design of Prestressed Precast Hollow Core Concrete Slabs Strengthened with CFRF Sheets.
19.	Dr. M. Sarfraz, ICS Dept.	Reverse Engineering for Geometric Models Using Evolutionary Heuristics
20.	Dr. Ali A. Shash (CEM) Dr. Mohammad Baluch (CE) Dr. Muhammad Kalimur Rahman (RI) Dr. Ali Al-Gadhib (CE)	Study on Reactive Powder Concrete for Repair and Retrofitting of Concrete Structures
21.	Dr. Muhammad Shafiq (SE) Dr. Fouad Al-Sunni (SE) Dr. Jauhar Ali (SE)	Adaptive Tracking of Non-Minimum Phase Discrete-Time Plants Using Inverses of Signals
22.	Dr. Rabee M. Reffat (Architecture)	A Semantic-Based Virtual Design Environment for Digital Designing in Architecture

	Mr. Yasser Hany M. Alsawy	
23.	Dr. Mohammed A. Al-Daous (Chem)	Growth of Uniform Zeolite Layers on 3D Ordered Macroporous Anion Modified Zirconia: Synthesis, Characterization, and Catalytic Evaluation
24.	Dr. Sleem ur Rahman (Che) Dr. Ahmed Yamani (EE)	Development of Solid-Liquid Mass Transfer Probe Based on Limiting Diffusion Current: Application to Stirred Tanks
25.	Dr. Salih Duffuaa, Dr. Mohammad Darwish and Dr. Ahmed E. Haron (all SE Dept.)	Multi-Objective Mathematical Models for Process Targeting
26.	Dr. M.I. Al-Jarallah Mr. Fazal-ur-Rehman Dr. A. Al-Solami (all Phys Dept)	Indoor Radon Survey in Hail City of Saudi Arabia
27.	Dr. Ahmed Yamani (EE) Dr. Mohamed Deriche (EE)	Extraction of Optimal Features from Ultrasonic NDT Signals Using Time-Frequency and Time-Scale Distributions.
28.	Dr. Walid Abu Dayyeh (Math) and Dr. Hassen Muttlak (Math)	Estimating $P(Y < X)$ using Ranked Set Sampling in Case of the Exponential Distribution.
29.	Dr. Hassen A. Muttlak (Math) Dr. Walid S. Abu-Dayyeh (Math)	Confidence intervals estimation of the location and scale parameters of the logistic distribution using the pivotal method.
30.	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
31.	Dr. Akhtar Naqvi (Phys) Dr. M.M. Nagadi (Phys) Dr. O.S. Al-Amoudi (CE) Dr. M. Maslehuddin (RI)	Measurement of Chloride Concentration in Silica Fume and Fly Ash Cement Concretes using PGNAA Technique.
32.	Dr. Malick Ndiaye (SE)	Locating Facilities with Various Distance Functions.
33.	Dr. Muhammad Al-Arfaj (Che) and Dr. Habib Zughbi (Che)	Development of a Generic Framework for Integrating CFD Models in the Feedback Control System Phase I: Application to Heat Exchanger Inlet Area.
34.	Dr. Habib Zughbi (Che) Dr. Habib Al-Ali (Che)	Investigation of the Hydrodynamics of a Moving Bed Reactor.
35.	Dr. Alhassan G. Abdul-	Awareness, Adoption and Maturity Level of

	Muhmin Mr. Irfan Ilyas (MBA)	Customer Relationship Management (CRM) Practices in Saudi Companies.
36.	Dr. Muhammad Asad Sadi Dr. Obaid Al-Abdali (CIM)	An Examination of Saudization Policy in the Service Sector: The Replacement of Foreign Workers with Locals in Saudi Arabia
37.	Dr. Haidar M. Fraihat (Acct & MIS)	A Conceptual IT-Based Model for Collaborative Research Environments
38.	Dr. Azzedine Zerguine (EE) Dr. Lahouari Cheded (SE) Dr. Asrar Sheikh (EE)	Performance Evaluation of a Soft Decision Based Least Mean Fourth (LMF) Algorithm: Applications to Wireless Communications
39.	Dr. A. Elazouni, Dr. Abdulaziz Bubshait of CEM Department, Dr. M. Hassanain of ARE Department and Dr. M. Deriche of EE Department. . Proposal transferred from SABIC to regular project.	Utilization of Pattern Recognition Techniques for Progress Monitoring of Construction Projects
40.	Dr. Hussain A. Alzaher (EE) Dr. Mohammad Al-Ghamdi (EE) Mr. Noman Tasadduq (EE) (Transferred from SABIC Proposal #24 to Internal Project)	CMOS Lowpass Filters for Dual Bluetooth/WLAN Direct-Conversion Receiver
41.	Dr. Zain Yamani (Phys) Dr. M.A. Gondal (Phys) Mr. Talib Husain (Phys)	Laser Induced Breakdown Spectrometer for Trace Element Analysis.

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

S. No.	Name of Faculty & Department	Title of the Research Proposal
1.	Dr. Abdulaziz Al-Jalal, Physics Dr. Ibraheem Nasser, Physics Mr. Khateeb-ur-Rehman, Physics	General Physics Multiple-Choice Questions: Waves, Thermodynamics, Electricity and Magnetism
2.	Dr. Adel Aldosary, City & Regional Planning Department Mr. Syed Masiur Rahman, Lecturer-B, Civil Engineering Department	Localization in Saudi Arabia: Social and Economical Perspectives.
3.	Dr. Muhammad Sarfraz, ICS	Interactive Curve Design with Applications in Computer Graphics, Vision and Image Processing

6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2006/2007

College/ Department	Name of Faculty	Title of Sabbatical Proposal	Host Institution
College of Engineering Electrical Engineering Department	Dr. Husain Masoudi	Broad-Band Time-Domain Beam Propagation Method	University of Toronto, Canada
Civil Engineering Department	Dr. Ali Al-Gadhib	Numerical Simulation of the Evolved Physico-Chemical Distress in Concrete Repairs and Concrete Structures	University of South Florida, Tampa, USA
College of Sciences Physics	Dr. M.I. Al-Jarallah	Sabbatical leave proposal for writing a book in Arabic entitled Radon Gas and Radiation Dangers	Within the Kingdom
Mathematical Sciences	Dr. Mohammad Samman	Sabbatical leave proposal entitled: Some Development in Near-Ring Theory.	Host Institute: University of Linz, Austria. Sabbatical Year: 2006-2007

**7. SABIC AND FAST TRACK PROPOSALS RECEIVED DURING NOVEMBER 2005
FOR FUNDING**

S. No.	Name of Faculty	Department	Title of the Proposal	Budget Amount (SR)
SF-2006-01	Dr. A.H. Bukhari Dr. F.D. Zaman	Mathematical Sciences	Lie Symmetry Methods and Some Nonlinear PDES	46,400
SF-2006-02	Dr. Mohammad Said Oukil	Mgt & Mkt.	Technology Entrepreneurship: A Survey Analysis of KFUPM Graduates	65,500
SF-2006-03	Dr. Ramazan Kahraman Dr. Mehmet Sunar	Che. Engineering Mech. Engg.	A Study on Environmental Degradation of Aluminum Joints Bonded by Rubber-Modified and Alumina Filled Epoxy Adhesives	65,200
SF-2006-04	Dr. Abdulwahab Kharab Dr. Fatah Z. Khary	Mathematics Physics	Two-Dimensional Penetration of a Projectile into a Soil Medium	70,000
SF-2006-05	Dr. Rajai Alassar	Mathematical Sciences	Acoustic Streaming on Oscillating Spheres	23,100
SF-2006-06	Dr. Jawad Abuihlail	Math. Sciences	Semi-Corings and Semi-Comodules	20,400
SF-2006-07	Dr. F.D. Zaman Dr. A.H. Bukhari	Mathematical Sciences	A Domain Decomposition Method for Some Deterministic and Stochastic Problems	58,400
SF-2006-08	Dr. Selim Messaoudi Dr. Nasser-eddine Tatar	Mathematical Sciences	Stabilization of a System of Strongly Coupled Nonlinear Equations Arising in Viscoelasticity	49,400
SF-2006-09	Dr. Hassen Muttalak Dr. Abu-Dayyeb Walid	Mathematical Sciences	Confidence-Intervals Estimation of the Location and Scale Parameters of the Logistic Distribution Using the Pivotal Method	66,600
SF-2006-10	Dr. Ibrahim Rahimov Dr. Bilal Chanane	Mathematical Sciences	Investigation of the Branching Stochastic Process with Incubation	43,400
SF-2006-11	Dr. Salim Messaoudi Dr. Aissa Guesmia	Mathematical Sciences	Uniform Stabilization of Some Timoshenko-Type Systems	30,900
SF-2006-12	Dr. Hamoud Ahmad Dehwah Dr. O.S.B. Al-Amoudi	Mathematical Sciences Civil Engg.	Evaluation of Ternary-Blended Cement Systems for Improving Concrete Durability in the Arabian Gulf	75,000
SF-2006-13	Dr. Abdeslem Lyaghfour	Mathematical Sciences	On the Flow of Three Immiscible Fluids in an Unbounded Porous Medium	23,400
SF-2006-14	Dr. Raja M. Latif	Mathematical Sciences	Characterizations and Application of Theta-Open Sets and Mappings	29,600
SF-2006-15	Dr. M.A. Bokhari Dr. Hussain Al-Attas	Mathematical Sciences	Combination of Orthogonal Collocation Points with Pre-assigned Knots: A Study of Numerical Solutions of Boundary Value Problems	40,000
SF-2006-16	Dr. Taqi N. Al-Faraj Mr. Ali S. Al-Darweesh	Management & Marketing	Assessing and Benchmarking the Performance of Maintenance Units Using DEA: An Empirical Study on SABIC Affiliates	66,400
SF-2006-17	Dr. Esam E. Hassan	Electrical Engg.	Design of Optimal Narrow Band Filter for Delta Sigma Modulator	31,300
SF-2006-18	Dr. Salam A. Zummo	Electrical Engg.	Performance of Coded Diversity Systems in Wireless Environments	67,900
SF-2006-19	Dr. Sheikh Sharif Iqbal Dr. Mahmood Dawood	Electrical Engg. Electrical Engg.	Circularly Polarized Planar Semiconductor Phase Shifters for Phased Array Antennas	75,000

SF-2006-20	Dr. Ibrahim El-Amin Dr. M.A. Abido	Electrical Engg. Electrical Engg.	Power System Stability in the Deregulated Environment	44,400
SF-2006-21	Dr. Azzedine Zerguine Dr. Asrar Sheikh	Electrical Engg. Electrical Engineering	A Fast Variable Step Size Blend Equalization Algorithm Based on Multiple Constraints	57,200
SF-2006-22	Dr. M. M. Dawoud Dr. A. Zerguine	Electrical Engg. Electrical Engg.	Development of a Tracking System for Moving Targets	59,100
SF-2006-23	Dr. Mohammad A. Abido	Electrical Engg.	A Novel Multiobjective Particle Swarm Optimization Technique: Development and Applications	41,800
SF-2006-24	Dr. Mohamed Shwehdi Dr. Tarek Sheltami Dr. Umar Johar	Electrical Engg. Computer Engg. Electrical Engg.	Investigation on Safe Grounding and Bonding Procedures Requirements in International Distribution System	99,000
SF-2006-25	Dr. Mohammad Sqalli Dr. Mostafa Abdel-Barr	Computer Engineering	Design and Performance Analysis of a P2P Fault-Tolerant Network Management System	75,000
SF-2006-26	Dr. Mohammad Sqalli Dr. Sadiq Sait	Computer Engineering	Engineering Modern Iterative Heuristics to Solve the OSPF Weight Setting Problem	75,000
SF-2006-27	Dr. Mohamed A. Morsy Dr. Salah Sultan	Chemistry Chemistry	Electron Paramagnetic Resonance Characterization of Ketoconazole in Drug Formulation by Different Oxidizing Agents	75,000
SF-2006-28	Dr. Anvarhusain Isab Dr. M.I.M. Wazeer	Chemistry Chemistry	Chelation of Ethylene Diamine and Its Derivatives and ¹⁰ Metal Ions: Solution and Solid State NMR and X-Ray Structure Studies	75,000
SF-2006-29	Dr. Shaikh Asrof Ali Dr. Hasan A. Muallem	Chemistry Chemistry	Effects of Charge Types on the Viscometric Behavior of a Variety of New Associating Ionic Polymers	75,000
SF-2006-30	Dr. M. Abdulmajeed Al-Daous	Chemistry	3D Ordered Monoporous Carbon Silica Composite Supported CoMoS Hydrodesulfurization Catalyst: Synthesis, Characterization and Catalytic Evaluation	75,000
SF-2006-31	Dr. Mohd. N. Siddiqui Dr. Halim Redhwi	Chemistry Chemical Engg.	Pyrolysis of Mixed Plastic Wastes for Recovery of Useful Liquid Products	74,500
SF-2006-32	Dr. Salah M. Sultan Dr. M.A. Morsy Dr. Abdulmutallib Jaber	Chemistry Chemistry Chemistry	Adoption of a Novel Method for the Assay of Diclofenac Sodium in Pharmaceutical Formulation Utilizing Sequential Injection Analysis Technique	75,000
SF-2006-33	Dr. El-Sayed El-Affy Dr. Shokri Selim	ICS SE	Multi-Criteria Adaptive Traffic Engg for Differentiated Series: MPLS Networks Using Evolutionary Algorithms	74,600
SF-2006-34	Dr. Khaled Salah Dr. S.M. Bukhari Dr. Khalid El-Badawi	ICS ICS ICS	Deploying Desktop Video-conferencing Over Existing IP Networks	71,500
SF-2006-35	Dr. Mohd Al-Shayeh Dr. Jarallah Al-Ghamdi	ICS ICS	Software Metrics Definition Language	48,500
SF-2006-36	Dr. Mohd. Al-Shayeh Dr. Jarallah Al-Ghamdi Dr. Mohd. Eissa	ICS ICS ICS	Measuring Object-Oriented Class Stability	70,000
SF-2006-37	Dr. Farag Azzedin Dr. Khalid Salah Dr. M. Ndiaye	ICS ICS SE	Trust Modeling for Peer-to-Peer Systems: Issues and Approaches	75,000
SF-2006-38	Dr. Emad A. El-Sebakhy	ICS	Roadmap for the Development and	75,800

	Dr. Sahalu Junaidu Dr. Salaheddin Mohd.	ICS ICS	Commercialization of New Technology Using Intelligent Systems Approach	
SF-2006-39	Dr. Emad A. Sebakhy Dr. Mohd. Al-Shayeb Dr. Tarek El-Basuny	ICS ICS ICS	A Neural Networks Models With Bounded-Weights as a Novel Approach for Forecasting Incomplete Data Imputation in Software Cost assessment	75,800
SF-2006-40	Dr. Aref A. Al-Ashban Dr. Sadiq Sohail	Management & Marketing	The Importance of Saudi Firms Marketing & Related Strategies on Their Export Performance	75,300
SF-2006-41	Dr. Luai Al-Hadrami Dr. S.M. Zubair	Mechanical Engineering	Design and Operate a Fouling Monitoring Device to Study Fouling in Twisted Tubes	53,600
SF-2006-42	Dr. Aimen El-Maleh Dr. Ahmed Yamani	Com. Engineering Elec. Engg.	Test Data Volume Reduction of Scan- Based Deterministic Test Based on Scan Chains Compatibility Using Partitioning and Relaxation	68,400
SF-2006-43	Dr. Abdulaziz Bubshait Mr. Jalaluddin	CEM Dept.	Application of Analytical Hierarchy Process (AHP) Method for Engineering Design (EC) Prequalification in SABIC Industrial Construction Projects	70,700
SF-2006-44	Dr. S. Al-Quraishi Dr. Nouar Tabet	Physics Physics	Investigation of the Structural and Physical Properties of CN _x Thin Films Obtained by DC Reactive Plasma	91,700
SF-2006-45	Dr. Taqi N. Al-Faraj Mr. Shah M. Shariq	Mgt & Mkt	Framework for Evaluation of Productivity and Economic Performance of the GCC Countries	56,400
SF-2006-46	Dr. Haider Fraihat Dr. Ibrahim Al-Jabri	Acctg & MIS Acct. & MIS	Utilization of Electronic Payment System by Business Organizations	79,300
SR-2006-47	Dr. Aiman El-Maleh Dr. M.A. Landolsi	Computer Engg. Mechanical Eng.	Design and Implementation of Interconnect Efficient Low Density parity Check Error Correcting Codes	68,400
SF-2006-48	Dr. Haitham Bahaidrah	Mech. Engg.	Numerical Study of Fluid Flow and Heat Transfer over a Series of in-line Non- circular Tubes Confined in a ParallelPlate Channel	65,800
SF-2006-49	Dr. Q.H. Ansari Dr. Soliman Al- Homidan	Mathematical Sci. Mathematical Sci.	Ekeland's Variational Principles for Equilibrium Problems and Their Applications	57,900
SF-2006-50	Mr. F. Kandlawala Dr. A. Abdur Rahim	Electrical Eng. Electrical Eng.	Dynamic Analysis and Control Design of a Wind Turbine Induction Generator Unit	74,600
SF-2006-51	Dr. Habib Abualhamayel Dr. M.A. Habib Dr. R. Ben-Mansour	Mech. Engg. Mech. Engg. Mech. Engg.	Influence of Burner Inclination Angle and Burner Tripping on Pollution Characteristics in a Tangentially Fired Furnace	74,700
SF-2006-52	Dr. H.A. Omar	Aerospace Eng.	Designing a Non-linear Anti-Swing Controller for Helicopter Swing-Lead System Near Hover	57,900
SF-2006-53	Dr. E. Ahmed Dr. B.A. Ghandi Dr. A. Al-Jeabaz	ICS ICS ICS	Implementation of Staying Scheme for Web Based Data at Warehousing Applications	70,800
SF-2006-54	Dr. Abdelhafid Bouhraoug Dr. Mohd. Mudawar Dr. Mohd. El-Rabba	COE COE COE	Using the On-Chip Advantage in Designing Networks-on-Chip	74,700
SF-2006-55	Dr. M. Sadiq Sohail	Mgt. & Mkt.	The Retailing Sector in Saudi Arabia: An Evaluation of Shoppers Attitudes and Preferences	57,200

SF-2006-56	Dr. Fouad Alsunni Dr. M. Shafiq Mr. S. Azhar Ali	SE SE SE	Adaptive Control of Multi-Input Multi-Output Nonlinear Systems Based on the U-Model	71,540
SF-2006-57	Dr. M.I. Al-Jarallah Mr. Fazal-ur-Rehman	Physics Physics	Indoor Radon Levels and Radon Effective Dose Determination in Hail City of Saudi Arabia	75,000
SF-2006-58	Dr. Hesham Al-Fares Dr. Kadir Ertogral	Systems Eng. Systems Eng.	Development of a Metaheuristic for a Mixed Workforce Tour Scheduling Problem with Integrated Shift Design	71,200
SF-2006-59	Dr. Faisal Fairag	Mathematical Sci.	Finite Difference Method on Triangulation	39,900
SF-2006-60	Dr. Mohammad Samman	Mathematical Sciences	Characterization of Some Classes of Integral Domains Via Semistar Operations	37,900
SF-2006-61	Dr. Zuhair Gasem Mr. Mohammad Ahsan	Mechanical Engg. Mechanical Engg.	The Effect of Austenite/Ferrite Ratio on the Fatigue and Corrosion Fatigue Resistance in a Duplex Stainless Steel	75,000
SF-2006-62	Dr. H. Bahlouli Dr. A.D. Alhaidari	Physics Physics	New Issues and Problems in Dirac Equation and Their Solutions	74,900
SR-2006-63	Dr. Ashraf Elazouni Dr. Abdulaziz Bubshait Dr. Umar Al-Turki Dr. Shokri Selim	CEM CEM SE SE	Finance-based Scheduling of Linear Repetitive Projects Using Genetic Algorithms	69,100

8. PUBLICATIONS IN REFEREED JOURNALS **REPORTED AFTER JULY, 2005**

College of Engineering

Civil Engineering

1. "Enhanced Photocatalytic Degradation of Tetramethylammonium on Silica-loaded Titania," **Vohra, M.S. Lee, J., and Choi, W.**, Journal of Applied Electrochemistry, Vol. 35, 2005, p. 757.
2. "Corrosion Study Using of Concrete Using PGNAA Technique," **Naqvi, A.A., Nagadi, M.M., and Al-Amoudi, O.S.B.**, Materials Science Forum, Vols. 480-481, 2005, pp. 33-42.
3. "Effect of Superplasticizer Type on Plastic Shrinkage in Plain and Silica Fume Cement Concretes under Hot Weather Conditions," **Al-Amoudi, O.S.B., Abiola, T.O., and Maslehuddin, M.**, Construction and Building Materials, 2005, in press.
4. "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, 2005, in press.
5. "The Influential Factors on the Permeability of Concrete," **Al-Amoudi, O.S.B., Siddiq, W.M.E., and Maslehuddin, M.**, Building Technology, Issue 6, 2005 (1426H), pp. 62-68 (in Arabic).
6. "Photovoltaic Technology of Electricity Generation for Desert Camping," **Shafiqur Rehman, Shash, A.A., and Al-Amoudi, O.S.B.**, American Journal of Environmental Sciences, Vol. 1, No. 1, 2005, pp. 50-58.
7. "Evaluation of Thermal Performance of Different Saudi Bricks," **Bader, M.A., Ahmad, A., Shafiqur Rahman, Al-Amoudi, O.S.B., Shaahid, S., and Hafieche, B.**, Civil Engineering, Saudi Society of Civil Engineering, King Abdulaziz University, Jeddah, Issue No. 1, April 2005 (Rabi I, 1426H), pp. 10-15.
8. "Prompt Gamma Analysis of Chlorine in Concrete for Corrosion Study," **Naqvi, A.A., Nagadi, M.M., and Al-Amoudi, O.S.B.**, Applied Radiation and Isotopes, 2005, in press.
9. "Measurement of Lime/Silica Ratio Using PGNAA Technique," **Naqvi, A.A., Nagadi, M.M., and Al-Amoudi, O.S.B.**, Nuclear Instruments & Methods in Physics Research (Section A), 2005, in press.

Chemical Engineering

1. "Mixing in a Fluid Jet Agitated Tank: Geometric Effects", **H. D. Zughbi, S. W. Siddiqui, and A. I. Fatehi**, Development in Chemical Engineering and Minerals Processing, **14** (1-2), 143-152, 2006.
2. "Simulation of Flow and Chemical Reactions in a Claus Converter", **H. D. Zughbi, and S. Razzak**, Industrial and Chemistry Engineering Research, Vol. **44**, No. 26, 9828-9839, 2005.
3. "Mixing in Liquid-Jet-Agitated Tanks: Effects of Jet Asymmetry", **H. D. Zughbi and Ahmad, Iqtedar**, Industrial & Engineering Chemistry Research, Vol. **44** No. 4, 1052-1066, 2005.
4. "Influence of Molecular Parameters and Processing Conditions on the Rheology of Hydrogenated Nitrile Butadiene Rubbers", **Rehan A. Chaudry, Ibnelwaleed A. Hussein, Basel F. Abu Sharkh, Mohammad B. Amin**, Applied Polymer Science, **97**(4), 1432-1441, 2005.
5. "Influence of Mw of LDPE and vinyl acetate content of EVA on the Rheology of Polymer Modified Asphalt", **Ibnelwaleed A. Hussein, Mohammed H. Iqbal, Hamad I. Al-Abdul Wahhab**, Rheologica Acta, **45**(1), 92-104, 2005.
6. "Influence of Hydrophobe Content on the Solution Rheology of SO₂, N,N-diallyl-N-carboethoxymethylammonium chloride-co-N,N-diallyl-N-octade-cylammonium chloride Polymer", **Ibnelwaleed A. Hussein, M.S. Mozumder, R. Al-Naizy, B.F. Abu Sharkh**, European Polymer Journal, **41**(10), 2472- 2482, 2005.
7. "Influence of Branching Characteristics on Thermal and Mechanical Properties of Ziegler-Natta and Metallocene LLDPE blends with LDPE", **Ibnelwaleed A. Hussein, Tayyab Hameed**, J. Applied Polymer Science, **97**(6), 2488-2498, 2005
8. "A new approach to utilize Hydrogen as a Safe Fuel" **H.K. Abdel-Aal, M. Sadik, M. Bassyouni and M. Shalabi**, International Journal of Hydrogen Energy **30**, Issues 13-14 (2005) 1511-1514
9. "A Study on Durability of Metal Joints Bonded with Aluminum Powder Filled Epoxy Adhesive", **Kahraman, R.**, Materials Science and Technology, **21**:2, 259-262 (2005)
10. "Effects of Aluminum Filler Content on Moisture Diffusion into Epoxy Adhesive in Distilled Water and Sea Water", **Kahraman, R.**, Journal of Applied Polymer Science, **98**, 1165-1171 (2005).

Electrical Engineering

1. "A Robust Damping Controller for SMES Using Loop-shaping Technique", **A.H.M.A.Rahim** and E.P.Nowicki, Intl. J. of Electrical Power and Energy Systems, Vol.27, No 5-6, June-July 2005, pp. 465-471.
2. "Magnetized Semiconductor Phase Shifters for Millimeter-wave Microstrip Array Antennas" **Sheikh S.I. and Dawoud M.**, Correction and resubmission required in IEEE Microwave and Wireless Component Letters (MWCL), Vol.15, No.11, November, 2005, pp.790-792.
3. "Performance of Compact Integratable Broadband Antenna", **Sheikh S.I.**, Guha D. and Siddique J. Y., Electromagnetics, Vol 25, No. 4, May, 2005.
4. "A Union Bound on the Error Probability of Binary Codes Over Block Fading Channels," **Salam Zummo**, Peng-Cheng Yeh and Wayne Stark, IEEE Trans. on Vehicular Technology, Vol. 54, No. 6, November, 2005.
5. **M.T. Abuelma'atti**, "Analysis of the effect of Radio Frequency Interference on the DC Performance of CMOS Operational Amplifiers," Analog Integrated Circuits and Signal Processing, Vol. 45, 2005, pp. 123-130.
6. "A new Polyphase Current-Mode Filter Using Programmable-Gain Current-Controlled Current-Conveyer," **M.T. Abuelma'atti and S.M. Al-Shahrani**, WSEAS Transactions on Electronics, Vol. 2, 2005, pp. 153-156.
7. "Soft Constraint Satisfaction Multimodulus Blind Equalization Algorithms", S. Abrar, **A. Zerguine and M. Deriche**, IEEE Signal Processing Letters, Vol. 12, No. 9, September 2005, pp. 637-640.
8. "Investigation Into The Seebeck Coefficient in Two-Layer Assembly During Laser Short-Pulse Heating," Bekir S. Yilbas and **M. Kassas**, Japanese Journal of Applied Physics, Vol. 44, No. 8, August 2005, pp. 6068-6074.
9. "A Compact 90° Three-Branch Beam Splitter Based on Resonant Coupling", **H. A. Jamid, M. Z. M. Khan** and M. Ameeruddin, IEEE/OSA Journal of Lightwave Technology, Vol. 23, No. 11, November 2005, pp. 3900-3906.
10. "A study on thermodynamic potential energy for magnetostrictive systems", Mehmet Sunar, and **Jamil M. Bakhawain**, International Journal of Exergy (IJEx), Vol.2, No.3, 2005.

Mechanical Engineering

1. "Ultrasonic Wave Transmission in Periodically Undulated Elastic Plates," **Hawwa, M. A.**, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, 52(9), pp. 1743-1747, October 2005.
2. "Laser-Generated Thermoelastic Waves in an Anisotropic Infinite Plate: FEM Analysis," **Al-Qahtani, H., Datta, S., and Mukdadi, O.**, Journal of Thermal Stresses, Vol. 28, Number 11, November 2005, pp. 1099-1122.

3. "Quick Performance Prediction of Liquid Desiccant Regeneration in a Packed Bed," **Gandhidasan, P.**, Solar Energy. Vol. 79 (2005), pp. 47-55.
4. "Modeling and Testing of a Dew Collection System," **Gandhidasan, P.** and **Abualhamayel, H. I.**, Desalination. Vol. 180 (2005), pp. 47-51.
5. "Experimental Study of an Aqueous Desiccant Mixture System: Air Dehumidification and Desiccant Regeneration," **Al-Farayedhi, A. A., Gandhidasan, P., Antar, M. A. and Abdul Gaffar, M. S.**, Proc. IMechE Part A: Journal of Power and Energy, Vol.219 (2005), pp. 669-680.
6. "Finite Element Dynamic Analysis of Drillstrings", **Khulief, Y.A. and Al-Naser, H.**, J. Finite Element in Analysis & Design, Vol. 41, 2005, p.1270-1288.
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9. RESEARCH PAPERS PRESENTED AT CONFERENCES REPORTED AFTER JULY, 2005

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2. "Long-Term Performance of Epoxy-Coated Steel Bars in Chloride-Contaminated Concrete," **Al-Amoudi, O.S.B., Maslehuddin, M., and Al-Idi, S.H.**, 6th International Congress on Global Construction: Ultimate Concrete Opportunities, Dundee, Scotland, July 5 to 7, 2005.
3. "Corrosion Performance of Reinforced Concrete in Sulfate-Chloride 'Sabkha' Media: A Review," **Al-Amoudi, O.S.B.**, Invited Paper, Workshop on: Corrosion and Protection of Metals, Arab School for Science and Technology, December 3 to 7, 2005, Kuwait (accepted for presentation and publication).
4. "Performance of Damaged Fusion-Bonded Epoxy-Coated Rebars (FBE CR) in Chloride-Contaminated Concrete," **Al-Gahtani, A.S., Ismail, M., Khan, M.M. and Al-Amoudi, O.S.B.**, Three-Day CANMET/ACT International Symposium on: Sustainable Development of Cement and Concrete, October 5-7, 2005, Toronto, Canada, accepted for presentation and publication.
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3. "Effect of Nonlinear Equilibrium on Zero Length Column Experiments in Mesoporous or Macroporous Sorbents: Limiting Analytical Asymptotic Forms", **Loughlin, Kevin F.**, Session Selection: 02E07 Experimental Methods in Adsorption, AIChE Conference, Cincinnati, Ohio, USA, Oct 30-Nov 4, 2005.

4. "Kinetics of Sorption of 1,3 di-isopropyl benzene and 1,3,5 tri-isopropyl benzene in NaY Method", **Kevin F. Loughlin, Sulaiman S. Al-Khattaf & Sharif F. Zaman**, Session Selection: 02E02 Fundamentals of Adsorption and Ion Exchange II, AICHE conference, Cincinnati, Ohio, USA, Oct 30-Nov 4, 2005.
5. "Modeling and Simulation of A Combined Reactor/Pressure Swing Adsorption Unit for Isomerization of a Mixed Feed Of Pentanes And Hexanes", **Kevin F. Loughlin, and Tareg M. Al-Soudani**, Session Selection: 02E04 PSA/TSA, AICHE conference, Cincinnati, Ohio, USA, Oct 30-Nov 4, 2005
6. "A Study of Permeability and Tortuosity of concrete", **Ahmad, S., Azad, A., and Loughlin, K. F.**, 30th Conference on our World in Concrete and Structures, 23-24 August 2005, Singapore, Volume XXIV (2005): pages 153-160
7. "Reduction of Aromatics Cracking on Alumina by Pyridine Adsorption" **M. A. Shalabi and H.K, Abdel-Aal**, 230th ACS National Meeting, Petroleum Chemistry Division, Washington DC, 28 Aug-Sept 1 2005.
8. "Transalkylation of Heavy Aromatics for Enhanced Xylene Production", **M. Ashraf Ali, M.A. Al-Saleh, T. Inui, A. Aitani, S. A. Ali, K. Al-Nawad**, 15th Annual Saudi-Japanese Symposium on Catalysts in Petroleum Refining & Petrochemicals, KFUPM-RI, November 27, 2005

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11. "Tracking Analysis of the NLMF Algorithm in the Presence of both Random and Cyclic Nonstationarities," M. Moinuddin, **A. Zerguine and A. U. Sheikh**, ISSPA 2005, Sydney, Australia, August 28-31, 2005.
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13. "Application of Particle Swarm Optimization Algorithm to Multiuser Detection in CDMA," H. El-Morra, **A. U. Sheikh, and A. Zerguine**, PIMRC 2005, Berlin, Germany, September 11-14, 2005.
14. "Adaptive dissection based subword segmentation of printed Arabic text" **A. Zidouri**, M. Sarfraz, S. A. Shahab and S. M. Jafri, The 9th International Conference on Information Visualisation IV05 (6-8 July 2005) London.
15. "A Novel Approach for Skew Estimation of Document Images in OCR System" M. Sarfraz, **A. Zidouri**, S. A. Shahab and S. M. Jafri, IEEE proceedings of the International Conference on Computer Graphics, Imaging and Vision (CGIV 2005) Beijing, China, 26-29 July 2005.

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Petroleum Engineering Department

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Physics Department

1. "External Gamma Radiation Survey for Oil Wellheads in the Southern Producing Area", **R. M. Nassar, F. Z. Khiari, A. Aksoy, M. A. Garwan, M. Raashid, Fazal-ur-Rehman and M. Azadul Islam**, Final Report, SAUDI ARAMCO Project # CAPS2223, September 2005.
2. "Heat treatments using a modified Kitchen microwave", **S. Quraishi and N. Tabet**, Proposal funded by College Grants, September 2005.
3. "Properties of CNx thin films obtained by DC magnetron reactive Plasma", **S. Quraishi and N. Tabet**, SABIC proposal, submitted, Nov. 2005.
4. "Measurement of Chloride and Sulfate Ions Concentration in Concrete Samples for Corrosion Studies using PGNAA Technique", **A. A. Naqvi, M. M. Nagadi and O. S. B. Al-Amoudi**. Final Report, Project # SABIC-2002/03, Aug. 2005.
5. **A. Mekki and GD Khattak**, Final report Fast track project #SAB/2004/04, entitled "Structure and magnetic properties of transition metal doped tellurite glasses", Sept 2005.

College of Environmental Design

City & Regional Planning Department

1. “An Investigation into the Application of GIS for Infrastructure and Facilities Management in Saudi Arabia: A 2-years KFUPM Funded project. **Adel S. Aldosary, and Shuaib, B. Garba** (Principal Investigator). Final Report.

12. SEMINARS OFFERED BY KFUPM FACULTY

Civil Engineering Department

1. Time Management,” a presentation for Qafelat Al-Khair, the Youth Gathering, Dammam, July 2005.
2. “The Role of The Counseling and Advising Center at King Fahd University of Petroleum and Minerals in the Educational Process: Psychological, Social and Academic Performance Issues”, The Role of Social and Psychological Counseling in the Educational Process Workshop, Hems, Syria, August 2005.
3. “The Role and Duties of Faculty Members in Student Counseling/ Advising,” a presentation for the faculty members of the Dammam Girls College, August 2005.
4. “Priority Setting and Time Management,” a presentation for the Personnel of The Commission for Enjoining Good and Forbidding Evil, The Excellence Workshop, Dammam, September 2005.
5. “University Student Counseling: KFUPM Experience in Counseling and Automation,” Vision for Changing Environment, First Workshop on Social Counseling and Guidance, Muscat, Oman, December 2005.

Chemical Engineering Department

- | | | | |
|----|---------|---|--|
| 1. | Speaker | : | Mr. Khaled M. Al-Dossary |
| | Title | : | Development of a Solid Liquid Mass Transfer Probe based on Limiting Diffusion Current: Application in Stirred Tanks |
| | Date | : | October 9, 2005 |
| | | | |
| 2. | Speaker | : | Mr. Mohammad Hasan Arshad |
| | Title | : | Second Law Analysis of Compressible Fluid in a Variable Area duct Subjected to Constant Temperature and Heat Flux Boundary Condition |
| | Date | : | October 25, 2005 |
| | | | |
| 3. | Speaker | : | Dr. S. U. Rahman |
| | Title | : | Limiting Diffusion Current |
| | Date | : | November 15, 2005 |
| | | | |
| 4. | Speaker | : | Mr. Ghazi Al-Otaibi |
| | Title | : | Investigations of Mixing in Mechanically Stirred Tanks |
| | Date | : | November 22, 2005 |
| | | | |
| 5. | Speaker | : | Mr. Mohammad Awwal Suleiman |
| | Title | : | Influence of Tacticity and Mw on the Compatibility of PP/LDPE Blends |

- Date : November 29, 2005
6. Speaker : Prof. Sigurd Skogestad, Univ of Trondheim, Norway
 Title : Distillation: So simple but yet so complex, and vice versa
 Date : December 4, 2005
7. Speaker : Prof. Joao B.P. Soares, Univ of Waterloo, Canada
 Title : Polymer Reaction Engineering at the University of Waterloo: An Overview of Research Projects and Methods
 Date : December 7, 2005
8. Speaker : Mr. Sumon Kazi
 Title : Extraction of Aromatics Using Green Solvents Based on Ionic Liquids
 Date : December 27, 2005

Electrical Engineering Department

1. Speaker : **Sheikh S.I**
 Topic : Ferrite Based Integrated Power Division and Tunable Phase Shifter Adaptive Neural Networks Controller
 Date : 27 September, 2005
2. Speaker : **El-Amin, Ibarahim**
 Topic : Harmonic Analysis of a Welding Process
 Date : 27th September, 2005
3. Speaker : **Tareq Y. Al-Naffouri**
 Topic : A framework for the estimation of time-variant channels in OFDM
 Date : 15 November, 2005
4. Speaker : **Masoud, Ahmed**
 Topic : A Hybrid PDE-ODE Controller for Intercepting an Intelligent, Well Informed Target in a Stationary Cluttered Environment
 Date : 22 November, 2005
5. Speaker : **Belhadj, Chokri**
 Topic : Segregated Residential Air Conditioner Load Model Behavior with Temperature and Humidity
 Date : 29 November, 2005.
6. Speaker : **Salam Zummo**
 Topic : Coded Cooperation in Wireless Networks or On the Positioning Capability of UWB Systems
 Date : 6 December, 2005

Mechanical Engineering Department

1. Speaker : Dr. Moslehuddin
Title : Corrosion of Reinforcing steel in concrete – causes and prevention.
Date : September 27, 2005
2. Speaker : Dr. Muhammad A. Hawwa
Title : Development of a MEMS Actuator
Date : Nov. 22, 2005
3. Speaker : Dr. Amro Al-Qutub
Title : Innovation and Investment
Date : Nov. 22, 2005
4. Speaker : Dr. B.S. Yilbas
Title : Effect of Process Parameters on a Laser Cutting Process
Date : Dec. 13, 2005
5. Speaker : Mr. Ali Al-Mubarak
Title : Parametric study of heat transfer characteristics in a quadrangular channel with inclined target surface cooled by single array of impinging jets
Date : Dec. 20, 2005

Aerospace Engineering Department

1. Speaker : Dr. A.M. Al-Garni
Topic : Airfoil with Leading Edge Rotating Cylinder
Date : 2005G (1426H)

Chemistry Department

1. Speaker : Dr. Bassam El Ali
Topic : Regioselective catalytic hydrocarboxylation of alkynes by palladium complexes
Date : Tuesday, 11:00 AM, 11th October, 2005
2. Speaker : Dr. Hassan M. Badawi
Topic : Conformational Equilibria and Structural Stability of Multi Rotors Molecular System
Date : Tuesday, 11:00 AM 18th October, 2005

Earth Sciences Department

1. Speaker : Dr. Mahbub Hussain
 Title : Outcrop-based regional geology, culture, people and traditions of Saudi Arabia: experience from geological field trips: Dhahran Geoscience Society, Dinner Meeting Talk, Dhahran,
 Date : April 2005
2. Speaker : Prof. Gabor Korvin
 Title : Teaching Practical Mathematics
 Date : October 11, 2005 (Math. Education Seminar)
3. Speaker : Dr. Zulfiqar Ahmed
 Title : The Hard Rocks of Saudi Arabia
 Date : November 20, 2005 (Physics Seminar)
4. Speaker : Dr. Zulfiqar Ahmed
 Title : Geological Features of the Abha - Khamis Mushyat Region
 Date : November 29, 2005

Information & Computer Science

1. “Termination and Learnability Results for Logic Programs”, **M.R.K. Krishna Rao**, Griffith University, Brisbane, Australia, July 2005.
2. “Decidable Termination of Logic Programs”, **M.R.K. Krishna Rao**, Tata Institute, Bombay, India, August 2005.

Systems Engineering Department

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|---------|---|--|
| Speaker | : | Dr. Mansour Al-Dajani (Asst. Prof., SE Dept.) |
| Topic | : | “Efficient Decision Feedback Equalization for Wireless Communications Using Power-of-Two Quantization” |
| Date | : | October 04, 2005 |
| Speaker | : | Mr. Naveed Butt (RA, SE Dept.) |
| Topic | : | “A New Hybrid Constant-Modulus Algorithm for Efficient Channel Equalization” |
| Date | : | October 18, 2005 |
| Speaker | : | Mr. Sameer Al-Zahrani (GS/PT, SE Dept.) |
| Topic | : | “A Model for Procurement Process Evaluation and Improvement at Saudi ARAMCO” |
| Date | : | November 22, 2005 |

Speaker : Dr. Malick Ndiaye (Asst. Prof., SE Dept.)
Topic : “Locating Facilities with Various Distance Functions”
Date : December 06, 2005

Speaker : Mr. Tahir Khan (RA, SE Dept.)
Topic : “Newton-Raphson Based Adaptive Inverse Control Scheme for Tracking of Non-linear Dynamic Plants”
Date : December 13, 2005

SPEAKER : Mr. Firas Tuffuha (Lec. B, SE Dept.)
TOPIC : “Application of Particle Swarm in the Optimization of Non-Convex Function”
DATE : December 13, 2005

SPEAKER : Mr. Surajdeen Ilyas (RA, SE Dept.)
TOPIC : “Training Artificial Neural Networks Using Particle Swarm Optimization”
DATE : December 20, 2005

SPEAKER : Mr. Wed H. Al-Sadah (GS/PT, SE Dept.)
TOPIC : “Real-Time Simulation of Computer Based Self Tuning Regulators (STR)”
DATE : December 27, 2005

SPEAKER : Mr. H. A. Al-Askari (GS/PT, SE Dept.)
TOPIC : “Design of a Mask Function to Improve Defect Detection in Electronic Components”
DATE : December 27, 2005

Mathematical Sciences Department

Lecturers/Seminars by Math Faculty:

1.	Speaker	:	Prof. Ashfaq Hussain Bokhari
	Title	:	Symmetry Methods for Partial Differential Equations
	Date	:	Sunday, 18 September 2005
2.	Speaker	:	Dr. Salim A. Messaoudi
	Title	:	On Some Singular Viscoelastic Problems
	Date	:	Sunday, 25 September 2005
3.	Speaker	:	Dr. Raja Mohammad Latif
	Title	:	Characterizations of Contra-Gamma-Continuous Mappings
	Date	:	Sunday, 2 October 2005
4.	Speaker	:	Dr. Monther Al-Furaidan
	Title	:	Spectral Characterization of Distance-Regular Graphs

	Date	:	Sunday, 9 October 2005
5.	Speaker	:	Dr. N. Tatar (Diff. Equations Research Lab. Seminar)
	Title	:	A Fractional Differential Problem of Neutral Type
	Date	:	Tuesday, October 11, 2005
6.	Speaker	:	Prof. A.H. Siddiqi
	Title	:	Wavelet and Fractal Methods for Analyzing Meteorological
	Date	:	Data
		:	Sunday, October 16, 2005
7.	Speaker	:	Dr. Tahir Mustafa
	Title	:	Restrictions on Harmonic Morphisms of Warped Type and their
	Date	:	Applications
		:	Sunday Oct 23, 2005
8.	Speaker	:	Dr. Abdelkader Boucherif
	Title	:	Positive Solutions of Second Order Boundary Value Problems
	Date	:	Sunday, November 20, 2005
9.	Speaker	:	Dr. Hasan Azad
	Title	:	Symplectic Geometry of Semisimple Orbits
	Date	:	Sunday, November 27, 2005
11.	Speaker	:	Dr. Anwar H. Joarder
	Title	:	On the Evaluation of a Double Integral
	Date	:	Sunday, December 18, 2005
12.	Speaker	:	Prof. M. El-Gebeily
	Title	:	Existence and Quasilinearization Methods in Hilbert Space
	Date	:	Sunday, December 25, 2005

Math Education Seminars

1.	Speaker	:	Mr. B. Yushau
	Title	:	Problem Solving in Mathematics Education
	Date	:	Tuesday, September 27, 2005
2.	Speaker	:	Prof. Gabor Korvin (Earth Sciences Dept.)
	Title	:	Teaching Practical Mathematics
	Date	:	Tuesday, October 11, 2005
3.	Speaker	:	Mr. Ibrahim Al-Salem
	Title	:	How to use Smart Classrooms Smartly?
	Date	:	Tuesday, October 18, 2005
4.	Speaker	:	Dr. Hassan Azad
	Title	:	What is $d(x)$?
	Date	:	Tuesday, October 25, 2005
5.	Speaker	:	Dr. Anwar H. Joarder & Dr. Walid S. Al-Sabah
	Title	:	A Problem Related to without Replacement Sampling
	Date	:	Tuesday, November 22, 2005
6.	Speaker	:	Prof. Abul Hasan Siddiqi
	Title	:	Education of Financial Mathematics
	Date	:	Tuesday, December 13, 2005

Lectures/Seminars by outside Speakers

1.	Speaker	:	Dr. Asghar Qadir, Adjunct Prof. (National University of Science and Technology, NUST- Rawalpindi, Pakistan)
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	Title	:	Geometrical Methods for Solving Differential Equations
	Date	:	Sunday, December 4, 2005

Research (StaR) Group Seminar

1.	Speaker	:	Prof. Anwar H. Joarder
	Title	:	The Expectation of Sample Variance: An Elegant Approach
	Date	:	Tuesday, 20 September, 2005
2.	Speaker	:	Dr. Hassen H. Muttalak
	Title	:	Cumulative Sum Quality Control Charts Using Ranked Set Sampling
	Date	:	Tuesday, 27 September, 2005
3.	Speaker	:	Prof. Anwar H. Joarder
	Title	:	The Distribution of Correlation Coefficient Based on a T-Population
	Date	:	Tuesday, 11 October, 2005
4.	Speaker	:	Mr. Esam Al-Sawi
	Title	:	Introduction to the SPSS Statistical Package
	Date	:	Tuesday, 25 October, 2005
5.	Speaker	:	Dr. Ibrahim Rahimov
	Title	:	Branching Stochastic Processes in Epidemiology
	Date	:	Tuesday, 22 November, 2005
6.	Speaker	:	Dr. Mohammad H. Omar
	Title	:	Some Statistics in Item Response Theory
	Date	:	Tuesday, 29 November, 2005
7.	Speaker	:	Dr. Waid A. Abu-Dayyeh
	Title	:	Exact Bahadur Slope for Combining Independent Tests incase of the Normal Distribution Using Simple Random Sampling and Ranked Set Sampling data
	Date	:	Tuesday, December 13, 2005

DERL (Differential Equations Research Lab)

1.	Speaker	:	Dr. N. Tatar
	Title	:	A Fractional Differential Problem of Neutral Type
	Date	:	Tuesday, October 11, 2005
2.	Speaker	:	Prof. A. Boucherif
	Title	:	Continuation Methods and Nonlinear Boundary Value Problems
	Date	:	Tuesday, October 25, 2005
3.	Speaker	:	Dr. A.R. Khan and Mr. A.A. Domlo
	Title	:	Common Fixed Points of Weakly Compatible Mappings and Differential Equations
	Date	:	Tuesday, December 20, 2005
4.	Speaker	:	Dr. Nasser-eddine Tatar
	Title	:	On a Viscoelastic problem with a Positive Definite Kernel
	Date	:	Tuesday, December 27, 2005

Thesis Defense

1.	Speaker	:	Mr. Aijaz Ahmad
	Title	:	Symmetry Solutions of Some Non-Linear DE's

	Date	:	Tuesday, October 18, 2005
2.	Speaker	:	Mr. Sogome Suraizou
	Title	:	Non-Noetherian Krull Domains Issued From Symbolic Blow-up and Rees Algebras
	Date	:	Sunday, December 18, 2005

(I) Seminars by Prof. Abdul Hamid Kara

1.	Speaker	:	Prof. Abdul Hamid Kara (Univ. Witwatersrand, Johannesburg, South Africa)
	Title	:	Noether-type symmetries and conservation laws via partial Lagrangian
	Date	:	Sunday, 11 Dec. 2005
2.	Speaker	:	Prof. Abdul Hamid Kara (Univ. Witwatersrand, Johannesburg, South Africa)
	Title	:	Software and Symmetry Methods
	Date	:	Tuesday, December 27, 2005

(II) Lecture series by Prof. Abdul Hamid Kara

1.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Lie Symmetry: An overview
2.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Symmetries and conservation laws
3.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Approximate symmetries
4.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Approximate symmetries of lagrangians
5.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Perturbation of evolution type equations
6.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Conservation laws and symmetries of reduced systems
7.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Potential symmetries
8.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Recent trends in symmetries of PDEs
9.	Speaker	:	Prof. Abdul Hamid Kara
	Title	:	Use of software packages and symmetry methods

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

September–December 2005

(Seminars given by the following faculty members)

1.	Speaker	:	Dr. J. Abuhlail
	Title	:	Valuations and valuation domains
2.	Speaker	:	Dr. J. Abuhlail
	Title	:	Prüfer domains of finite character
3.	Speaker	:	Dr. J. Abuhlail
	Title	:	Reflexive domains
4.	Speaker	:	Dr. J. Abuhlail
	Title	:	Tilting modules over small dedekind domains (I)
5.	Speaker	:	Dr. J. Abuhlail
	Title	:	Tilting modules over small dedekind domains (II)

6.	Speaker Title	:	Dr. J. Abuihlail Tilting modules over valuation domains (1)
7.	Speaker Title	:	Dr. J. Abuihlail Tilting modules over valuation domains (II)
8.	Speaker Title	:	Dr. I. Al-Rasasi Regular basis for integer-valued polynomial rings
9.	Speaker Title	:	Dr. I. Al-Rasasi Stone-weierstrass theorem for integer-valued polynomial rings
10.	Speaker Title	:	Dr. I. Al-Rasasi Integral closure of integer-valued polynomial rings
11.	Speaker Title	:	Dr. I. Al-Rasasi Pr ü fer and noetherian properties of integer-valued polynomial rings
12.	Speaker Title	:	Dr. I. Al-Rasasi Introduction to integer-valued rational functions
13.	Speaker Title	:	Dr. I. Al-Rasasi On the $\dim(\text{Int}(R))$ conjecture
14.	Speaker Title	:	Dr. A. Mimouni Some results on the set of t-linked overrings of an integral domain (1)
15.	Speaker Title	:	Dr. A. Mimouni Two-dimensional regular local rings
16.	Speaker Title	:	Dr. A. Mimouni The core of an ideal (1)
17.	Speaker Title	:	Dr. S. Kabbaj t -Class semigroups of integral domains (Final report of research project# MS/T-class/257 by S. Kabbaj and A. Mimouni)

Physics Department

- 1- دور الوسائط الإلكترونية في تنمية القدرات الإبداعية و الابتكارية، المنتدى الثاني لتعليم العلوم و شعبان، 16-17 الرياضيات بمحافظة جدة، إدارة التطوير التربوي بالإدارة العامة للتربية و التعليم للبنات، 1426
- 2- "Lasers and Laser Research at KFUPM", 22nd of Sha'ban, 1426, Meridian-Khobar, SAICSC-ACS.
- 3- LIDAR Monitoring Of Aerosols For Prediction Of Boundary Layer Heights, Phys Department, King Saud University, Riyadh, 7th June 2005, **M.A. Gondal** Physics Deptment, King Saud University Riyadh Saudi Arabia June 7, 2005.
- 4- "Laser-induced Desulfurization of Oil and other aromatic compounds", **M.A. Gondal**, Saudi Aramco, 18 June 2005

SEMINARS BY PHYSICS FACULTY

1. Speaker : Prof. Riazuddin
Title : Beyond X-Rays, a century of creativity in physics
Date : 18 September 2005
2. Speaker : Dr. M.A. Gondal

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|-----|---------|---|---|
| | Title | : | Laser application in environmental Sciences, Physics department, KFUPM |
| | Date | : | 24.September, 2005 |
| 3. | Speaker | : | Prof. Riazuddin |
| | Title | : | National Center for Physics & International Collaboration at Qaid-i-Azam University, Pakistan |
| | Date | : | 27 September 2005 |
| 4. | Speaker | : | Dr. A. Aksoy |
| | Title | : | Elemental Analysis of Petrochemical Catalysts by Neutron Activation Spectrometry |
| | Date | : | 02 October 2005 |
| 5. | Speaker | : | Dr. N. Tabet |
| | Title | : | DC-Magnetron Sputtering Synthesis and characterization of the physical properties of Zinc oxide thin films. |
| | Date | : | 04 October 2005 |
| 6. | Speaker | : | Mr. Mohanned Abu-Dayyah (Student) |
| | Title | : | Proposal for University Students International Competitions |
| | Date | : | 16 October 2005 |
| 7. | Speaker | : | Prof. M. I. Al-Jarallah |
| | Title | : | Future Power Production System(Accelerator Driven System) |
| | Date | : | 23 October 2005 |
| 8. | Speaker | : | Dr. K.A. Ziq |
| | Title | : | New Vortex State in MgB ₂ Superconductor |
| | Date | : | 13 Novovember 2005 |
| 9. | Speaker | : | Prof. A.A.Naqvi |
| | Title | : | Measurement of Chloride Concentration in Silica Fume and Fly ash Cement Concretes using PGNA technique |
| | Date | : | 18 December 2005 |
| 10. | Speaker | : | Al-Hasan Ahmed (Student) |
| | Title | : | The Non-relativistic Limit of Dirac Equation for a Particle with Position Dependent Mass |
| | Date | : | 25 December 2005 |

Department of Management & Marketing

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|----|---------|---|--------------------------------|
| 1. | Speaker | : | Dr. Salem M. Al-Ghamdi |
| | Title | : | Malaysian Experience in Export |
| | Date | : | December 13, 2005. |
| 2. | Speaker | : | Dr. Salem M. Al-Ghamdi |

Title : How to be Productive in Working Life
 Date : November 29, 2005

Finance & Economics Department

1. Speaker : Prof. Mansur Masih
 Title : Recent and ongoing advances in econometric methodology for applied research
 Date : Three-hour weekly workshop for the CIM faculty throughout the semester, 2005

2. Speaker : Professor Mansur Masih
 (as the holder of Bumiputra-Commerce Bank Chair in Finance and Banking, Northern University of Malaysia)
 Title : Recent and ongoing developments in econometric research methodology in Finance and Economics
 Date : Forty-hour research workshop given to fifty Malaysian faculty (June to August, 2005 at the Northern University of Malaysia)

13. SEMINARS OFFERED BY OUTSIDE SPEAKERS IN THE UNIVERSITY

Chemistry Department

1. Speaker : Prof. Riazuddin
 Topic : Fullerenes
 Date : Tuesday, 11:00 AM, 20 September, 2005

2. Speaker : Dr. Abdelmounam Mustafa Sherik
 Topic : Nanomaterials: Applications and Future Challenges
 Date : Sunday, 11:00 AM, 2nd October, 2005

3. Speaker : Dr. Gert-Jan M. Gruter
 Topic : From High Throughput Experimentation to High Output
 R&D
 Date : Sunday, 11: 00 AM, November 27, 2005

4. Speaker : Dr. Joerg-Peter Conzen & Dr. Mohamed Al-Higari,
 Topic : FTIR Spectroscopy & Research Applications
 and Solve Capillary Microextractions (in-tube SPME)
 Date : Sunday, 10:45 AM, 4 December, 2005

5. Speaker : Dr. Khalid R. Al-Hooshani
 Topic : Sol-Gel Materials for Chromatographic Separations
 Date : Tuesday, 11:00 AM, 13 December, 2005

Earth Sciences Department

1. Speaker : Dr. Panos G. Kelamis (Saudi Aramco)
 Topic : Pragmatic View of Land Multiple Attenuation
 Techniques
 Date : September 27, 2005 (Joint Seminar with RI)

2. Speaker : Dr. Geraint Wyn Hughes (Saudi Aramco)
 Title : Lithofacies and Biofacies of the Saudi Arabian Jurassic
 Date : October 15, 2005

3. Speaker : Dr. Taury Smith (New York State Museum)
 Title : Hydrothermal Alteration of Carbonate Reservoir:
 Models and Case Studies
 Date : October 17, 2005 (Joint Seminar with RI)

4. Speaker : Mr. Robert Lindsay (Saudi Aramco)
 Title : Permian Basin: Frontier to Oil Province
 Date : November 22, 2005

5. Speaker : Dr. Geraint Wyn Hughes (Saudi Aramco)

- Title : The Recent as a key to the Past – examples of biofacies applications for the Saudi Arabian Cretaceous
Date : December 6, 2005.
6. Speaker : Prof. Lou Fishman (University of Calgary, Canada)
Title : Phase Space and Path Integral Methods in Seismic Wave Propagation and Imaging
Date : December 7th, 2005
7. Speaker : Prof. Warren W. Wood (Michigan State University)
Title : Hydrogeology and Solute Chemistry of Coastal Sabkha: A New Paradigm
Date : December 13, 2005
8. Speaker : Prof. M.A. Gondal (KFUPM Physics Dept.)
Title : Effect of Industrial Pollution on Environment and Advanced (Laser Based) Air Monitoring Techniques.
Date : December 20, 2005

Mathematical Sciences Department

1. **Prof. Messaoudi, S.A.** “Decay of solution energy of some viscoelastic equations of hyperbolic type”, Math. Dept., Metz, France, June 30, 2005.
2. **Prof. Messaoudi, S.A.**, “Decay of solution energy of some viscoelastic equations of hyperbolic type”, Math. Dept., University of Setif, Algeria, July 4, 2005.
3. **A.H. Siddiqi**, “Recent Developments in Fractals”, Research Institute of Mathematics, Montreal University, Montreal, Canada, Aug. 11-15, 2005.
4. **A.H. Siddiqi**, “Wavelet packets on Sphere. Fifth International Conference on Sampling Theory and Applications”, Samsun University, Turkey, July 10-15, (2005).
5. **M.A. Bokhari**, “Self-Assessment of Academic Programs”, University of Sargodha, Sargodha, Pakistan (August 2005).
6. **M.A. Bokhari**, “King Fahd University of Petroleum & Minerals, Saudi Arabia: An Overview of Administrative and Academic Set-up”, University of Sargodha, Pakistan (August 2005).

Physics

1. Speaker : Dr. T. Ganesh
Title : SRS, SRT & IMRT
Date : 09 October 2005
2. Speaker: : Dr. Zulfiqar Ahmad (Earth Sciences Dept.)
Title : The hard rocks of Saudi Arabia
Date : 20 November 2005
3. Speaker : Prof. Ashgar Qadir

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| | Title | : | Matter Collineations |
| | Date | : | 27 November 2005 |
4. Speaker : Dr. Al-Jaafari
 Title : Synthesis and Characteristics of Silicon Carbide Nanowires
 Date : 04 December 2005
5. Speaker: Dr. Amalou (Jeddah)
 Title : Micro-Electro-Mechanical-Systems (MEMS) From
 Magnetism to Biotechnology
 Date : 11 December 2005