

RESEARCH NEWSLETTER

A RESEARCH COMMITTEE PUBLICATION

July, 2004

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FOREWORD

This issue of the University Research Newsletter provides up-to-date information about the research and other scholarly activities undertaken by the University faculty members for the half year period from January 2004 until June 2004. 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. During the academic year 2003-04, the University supported 74 projects in three categories, which shows an increase of about 54% from the number of projects supported in 2002-03. A noticeable trend is that while the number of internal funded projects is about the same, there has been an increase in the number of projects in the SABIC and Fast Track categories by about 48% and 188%.

During the current academic year, new research grants have been formulated such as Junior Faculty Research Grant and Special Societal Studies Research Grant. In addition to this, a new initiative has been taken in respect of Arabic Book Authoring and Translation.

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 Saudi society.

Our sincere appreciation is due to Mr. R. Jayaraman and Mr. Juned Laiq Syed for compiling this edition of the Research Newsletter.

Dr. Mohammad Al-Ohali
Chairman, Research Committee

2. ABSTRACTS OF SOME OF THE RESEARCH PROJECTS RECENTLY APPROVED FOR FUNDING

1. Project No. IAS/ECO. REFORMS/264 Investigator: Dr. Ibrahim Al-Mutrif (IAS)

TITLE: **Sabbatical Leave Research Proposal for writing a Book entitled “Saudi Economics Between Reforms and Opening Up: September 2001-2003”**

Abstract:

The world is facing historical changes from the last decade of the 20th century and with end of cold war, demolition of dual policy system and these changes appear clear in economic field which becomes a place for global competence among industrialized nations and their advanced economy, and capabilities of other nations which have an economy of weakness. In addition to these important historical changes which cannot be recognized and stabilized with the new global system, and the world is not stable with the new global system, and after all, the world faces with a new millennium of big changes which began with New York and Washington bombings on the 11th of September 2001 that was followed by two wars near our region, one in Afghanistan and nearly a month from September 11 events, and another in Iraq in March 2003, which ended the American occupation of Afghanistan under full international sovereignty and American-British occupation to Iraq under incomplete international sovereignty.

In this new international situation with its complexity, over-lapsed bonds and its dangerous effects on all aspects of life in our region, this book comes in time of need to discover the transformation of actuality. In this book, we try to present reading honesty and objectivity for Saudi economy.

The book includes the global economic conditions before September 2001 and followed up with reflection of this event on the American economy and the international economics among them the Arabic economy and especially the Saudi one.

We are going to study the Saudi economic conditions, and the programs of economical improvement at all levels from establishing the economical councils and the various commissions, to execute privatization programs passing the rules, executives, and laws which are objective to improve the investment environment, and present a real image to developing the national economy and its reflection on the development process and increase the economical development levels and enhance site of the Saudi economy and is global recognition.

About the Saudi economy, we will try to recognize about its progress among the upcoming global difficulties and they are many, from joining the World Trade Organization to fluctuating the oil prices to problems of establishing big industry in order to make an effort to construct pillars and solid basis depending on dualism of the economical commodities instead of singularity of the oil commodity; and how the Saudi economy will face the problem of economic region and world economy. Also, it will set the consequences of the Anglo-American War on Baghdad and the outcome of the Anglo-American occupation of Iraq and its image of the regional economy especially the Saudi economy, and then observe the economical future through the principal indicators of the different economical sectors and the economical performance levels in the last year.

**2. Project No. SE/CHAIN MODEL/265 Investigator: Dr. M. Ben Daya (SE)
Dr. Mohammed Darwish
Dr. Kadir Ertogral**

Title: Integrated Manufacturer-Retailer Supply Chain Models

A combination of market forces, such as globalization, significant advances in information and communication technologies, lowered trade barriers between countries, has forced companies to increase the efficiency in their operations, reduce costs, and become more responsive to changes. As a natural result, companies are pushed towards not only integrating different decision processes within their borders but also closely collaborating with their customers and suppliers.

Consider a two-layer supply chain consisting of a manufacturer and a retailer. The retailer (buyer) observes a deterministic demand and orders lots from the manufacturer (vendor). The vendor manufactures the requested product in lots. Each produced lot is shipped to the buyer in batches. The problem is to find the number of shipments and size of each batch such the joint manufacture and retailer cost is minimized. This problem received a lot of attention in recent years since better coordination and closer cooperation between different levels of a supply chain are in the joint benefit of all parties involved.

This proposal considers three main extensions of this problem. The first part deals with developing a unified approach for the deterministic and perfect-process models proposed in the literature. In the second part, integrated models involving transportation, maintenance and quality aspects will be developed. We will also relax the assumption of deterministic demand and investigate models involving stochastic demand. We anticipate that some of the developed models will be non-convex mixed nonlinear integer problems that cannot be solved by conventional optimization techniques. The third part of this proposal deals with developing efficient global optimization solution methods

3. Project No. CIM/ACT.FOUNDATION/266 Investigator: Dr. Omar Zaid (Act)

Title: ACCOUNTING FOUNDATIONS AND PRINCIPLES:THE ISLAMIC PERSPECTIVE

Abstract

It is generally accepted that accounting is the product of its environment. Furthermore, it can not be denied is that accounting foundations and principles are the cornerstone in directing and guiding the accountant in processing and presenting financial information in accordance with the needs of the environment. Accounting in the Muslim world was and is being taught and practiced from the Western perspective ignoring the fact that transactions conducted by Muslims have to comply with the *Shari'ah Islami'iah* as the code of life that rules the environment of Muslims personal, business and social life. The adoption of the accounting Western perspective was influenced by colonization and Western education.

The aim of establishing the Islamic perspective of accounting foundations and principles is to cater for the needed general foundations in processing, presenting, and interpreting accounting data in accordance with Shari'ah Islami'iah. The specification and explanation of the Islamic perspective of accounting foundations and principles will also establish the cornerstone and the term of

reference for the future establishment of accounting standards and procedures that should govern accounting education and practice in the Muslim society.

The specification of accounting foundations and principles should enable Muslim accountants to comply with the requirement of *Mu'amalat* "financial transactions" in the interest of entrepreneurs and other users of financial information especially for the purpose of *Zakat* "religious Islamic levy but not tax". Accountants take full responsibility for the provision of financial information forming the basis of *Zakat*. This responsibility requires accountants to subject the processing and presentation of financial information to the requirement of *Shari'ah Islami'iah* as being the essence of determining *Mu'amalat* as well as *Ibadat* (worship) of which *Zakat* is one of its pillars.

It is very important to understand that *Zakat* is the connecting chain between *Mu'amalat* and *Ibadat*. This connecting chain can be seen in the fact that *Zakat* is a mandatory requirement of *Ibadat* on the one hand and the result of *Mu'amalat* on the other. This position of *Zakat* is very critical and sensitive to the individual *Zakat* payer as well as to the *Zakat* recipients. This sensitivity and importance of *Zakat* transfers the responsibility of determining the *Zakat* base and calculation of *Zakat* from the *Zakat* payer to the accountant. To fulfill and discharge this responsibility of the accountant it is important to establish the framework that adequately identifies the accounting foundations in accordance with the requirements of *Shari'ah Islami'iah*. The Islamic perspective of accounting foundations and principles may not necessarily be different in terms of terminology but should be different in terms of interpretation and application. The interpretation and application of the Islamic perspective of accounting foundations and principles should stem from, apply to and recognizes the role of *Shari'ah Islami'iah* as the code of life that rules the environment of Muslims personal, business and social life.

**4. Project No. CE/MIX. DESIGN/267 Investigators: Dr. M.H. Baluch (CE)
Dr. Ali Al-Gadhib (CE)
Dr. M.K. Rahman (Res. Institute)**

**Title: INFLUENCE OF ENVIRONMENTAL VARIABLES & MIX DESIGN ON
MOISTURE TRANSPORT IN CONCRETE**

Abstract

Diffusion of moisture from concrete is a key physical process which has a significant influence on durability and integrity of concrete members. Moisture transport within concrete and from the concrete into the environment is influenced by several factors. The environmental factors influencing the process include the ambient humidity, concrete and ambient temperature and the wind speed. The material parameters that play an important role in the moisture transport problems include the moisture diffusivity and the convective surface transfer coefficient. These two material parameters are also significantly affected by the water-cement ratio in concrete.

The objective of this research is to investigate the influence of temperature and wind speed on moisture diffusivity D and convective surface transfer coefficient f for concrete materials. In addition, the role of water-cement ratio (w/c) in influencing D and f will also be established. To achieve this objective, a series of experiments are proposed, the data of which will be used to calibrate a finite element driven model that utilizes assumed functional forms of D and f in terms of unknown parameters which would be established by regression. The results of this study are important for basic and applied research. It will decipher the important role of hot and arid climate on moisture transport in concrete which in turn plays a significant role in concrete durability. Guidelines for selecting durable and crack free concrete mixes based on diffusivity of concrete will

be formulated.

**5. Project No. PH/COPOLYMERS/268 Investigators: Dr. Abdullah Al-Sunaidi (Phys)
Dr. Basel Abu-Sharkh (CHE)**

Title: **SELF-ASSEMBLY IN CONFINED SEMIFLEXIBLE CO-POLYMERS**

Abstract

We investigate the effect of confinement and chain rigidity on the self-assembly of semiflexible copolymers, using molecular dynamics simulation. We will consider diblock AB and triblock ABA copolymers, with the B block is of varying rigidity. The semi-flexibility is achieved by applying bond constraints between segments belonging to the same block. Confinement is achieved by putting the system between two neutral walls. The density of the system, the temperature, the repulsion between the A and the B blocks ϵ_{AB} , the walls separation d and the rigidity parameter Δ , will determine the final morphology of the system. At certain values of these parameters and for low enough T , we expect formation of lamellar structures with the B blocks showing nematic or smectic liquid-crystalline phase. For other values, we may see defects and aperiodic structures. We will also try to extend an existing mean-field theory in order to take account of semiflexibility and confinement.

6. Project No. MS/SPECTRAL/269 Investigator: Dr. Bilal Chanane (Math)

Title: **COMPUTATIONAL SPECTRAL THEORY**

Abstract

In this project, we investigate two important aspects of *computational spectral theory*: **non self-adjoint Sturm-Liouville problems** and **non-local Sturm-Liouville problems**. More specifically we shall compute the spectra of these classes of problems. The method, we shall use, is based on interpolation in a suitable Paley-Wiener space. It is expected that the results will further extend the scope of the method we are promoting and present a good contribution to the field.

7. Project No. MS/VISCOELASTIC/270 Investigator: Dr. Selim Messaoudi (Math)

Title: **ON THE LONG-TERM BEHAVIOR OF SOME VISCOELASTIC PROBLEMS**

Abstract

In this work, we study the long time behaviors of two problems arising in nonlinear viscoelasticity and in systems governing the longitudinal motion of a viscoelastic configuration obeying a nonlinear Voight model. We intend to weaken some restrictions imposed earlier by some authors to establish their decay results and improve some others, which we believe that they need to be sharpened

8. Project No. ICS/INT.RECOGNITION/271 Investigator: Dr. M. Sarfraz (ICS)

**Title: Computer-Aided Intelligent Recognition Techniques and Applications
(Bookwriting Project)**

Abstract

Intelligent Recognition techniques, Applications, Systems and tools are extremely useful in a number of academic and industrial settings. Specifically, Intelligent Recognition plays a significant role in multidisciplinary problem solving. It is extremely useful for personal identification in various situations like security, banking, police, postal services, etc. In particular, various problems like character recognition, iris recognition, face recognition, license plate recognition, fingerprint recognition, signature recognition, Sign Language Recognition etc., can be intelligently solved and automated. In addition to its critical importance in the traditional fields of character recognition, natural language processing, and personal identification, more recently, the Intelligent Recognition methods have also proven to be indispensable in a variety of modern industries, including computer vision, robotics, medical imaging, visualization, and even media.

This book aims to provide a valuable source, which focuses on interdisciplinary methods and affiliate up-to-date methodologies in the area. It aims to provide the user community with a variety of techniques, applications, systems and tools necessary for various real life problems in the areas such as:

- Information Technology
- Education
- Security
- Banking
- Police
- Postal Services
- Manufacturing
- Medical
- Scientific Data Visualization
- Virtual Reality
- Others

It aims to collect and disseminate information in various disciplines including:

- Pattern Recognition
- Artificial Intelligence
- Computer Vision
- Computer Graphics
- Image Processing
- Neural Networks
- Fuzzy Logic
- Data Bases
- Evolutionary Algorithms
- Shape Analysis and Description
- Numerical Analysis
- Others

The major goal of this book is to stimulate views and provide a source where students, researchers, and practitioners can find the latest developments in the field of Intelligent Recognition. Due to speedy scientific developments, there is a great deal of thirst among the scientific community worldwide to be equipped with state of the art and up-to-date theory and practice to get their problems solved in diverse areas of various disciplines. Although, a good amount of work has been done by researchers, yet a tremendous interest is increasing everyday due to complicated problems being faced in academia and industry.

This book is planned to have around twenty chapters. These chapters will contribute towards intelligent recognition *Techniques, Applications, Systems and Tools*. The book is planned to have best possible utility for researchers, computer scientists, practicing engineers, and many others who seek state of the art techniques, applications, systems and tools for Intelligent Recognition. It will also be equally and extremely useful for undergraduate senior students as well as graduate students in the areas of Computer Science, Engineering, and other computational sciences.

**9, Project No. CHE/DISTILLATION/272 Investigators: Dr. Mohammad Al-Arfaj (Che)
Dr. Hussain Al-Duwaish (EE)**

Title: Development and Application of State Estimators in Control of Reactive Distillation

Abstract

The increasingly more aggressive global competition for the production of higher quality products at lower costs has placed considerable pressure on the process engineers to operate the existing plants more efficiently. Moreover, effective control and monitoring of a process requires sufficient information on the state of the process, which is uniquely specified by the process state variables. In practice, on-line measurements of all the variables of a process are rarely available, and in such cases, reliable information on the immeasurable state variables is obtained by using state observer.

The present research proposal aims at developing state estimators which can infer the column compositions from temperature measurements or other process states in the reactive distillation process. The accuracy of the state estimator will be checked by comparison with compositions predicted by the process model of the reactive distillation system. The state estimator will be implemented in the control system of the reactive distillation process. The performance of the estimator at various control systems will be examined and compared to the control system which takes direct measurement from the process model.

10. Project No. MS/DAM/273 Investigator: Dr. A. Lyaghfour (Math)

Title: On the Dam Problems with Two Fluids

Abstract

The dam problem with one fluid has attracted the attention of too many researchers over the last twenty years. However, there are few mathematical papers dealing with this problem in case of two fluids. Among them, the paper by H.W. Alt, L.A. Caffarelli and A. Friedman [ACF] which deals with the case of the linear Darcy law. Here, we would like to study this problem for nonlinear Darcy's law.

11. Project No. MS/SINGULAR ODE/274

Investigators: Dr. M. El-Gebeily (Math)
Dr. Khaled Furati (Math)
Dr. Hattan Tawfiq (Math)

Title: Approximating Singular ODEs by Nearby Regular Ones: Theoretical and Computational Issues

Abstract

We propose to approximate the singular differential operator by a nearby regular one. This can be done in a general framework that is applicable to other disciplines. Then we study the applicability and effectiveness of existing numerical methods to such problems. Since the approximating problem is nearly singular, we expect that special linear system solves as well as iterative methods will feature prominently in our treatment. As a new approach, we also propose to take advantage of the special structure of the self-adjoint operators associated with these problems.

12. Project No. CHE/MTBE/275

**Investigators: Dr. Raafat Al-Anaizy (Che)
Dr. Nadhir Al-Baghli (Che)**

Title: Photooxidation of MTBE in the Presence of Hydrogen Peroxide

Abstract

Recently advanced oxidation processes (AOPs) involving hydroxyl radicals generation by UV radiation combined with a chemical oxidant such as ozone or hydrogen peroxide have been shown to be effective for organic contaminants degradation that are resistant to biological oxidation processes. Remediation of contaminated water with UV radiation combined with hydrogen peroxide (UV/H₂O₂) will be studied. The photochemical oxidation will be performed in a completely mixed-batch-photolytic reactor. The UV irradiation source is a low-pressure mercury vapor lamp that is axially centered and immersed in the contaminated solution. The effect of hydrogen peroxide (H₂O₂) dosage, initial contaminant concentration, H₂O₂/contaminant molar ratio, pH, and temperature will be investigated. The experimental results will be examined for an optimum H₂O₂/contaminant molar ratio with emphasis on hydrogen peroxide and the initial contaminants concentration to expose any inhibitory effect on the photooxidation rate.

In addition, this study aims to understand the contaminant degradation mechanism. High performance liquid chromatography (HPLC) will be used to identify the oxidation products and determine their concentrations. Finally, an overall kinetic model for the organics oxidation in water by UV radiation combined with hydrogen peroxide will be developed.

13. Project No. CEM/VALUE ENG./276

Investigator: Dr. Mohammad Al-Khalil (CEM)

Title: The Value Engineering Experience at Saudi Aramco (Sabbatical Leave)

Abstract

The purpose of the sabbatical leave is to conduct research in order to present in detail the

experience of Saudi Aramco in value engineering. This overall purpose will be achieved by realizing several objectives. These objectives will include a description of the content of the program, its organizational structure, policies and procedures used, training requirements associated with the program, and the nature of difficulties encountered. The study will also research what the value engineering specialists, at the program, consider to be the success factors in a value engineering program. The research is needed because the Saudi Government has mandated the use of value engineering studies for the majority of Government projects and programs. In order to fulfill these requirements, Government agencies will find it necessary to establish value engineering programs and train staff in the area. Consequently, they will find research of any local experience beneficial.

It is also important for the Department of Construction Engineering & Management since Value Engineering is offered as a course in the Department. Industrial experience would enrich the content of the course. The research is also important to KFUPM because of the emerging need for research and training in value engineering in the Kingdom. KFUPM can become a leader in meeting these needs, especially since value engineering is within the area of expertise of the well-qualified CEM Department.

**14. Project No. CY/NMR STUDY/277 Investigators: Dr. Anvarhusain Isab (Chem)
Dr. M.I.M. Wazeer (Chem)**

Title: Multinuclear NMR Study of the Interactions of some Sulfur Containing Biologically Important Ligands with Cd^{2+} and Hg^{2+} Ions

Abstract

The interaction of ^{13}C , ^{15}N labelled thiourea $\{\text{S}=\text{C}(\text{NH}_2)_2\}$ (*Tu), and selenourea $\{\text{Se}=\text{C}(\text{NH}_2)_2\}$ (*SeU), ^{13}C (cysteine), ergothionine with $^{113}\text{CdCl}_2$ will be studied by ^{13}C , ^{15}N , ^{77}Se , ^{113}Cd NMR spectroscopy.

Synthesis of ^{13}C , ^{15}N labelled imidazolidine-2-thione (*Imt) will be carried out and their complexation with $^{113}\text{CdCl}_2$ and with $^{113}\text{Cd}(\text{C}_6\text{H}_5)_2$ will be carried out forming L_2MX_2 (where M = Cd or Hg, L = Phosphines/ Phosphinesulfides/ Phosphineselenides, *Tu, *Seu, *Imt, Methionine, Seleno-methionine and its derivatives and X = halides, CN- etc). The ^{13}C , ^{15}N , ^{31}P , ^{77}Se , ^{113}Cd , ^{199}Hg NMR chemical shifts as well as various coupling constants involved will be measured. Attempt will be made to correlate the chemical shifts and coupling constants of various complexes to their structures.

The solid-state ^{113}Cd NMR spectral analysis of complexes L_2CdX_2 , will provide the shielding parameters, s_{11} , s_{22} , s_{33} , s_{iso} (isotropic chemical shifts), D_s (shielding isotropy) and h (asymmetry parameter). The ^{199}Hg solid state NMR of L_2HgX_2 will provide similar parameters. The information obtained from the solution and solid-state NMR will help us better understand the structural features of metal binding sites of metalloproteins and enzymes. X-ray crystallographic structure determination of the complexes will facilitate correlation of shielding parameters with geometrical parameters.

15. Project No. MS/STREAM FUNCTION/278

Investigator: Dr. Faisal Fairag (Math)

Title: Theoretical and Computational Aspects of the Stream Function Form of a Ladyzhenskaya Model for Incompressible Viscous Flow

Abstract

This proposal is for a one year sabbatical leave visit to join the Numerical Analyst group at the Institute of Analysis and Numerical Mathematics at the Otto-von-Guericke University in Magdeburg, Germany. In this research, the stream function form of Ladyzhenskaya model is to be studied from both the theoretical and the computational points of view. In this research, an error analysis for finite element method of the proposed problem will be studied. In addition, the study will require writing a finite element computer code, and testing it on problems which have a known solution. An investigation of some parameters of the problem will be done in order to stabilize the code. The code will then be used to solve different physical problems such as the driven cavity problem. The code will also be validated through comparison with several published works. It is expected that this research will be significant to applied mathematicians and engineers working in the area of computational fluid dynamics and turbulent flows. It will open a new horizon for researchers in the area for further researches. Moreover, the developed code can be used to solve many physical problems. Upon the completion of this research, the expected outcomes are a Matlab and FORTRAN codes in addition to the research technical report.

16. Project No. SE/RETAIL/279

Investigators: Dr. Malick M. Ndiaye (SE)

Mr. Shaik Arifusalam (SE)

Title: Integrating Retailing Location Models with GIS in Siting Support System

Abstract

The choice of the location of a retailing activity has profound impact in the success or failure of a business. In the case of the location of petrol filling stations a large number of criteria should be taken in consideration before exercising any effective decision-making. These criteria comprise among all the road network accessibility, fuel storage capacity, onsite offered services, presence of competition and the presence of driving factors. All these factors have clear impact on the number of potential users. We aim to integrate these criteria on a decision model (Maximum Capture Model with Service Level Rate – MaxCap SL) that will help select the most effective location.

Geographical information system (GIS) is commonly described as an advanced computer toolbox designed to store, edit, retrieve, manipulate, integrate, visualize and ease analysis of spatial data. It offers new research perspectives to various academic fields including Geography, City planning, Management sciences, Environmental Sciences, Computer sciences and Industrial Engineering. In the context of the Arabic Gulf area and the Kingdom of Saudi Arabia in particular, the use of GIS technology is growing rapidly and is being widely used in the management of governmental bodies, municipalities and diverse companies. We would like to build on this new GIS trend and culture to design a

GIS based decision support system for the location of petrol filling stations.

The purpose of the project is to design a Siting Support System [SSS] to be used either for siting for new locations to open petrol stations or to test the effectiveness of existing locations. Based on existing location models, we develop an adapted retailing location model for the Kingdom of Saudi Arabia that take in consideration local specificities. We then take advantage of GIS technology to design and develop an integrated model that supports the siting for such retailing operations.

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. Sleem-ur-Rahman Dr. Ramazan Kahraman Dr. M.A. Abul-Hamayel	Corrosion Protection of Steel by Catalyzed Polypyrrole Films (CHE/C-PROTEC- TION/227)
Chemical Engineering	Dr. Habib Zughbi Mr. Zahid Khokhar	Numerical and Experimental Investigations of Mixing in Fluid Jet Agitated Tanks: Effects of Geometry and Flow Asymmetry (CHE/MIXING/253)
Chemical Engineering	Dr. Sulaiman Al-Khattaf Dr. Adnan J. Al-Amer Mr. Kamal Mahgoub	Catalytic Isomerization of META/Ortho-Xylenes to Paraxylene in a Fluidized Bed Reactor (CHE/ISOMER/255)
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)
Civil Engineering	Dr. Naser A. Al-Shayea	Elastoplastic-Damage Model for 3-D Stress-Strain Behavior of Soil (CE/SOIL/239)

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
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)
Electrical Engineering	Dr. Husain Al-Duwaish (EE)	Advanced Multivariable Control of a Gas Plant (EE/ADV.CONTROL/231)
Electrical Engineering	Dr. Abdelmalek Zidouri (EE) Dr. Muhammad Sarfraz (ICS)	Automatic Text Recognition: A Need in Arabization (EE/AUTO-TEXT/232)
Electrical Engineering	Dr. Mohammad A. Khan (EE) Dr. Umer Al-Suwailem (EE) Dr. Mohamed Mohandes (EE)	Trellis-Coded Residual Vector Quantization based Subband Image Coding (EE/TRELLIS/236)
Electrical Engineering	Dr. Husain A. Al-Jamid (EE)	Optimization of the Method of Lines for the Analysis of Photonic Bandgap Structures (EE/BANDGAP/245)
Electrical Engineering	Dr. Abu Hamed Abdur-Rahim Dr. Samir Al-Baiyat (EE)	Robust Shunt Connected FACTS Devices for Power System Damping Improvements (EE/ROBUST/252)
Mechanical Engineering	Dr. Mehmet Sunar Dr. Fouad Al-Sunni Dr. S.A. Al-Kaabi	Substructural Control of Fuzzy Flexible Systems ME/FUZZY/197
Mechanical Engineering	Dr. Bassem El-Bedoor Mr. Lahouri Ghouti	An Experimental Study on Blade Vibration Measurements in Turbo-machinery (ME/BLADE-VIBRATION/215)
Mechanical Engineering	Dr. Ahmed S. Al-Garni (ME) Dr. Saad Ahmed (ME) Dr. Ahmet Z. Sahin (ME)	An Experimental Investigation of a Leading Edge Rotating Cylinder for Aircraft Operation at High Incidence (ME/CYLINDER/237)
	Principal Investigator /	Title of the Project

College / Department -----	Co-Investigator(s) -----	and its Code -----
Mechanical Engineering	Dr. Zaki Ahmad (ME)	Principles of Corrosion Engineering and Corrosion Control (Bookwriting Project) (ME/CORROSION.ENG/258)
Mechanical Engineering	Dr. Syed M. Zubair Mr. Jameelur Rahman Khan Mr. Mohammad Yaqub	The Impact of Risk-Based Fouling on the Performance of Cooling Towers, Evaporative Condensers, and Evaporative Fluid Coolers (ME/RISK FOULING/230)
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. Ameen El-Sinawi	Two-Dimensional Vibration Suppression in Machining Using a Kalman-Estimator-Based Feed-Forward Active Controller (ME/KALMAN/247)
Mechanical Engineering	Dr. Zaki Ahmad (ME)	Principles of Corrosion Engineering and Corrosion Control (Bookwriting Project) (ME/CORROSION 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 of Computer Science & Engineering		
ICS Department	Dr. M. Sarfraz	Geometric Modeling: Techniques, Applications, Systems and Tools (Bookwriting Project) (ICS/GEOMETRIC/256)
College / Department	Principal Investigator / Co-Investigator(s)	Title of the Project and its Code

----- 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)
ICS Department	Dr. M. Sarfraz	Advances in Geometric Modeling (Book Editing project) (ICS/ADV.MODEL/259)
ICS Department	Dr. M. Sarfraz	Computer-Aided Intelligent Recognition Techniques and Applications (Bookwriting Project) (ICS/INT.RECOGNITION/271)
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 Dr. Reginald S.O. Wallace	Corporate Disclosure and Reporting Practices in the Gulf Cooperative Council Countries: A Cross-National Comparative Investigation (CIM/DISCLOSE/248)
College of Sciences		
Chemistry	Dr. Wolfgang Forner	Nonlinear Charge Carriers in Polyparaphenylene CY/NONLINEAR/216
Chemistry	Dr. M. Farhat Ali Dr. Bassam El-Ali	Handbook of Industrial Chemistry: Organic Chemicals (Bookwriting Project) (CY/IND.CHEM/250)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----

Chemistry	Dr. Salah M. Sultan	General Chemistry (Book-writing Project) (CY/GEN.CHEM/251)
Islamic & Arabic Studies Dept.	Dr. Ibrahim Muttriff	Saudi Economics Between Reforms and Opening Up: September 2001-2003 (Sabbatical leave for book writing project) (IAS/ECO REFORMS/264)
Mathematical Sciences	Dr. Ibrahim Rahimov Dr. Hassen Muttalak	Investigation of a Random Sum of Indicators with Applications in Branching Stochastic Processes (MS/STOCHASTIC/254)
Mathematical Sciences	Dr. Rajai S. Alassar Dr. Mohamed El-Gebeily Dr. Faisal A. Fairag	On the Effect of Sphericity on Forced Convection (MS/SPHERICITY/225)
Mathematical Sciences	Dr. Abul Hassan Siddiqi Dr. Khaled M. Furati	Fast Wavelet Algorithms for Simulating Safing Sensor (MS/SAFING-SENSOR/234)
Mathematical Sciences	Dr. Soliman Al-Homidan	Solving the Hankel Matrix Approximation Problem via Interior-Point Methods of Semi-Definite Programming (Sabbatical Leave Project) (MS/HANKEL.MATRIX/260)
Mathematical Sciences	Dr. M. Aslam Chaudhry Dr. M. Asghar Qadir	Formulation Properties and Applications of the Gamma-Zeta Functions (MS/ZETA/242)
Mathematical Sciences	Dr. Walid Al-Sabah	A New Test of Symmetry and Normality (MS/SYMMETRY/244)
Mathematical Sciences	Dr. S. Kabbaj	t-Class Semigroups of Integral Domains (MS/T-CLASS/257)
<u>College/Department</u>	<u>Principal Investigator and the Co-Investigators</u>	<u>Title of the Project and the Code Number</u>

Mathematical Sciences	Dr. Ibrahim Rahimov Dr. Hassan Muttalak	Investigation of a Random Sum of Indicators with Applications in Branching Stochastic Processes (MS/STOCHASTIC/254)
Mathematical Sciences	Dr. Selim Messaoudi	On the Long Time Behavior of Some Viscoelastic Problems (MS/VISCOELASTIC/270)
Mathematical Sciences	Dr. A. Lyaghfour	On the Dam Problems with Two fluids (MS/DAM/273)
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)
Physics	Dr. Azzedine Zerguine Dr. Maamar Bettayeb	Mixed l_2 - l_p Norm Adaptive Algorithms for System Identification: Application to Echo Cancellation (PH/ECHO/193)
Physics	Dr. S.M. Al-Amoudi Dr. H. Bahlouli	Real-Time Dynamics of Bose-Einstein Condensates (PH/BOSE/241)
Physics	Dr. Abdullah Alsunaïdi (Phys) Dr. Basel Abu Sharkh (Che)	Self-Assembly in Confined Semiflexible Copolymers (PH/COPOLYMERS/268)
College of Environmental Design (City & Regional Planning)	Dr. Adel Aldosary Mr. Shaibu Bala Garba	An Investigation into the Application of GIS for Infrastructure and Facilities Management in Saudi Arabia (CRP/GIS/235)
College of Environmental Design (Construction Engineering & Management Dept.)	Dr. Mohammad Al-Khalil	The Value Engineering Experience at Saudi Aramco (CEM/VALUE ENG/276)

4. RESEARCH PROPOSALS UNDER REVIEW

#	Name of Faculty & Dept.	Title of the Research Proposal
1.	Dr. Abdulaziz Al-Shuaibi (Math) Dr. Mohammad Iqbal (Math)	On the Inversion of some integral transforms with the use of orthogonal polynomials and regularization methods
2.	Dr. Zaki Ahmad (ME) Mr. Abdul Aleem, B.J. (ME)	Exploring the Corrosion Behavior of New Generation Scandium Reinforced Aluminum Alloys for Service Performance
3.	Dr. Muhammad E.S. Elrabaa (Computer Engineering)	Development of Digital Circuit Techniques for Clock Recovery and Data Re-Timing for High Speed Non-Return-to-Zero Source-Synchronous Serial Data Communications
4.	Dr. Fouad M. Al-Sunni Dr. Samir Al-Amer (SE)	Identification of a class of nonlinear systems
5.	Dr. Salah M. Sultan (Chemistry)	Sequential Injection Analysis Technique for Automated Titrations (Release time) (proposal recd. on 26.1.2003)
6.	Dr. Ahmad A. Abu-Musa Dr. Jassim S. Al-Rumaihi Dr. Muhammad A. Al-Khalidi (Accounting & MIS)	Evaluating the Security Controls of Computerized Accounting Information Systems in Saudi Arabian Banks
7.	Dr. Basel Abu-Sharkh (Che) Dr. Sk. Asrof Ali (Chem) Dr. Ibnelwaleed Hussein (Che) Dr. Hasan A. Al-Mualem (Chem)	Influence of Hydrophobe Architecture on Self-Assembly, Rheology, and Interfacial Properties of Amphiphilic Polyelectrolyte, Polyampholyte and Neutral Co-Polymers.
8.	Dr. H. Bahlouli (Phys) Dr. A. Alsunaidi (Phys) Dr. S. Al-Amoudi (Phys)	Transport Properties of Nano-Structure Devices
9.	Dr. Wolfgang Forner (Chem) Dr. Hassan M. Badawi (Chem)	Potential Surfaces and Vibrational Analyses of Some Halopropanols
10.	Dr. N. Tabet (Physics) Dr. A. Mekki (Physics) Dr. K. Mezghani (ME)	DC-Magnetron Sputtering Synthesis and Characterization of the Physical Properties of Zinc Oxide Thin Films
11.	Dr. Abul Hasan Siddiqi (Math) Dr. Khaled Furati (Math) Mr. Shafiqur Rehman (RI) Dr. M. N. Siddiqui (Chemistry) Mr. Kamran Arshad (EE)	Wavelet and Fractal Methods for the Analysis of Meteorological Data of Saudi Arabia
12.	Dr. Mohammad F. Al-Kuhaili Dr. S.M.A. Durrani, CAPS, RI Dr. E.E. Khawaja, CAPS, RI	Development of a New Method for Determining the Optical Constants (n and k) of Thin Inhomogeneous Films

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

S. No.	Name of Faculty & Department	Title of the Research Proposal
1.	Dr. Ibraheem Nasser (Phys) Dr. Abdullah Alsunaidi (Phys) Mr. Faud Enaya (Phys)	Writing a Book in Arabic: Intermediate Statistical Thermodynamics

6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2003/2004

College/ Department	Name of Faculty	Title of Sabbatical Proposal	Host Institution
College of Sciences Mathematics Department	Dr. Faisal Fairag	Theoretical and Computational Aspects of the Streamfunction Form of a Ladyzhenskaya Model for Incompressible Viscous Flow	Institute of Analysis and Numerical Mathematics, Otto von-Guericke University.
College of Sciences Islamic & Arabic Studies Department	Dr. Ibrahim Al- Mutrif	Foundation of Eastern Province Society for Traffic Awareness and Safety	
College of Environmental Design CEM Department	Dr. Mohammad Al- Khalil	The Value Engineering Experience at Saudi Aramco	Saudi Aramco, Dhahran, Saudi Arabia

7. SABIC AND FAST TRACK PROPOSALS RECEIVED DURING NOVEMBER-DECEMBER 2004 FOR FUNDING

Updated as of 12.1.2004

S. No.	Name of Faculty	Department	Title of the Proposal
SAB-2004-1	Dr. Selim Messaoudi Dr. N. Tatar	Mathematics Mathematics	On a viscoelastic material permissive to slight deformations.
SAB/2004-2	Dr. Abdelwahab Kharab Dr. Mustafa Bouchama	Mathematics Civil Engineering	Penetration of a Rigid Body into a Soil Medium
SAB/2004-3	Dr. Ramazan Kahraman Dr. Basel Abu Sharkh	Chemical Engineering Chemical Engineering	Water Adsorption Behavior of Palm/Polypropylene Composites
SAB/2004-4	Dr. Nasser-eddine Tatar Mr. Mohamed-Ridha Alaimia	Mathematics. Mathematics	Vibrations in Presence of a Fractional Damping Mechanism
SAB/2004-5	Dr. M.I.M. Wazeer Dr. Zaki S. Seddigi Dr. Ali El-Rayyes	Chemistry Chemistry Chemistry	Investigation of the Acidic Behavior in Some Industrially Important Zeolites and Clay Minerals.
SAB/2004-6	Dr. Ali El-Rayyes Dr. Zaki S. Seddigi	Chemistry Chemistry	Acidity Characterization of Solid Acids by Using by Using the Excited State Proton Transfer Reactions of Aromatic Amines
SAB/2004-7	Dr. A.A. Isab Dr. M.I.M. Wazeer	Chemistry Chemistry	Solid-state NMR Study of Silver (I) complexes with some sulphur containing biologically important ligands.
SAB/2004-8	Dr. Mohammad W. Ashraf Dr. Mohd. H. Al-Malak	Chemistry Civil Engg / RI	Distribution of Methyl tert-Butyl Ether (MTBE) in Soil and Water Environments of Dammam, Saudi Arabia
SAB/2004-9	Dr. A.B. Thaheem	Mathematics	Certain Operator Equations on von Neumann Algebras
SAB/2004-10	Dr. Ahmad Z. Al-Garni Dr. Farooq Saeed Dr. Abdallah Al-Garni	Aerospace Engineering Aerospace Engineering Aerospace Engineering	Aerodynamic Performance and Longitudinal Stability Analyses of Delta- and Double-Delta Wing Configurations
SAB/2004-11	Dr. Bassam M. El-Ali Dr. Mohammed Fettouhi Dr. Zaki Seddigi	Chemistry Chemistry Chemistry	Catalytic Hydroformylation of 1-octene by Rhodium Supported on Functionalized ZSM-5
SAB/2004-12	Dr. Mazen Khaled Prof. Bekir Yilbas	Chemistry Mechanical Engineering	Corrosion Behavior of Modified Titanium Alloy Surface in Neutral Solution
SAB/2004-13	Dr. Salah U. Al-Dulaijan Dr. Mesfer M. Al-Zahrani Dr. Omar S.B. Al-Amoudi	Civil Engineering Civil Engineering Civil Engineering	Protection Through Chemical Inhibitors in Blended Cements Concrete Structures Reinforced with Surface Damage FBEC Bars
SAB/2004-14	Dr. Mustafa Achoui Dr. Eid Al-Shammari	Management & Mkt. Management & Mkt.	A Multi-Level Framework of Organizational Behavior Involving Culture: An Empirical Study in the Saudi Context.
SAB/2004-15	Dr. Mohammed Sadiq Sohail	Management & Marketing	A Study of Shoppers' Preferences and Attitudes Towards Large Retailers in Saudi Arabia
SAB/2004-16	Dr. Ali Muqaibel Dr. Maan Kousa Mr. Umar Johar Mr. Ahmar Shafi	Electrical Engineering Electrical Engineering Electrical Engineering Electrical Engineering	Investigation of UWB Communication Performance in Multipath Channels
SAB/2004-17	Dr. Azzedine Zerguine Dr. Asrar Sheikh	Electrical Engineering Electrical Engineering	Convergence and Steady-State Analysis of the Normalized Least Mean Fourth Algorithm:

			Applications to Mobile Communications
SAB/ 2004-18	Dr. Salam A. Zummo Dr. Saud Al-Semari	Electrical Engineering Electrical Engineering	Analysis of FH-SS and OFDM Wireless Networks Under Interference Conditions
SAB/ 2004-19	Dr. Salam A. Zummo Dr. Moahed Adnan Landolsi	Electrical Engineering Electrical Engineering	Rate-Compatible Low-Density Parity Check Codes for Wireless Networks
SAB/ 2004-20	Dr. Onur Toker Dr. Mehmet Sunar	Systems Engineering Mechanical Engineering	Substructural Control by Local μ Synthesis
SAB/ 2004-21	Dr. Khalid Sheltami Dr. M.H. Shwehdi Dr. Luai Al-Hadrami	Mechanical Engg. Electrical Engg. Mechanical Engg.	Thermal Effects Investigation in Distribution Transformers Using Modern Technologies
SAB/ 2004-22	Dr. Khaled Mezghani Mr. Mohammed Abdul Samad	Mechanical Engg. Mechanical Engg.	Effect of Mold temperature on Mechanical Properties of Poly(ethylene terephthalate)
SAB/ 2004-23	Dr. Esam Z. Hamad Mr. Nasiru Tukur Mr. Saidu M. Waziri	Chemical Engg. Chemical Engg. Chemical Engg.	Modeling of Equilibrium Properties of Linear Flexible Polymers.
SAB/ 2004-24	Dr. Anwar H. Joarder Mr. M.R. Abujiya	Mathematics Mathematics	Some Product Moments of Wishart Distribution
SAB/ 2004-25	Dr. Abdelslem Lyaghfour	Mathematics	On the Continuity of the Free Boundary in a Class of Two Dimensional Problems
SAB/ 2004-26	Dr. Sadi Assaf Dr. Soliman Almohawis Dr. Mohammad Al-Khalil	CEM Dept. CEM Dept. CEM Dept.	Determination of Performance Measures for Materials Management Process in SABIC Industrial Construction Projects
SAB/ 2004-27	Dr. A.B. Thaheem Dr. M.S. Samman	Mathematics Mathematics	Free Actions on Rings
SAB/ 2004-28	Dr. Anwar H. Joarder Dr. Raja M. Latif	Mathematics Mathematics	Expectations for Inverted Wishart Distribution
SAB/ 2004-29	Dr. Anwar Joarder Dr. A. Laradji	Mathematics Mathematics	Some Inequalities in Statistics
SAB/ 2004-30	Dr. M.M. Dawoud Dr. Jamil Bakhawain Mr. Nuruzaman	Electrical Engg. Electrical Engg. Electrical Engg.	Measurements and Simulation of Electromagnetic Radiation from Mobile Base Stations
SAB/ 2004-31	Dr. Mahmoud Kassas Dr. Ibrahim Habiballah Dr. Ibrahim El-Amin	Electrical Engg Electrical Engg Electrical Engg	Air conditioning Load Control at KFUPM-Campus
SAB/ 2004-32	Dr. M.A. Abido	Electrical Engg	Multiobjective Evolutionary Algorithms for Optimal Reactive Power Dispatch and Control
SAB/ 2004-33	Dr. Hassan Ragheb Dr. Essam Hassan	Electrical Engg. Electrical Engg	Scattering of Electromagnetic Waves by N Dielectric Coated Metallic Strips
SAB/ 2004-34	Dr. Munir A. Al-Absi Dr. Saad Al-Shahrani Dr. Mouhammed T. Abuelmatti	Electrical Engg. Electrical Engg. Electrical Engg.	Electronic mean to assist pilgrim to find camp location during Hajj
SAB/ 2004-35	Dr. Essam Hassan Dr. Hassan Ragheb	Electrical Engineering Electrical Engineering	Radiation Pattern Control of Surface Reflector Antennas by Controlling the Radiator Surface Impedance
SAB/ 2004-36	Dr. M. Elshafei-Ahmed Dr. L. Cheded	Systems Engineering	Hybrid ANN/HMM Models for Speech Recognition
SAB/ 2004-37	Dr. M. Elshafei-Ahmed Dr. Mansour Al-Dajani Dr. Mohamad A. Habib	Systems Engineering Systems Engineering Mechanical Engg.	Inferential Sensing Techniques for Process Emission Monitoring
SAB/ 2004-38	Dr. Mohammed Al-Khalil	CEM Department CEM Department	A Systematic Approach for the Selection of Dispute Resolution Method in the Construction

	Dr. Sadi Assaf Dr. Abdulaziz Bubshait Mr. Rizwan Baba	CEM Department CEM Department	Industry
SAB/ 2004-39	Dr. Paul Manuel Dr. Salahaddin Mohd.	ICS Dept. ICS Dept.	Model of eGovernance Based on Knowledge Management
SAB/ 2004-40	Dr. Jarallah Al-Ghamdi Dr. Moataz Ahmed Dr. Mohammad AlShayeb Mr. Raimi Rufai Mr. Sohel Khan	ICS Dept. ICS Dept. ICS Dept. ICS Dept.	Measuring Architectural Stability in Object-Oriented Systems
SAB/ 2004-41	Dr. Muhammad A. Al-Arfaj	Chemical Engg. Dept.	Development of Methanol Extraction-Recovery System for TAME Reactive Distillation Process: Design and Control
SAB/ 2004-42	Dr. M. Deriche Dr. M. Mohandes Dr. Jamil Bakhshwain	Electrical Engg. Electrical Engg. Electrical Engg.	A Neural Network Approach for Person Identification Using the Iris
SAB/ 2004-43	Dr. Jamal Al-Qawasmi Dr. Thamer Al-Rugaib	Architectural Engg. Architectural Engg.	The Effectiveness of Virtual Design Reviews in Architectural Design Education
SAB/ 2004-44	Dr. F.D. Zaman Dr. Khalid Masood	Mathematics Mathematics	An Inversion Procedure for the Recovery of Propagation Speed and Damping of the Medium in Three-Dimensions
SAB/ 2004-45	Dr. M. Tahir Mustafa Dr. Hassan Azad	Mathematics Mathematics	Investigation of the Constraints on Harmonic Morphisms of Warped Product Type from Einstein Manifolds
SAB/ 2004-46	Dr. Haydar Akca Dr. Rajai Alassar	Mathematics Mathematics	Extension of the Hopfield Model
SAB/ 2004-47	Dr. Salih Duffuaa Dr. Mohammed Darwish	Systems Engg. Systems Engg.	Joint Determination of Optimal Process and Inspection Plan Parameters with and without Inspection Errrors
SAB/ 2004-48	Dr. Sami El-Ferik Dr. Mohamed Ben Daya	Systems Engg. Systems Engg.	Production and Maintenance Planning for Failure Prone Systems
SAB/ 2004-49	Dr. Shamsad Ahmad and Dr. Abul Kalam Azad	Civil Engineering Civil Engineering	A Study of Self-Compacting Concrete Using Local Marginal Aggregates
SAB/ 2004-50	Dr. Mohammad H. Sqalli	Computer Engineering	A Framework for Integration of Web-based Network Management and Management by Delegation
SAB/ 2004-51	Dr. Khalil Ziq Mr. A.F. Salem Mr. A. Ghannam Mr. F. Enaya	Physics Physics Physics Physics	Doping effects on vortex flux pinning in MgB ₂ Superconductor
SAB/ 2004-52	Dr. M. Faiz Dr. N. Tabet	Physics Physics	Investigation of the Effects of Preparation Conditions on the Properties of Barium Cuprate Thin Films Obtained by DC Magnetron Sputtering Technique
SAB/ 2004-53	Dr. A. Mekki Dr. G. Khattak	Physics Physics	Structure and Magnetic properties of Transition Metal Doped Tellurite Glasses
SAB/ 2004-54	Dr. Shahzada Z. Shuja Dr. S.M. Zubair	Mechanical Engg. Mechanical Engg.	Optimization of a Finned Heat Sink Array Based on Thermoeconomic Analysis
SAB/ 2004-55	Dr. Amro Al-Qutub Dr. Ibrahim Allam	Mechanical Engg. Mechanical Engg.	High Temperature Wear Properties of AL-AL ₂ O ₃ Particulate Matrix Composite Using Solid Lubricants
SAB/ 2004-56	Dr. H.M. Badr	Mechanical Engg.	Numerical Investigation of Erosion in a Protruded

2004-56	Dr. M.A. Habib Dr. R. Ben-Mansour	Mechanical Engg. Mechanical Engg.	Tube
SAB/ 2004-57	Dr. S.A.M. Said Dr. M.A. Habib Dr. T.F. Ayinde	Mechanical Engg. Mechanical Engg. Mechanical Engg.	Energy and Exergy Based Performance Analysis of Boilers and Industrial Furnaces in Process Industries
SAB/ 2004-58	Dr. M.A. Antar Dr. Syed M. Zubair Mr. Irfran Hissaini	Mechanical Engg. Mechanical Engg. Mechanical Engg.	The Effect of Superheating and Subcooling on the Total Heat Exchanger Area for a Feed Water Heater in a Power Plant
SAB/ 2004-59	Dr. Ameen El-Sinawi Dr. Saif Al-Kaabi Dr. Abdelaziz Bazoune	Mechanical Engg. Mechanical Engg. Mechanical Engg.	Experimental Verification of a Kalman Estimator-based Technique Developed for Estimating and Monitoring the Vibration of a Cantilevered Beam Mounted on a Compliant Rotating Hub Using Two-Dimensional Measurements of Hub (bearing) Vibration
SAB/ 2004-60	Dr. Habib Abualhamayel Dr. P. Gandhidasan	Mechanical Engg. Mechanical Engg.	Application of Desiccant Technology for Concentrating Liquid Foods
SAB/ 2004-61	Dr. Ahmet Z. Sahin Dr. Ramazan Kahraman Dr. Meyassar Al-Haddad	Mechanical Engg. Mechanical Engg. Mechanical Engg.	The Effect of Viscosity Variation in Thermodynamic Analysis of Fluid Flow
SAB/ 2004-62	Dr. Shahzada Z. Shuja Dr. Bekir S. Yilbas Dr. Mohammad Budair	Mechanical Engg. Mechanical Engg. Mechanical Engg.	Jet Emerging From Annular and Conical Nozzles and Impinging onto Cylindrical/Conical Cavities in Relation to Laser Machining
SAB/ 2004-63	Dr. Bekir Sami Yilbas Dr. Mehmet Sunar Dr. Zuhair Gasem Mr. B.J. Abdul Aleem	Mechanical Engg. Mechanical Engg. Mechanical Engg. Mechanical Engg.	Mechanical Properties of TiN Coated and Duplex Treated Ti-6Al-4V Alloy
SAB/ 2004-64	Dr. Zuhair Gasem Dr. Meyassar Al-Haddad Dr. Amro Al-Qutub	Mechanical Engg. Mechanical Engg. Mechanical Engg.	Effects of Particulate Volume Fraction on Low Cycle Fatigue Behavior of Al ₂ O ₃ -6061 Aluminum Metal Matrix Composites
SAB/ 2004-65	Dr. M. Said Oukil Dr. Amine Nehari Talet	Accounting & MIS Mgt and Marketing	Scientific and Technological Watch in Research Structures: Case Studies in the Eastern Saudi Arabia
SAB/ 2004-66	Dr. Anan Al-Karmi Dr. M.A. Morsy	Physics Chemistry	Development and Assessment of Binder-Free Alanine Dosimeters with EPR-Spectrometers
SAB/ 2004-67	Dr. Aimen El-Maleh Dr. Sadiq M. Sait	Computer Engineering Computer Engineering	Efficient-Test Relaxation-Based Static Test Compaction Techniques for Combinational and Sequential Circuits
SAB/ 2004-68	Dr. R. Ben-Mansour Dr. Faleh Al-Sulaiman Dr. Esmail Mokheimer	Mechanical Engineering Mechanical Engineering Mechanical Engineering	Performance Evaluation of Different A/C Systems based on Thermal Comfort and Energy Consumption for the Eastern Province of Saudi Arabia
SAB/ 2004-69	Dr. Anwar Khalil Sheikh Mr. Mohammed Faisal Dr. Faleh Al-Sulaiman Dr. Abul Fazal M. Arif Mr. Mohiuddin Ahmad	Mech. Engg. Mech. Engg. Mech. Engg. Mech. Engg. Mech. Engg.	Assessing Needs and Developing an Implementation Strategy for Introducing Rapid Prototyping, Rapid Tooling and Virtual Manufacturing Technologies in Saudi Arabia.

8. PUBLICATIONS IN REFEREED JOURNALS REPORTED AFTER JANUARY, 2004

College of Engineering

Civil Engineering

1. "A Plastic-Damage Model for Stress-Strain Behavior of Soils", **Al-Shayea, N. A., Mohib, K. R. and Baluch, M. H.**, International Journal of Damage Mechanics, Vol. 12, No. 4, Oct., 2003, pp. 305-329.
2. "Effect of inhibitor Treatment on Corrosion of Steel in a Salt Solution," **Kahraman, R., Saricimen, H., Al-Zahrani, M. M. and Al-Dulaijan, S. U.**, Journal of Materials Engineering and Performance, Vol.12, No. 5, October 2003, pp. 524-528.
3. "Effects of Surface Fluorination of TiO₂ on the Photocatalytic Degradation of Tetramethylammonium", **Vohra, M.S., Kim, S. and Choi, W.**, J. Photochem. Photobiol. A: Chem., 160, 55-60.
4. "Photocatalytic Degradation of Aqueous Pollutants Using Silica-modified TiO₂", **Vohra, M.S. and Tanaka, K.** Water Research, 37 (16), 3992-3996.
5. "Optimizing water quality monitoring stations using Genetic Algorithm." **Al-Zahrani, M., and Moied, K.**, Submitted for possible publication in the Arabian Journal of Science and Engineering (AJSE).
6. "Hydraulic Reliability Analysis of Water Distribution System." **Muhammad A. Al-Zahrani and Juned Laiq**, Journal of The Institution of Engineers Singapore (IES), Vol. 1, Issue 1 (e-Journal), 76-92.
7. "Stochastic Goal Programming Model for Optimal Blending of Desalinated Water With Groundwater.", **Al-Zahrani, M.A. and Abid A.** Water Resources Management, (Accepted).
8. "Design Optimization of Non-Uniform Stiffened Steel Plate Girders – a computer code", **Saeid A. Alghamdi**, Advances in Engineering Software, 34 (2003), pp. 357-386.
9. "Conformity of Physical Characteristics of Imported Tires with Government Standards: A Case Study", **Ratrout, N.T., Basha, S.A., Al-Abdul Wahhab, H.I. and Al-Ofi, K.A.**, Journal of Engineering Research, Sultan Qaboos University, Muscat, Sultanate of Oman, Vol. 1, No. 1, January 2004, pp. 1-6..
10. "The Extent of Illegal Overtaking in the Eastern Province of Saudi Arabia", **Ratrout, N.T.**, paper accepted for publication in IATSS RESEARCH, Tokyo, Japan.

11. "Female Teacher and Student Traffic Accidents in Rural Area in the Kingdom of Saudi Arabia: A Case Study", **Al-Ahmadi, H., Ratrou, N. et al.**, paper accepted for publication in the Journal of King Abdulaziz University Engineering Sciences, Jeddah.
12. "Long-Term Performance of Fusion-Bonded Epoxy-Coated Steel Bars in Chloride-Contaminated Concrete" **Al-Amoudi, O.S.B., Maslehuddin, M., and Ibrahim, M.** ACI Materials Journal, Vol. 101, No. 4, July-August 2004 (In Press).
13. "Performance Modification of Asphalt Binders Using Thermoplastic Polymers", **Al-Abdul Wahhab, H.I., and Abaker, I.**, The Journal of Engineering Research, Sultan Qaboos University, Muscat, Sultanate of Oman, Vol. 1, No. 1, Jan. 2004, pp. 19-28.
14. "Pavement Stripping in Saudi Arabia: Prediction and Prevention", **Al-Abdul Wahhab, H.I., Asi, I.M., Ali, S.A., Al-Swailmi, S., and Al-Nour, A.**, The Journal of Engineering Research, Sultan Qaboos University, Muscat, Sultanate of Oman, Vol. 1, No. 1, Jan. 2004, pp. 29-38.

Chemical Engineering Department

1. "Micelle Formation by Self Assembling Nonadditive Hard Chains", **Abu-Sharkh, B., Hamad, E. Z.**, Langmuir, 20 (1), 2004, p.254-259.
2. "Influence of Monomer Sequence on Microstructure of Nonadditive Hard Chain Copolymers: Simulation and Equation of State," **Sunaidi, A., Abu-Sharkh, B.**, Virtual Journal of Nanoscale Science & Technology, November 10, 2003.
3. "Protein Partitioning in Aqueous Two-Phase Systems Composed of a pH-Responsive Copolymer and Polyethylene Glycol", **Waziri, Abu-Sharkh, B., Asrof Ali**, Biotechnology Progress, vol 20, p.526, 2004.
4. "The Effect of Epolene E-43 as a Compatibilizer on the Mechanical Properties of Palm Fiber-polypropylene Composites", **Abu-Sharkh, B., Kahraman, R., Abbasi, S., Hussein, I.**, J. Applied Polymer Science, vol 92, p.2581, 2004.
5. "Simulation and Model Development for the Equation of State of Fused Sphere Chains", **Abu-Sharkh, B., Sunaidi, A., Hamad, E. Z.**, Journal of Chemical Physics, vol 120, no 12, 22 Mar 2004, p.5795.
6. "Influence of Branch Content on Microstructure of HDPE and Metallocene-octene LLDPE Blends: MD Simulation Study", **Abu-Sharkh, B., Giri, A., Hussein, I.**, European Polymer Journal, vol 40, no 6, p.1177, 2004.
7. "Influence of uniform branching on the structure of octene m-LLDPE: MD Simulation", **Abu-Sharkh, B., Hussein, I.**, Journal of Polymer Research, vol 11, no 3, August 2004.

8. "Weathering and Stabilization of Palm-Fiber-Polypropylene Composites", **Abu-Sharkh, B., Redhwi, H. H.**, Polymer Degradation and Stability, in press.
9. "Influence of Epolene G3003 as a Coupling Agent on the Mechanical Behavior of Palm Fiber-Polypropylene Composites", **Kahraman, R., Abbasi, A., Abu-Sharkh, B.**, International Journal of Polymeric Materials, in press.
10. "Numerical Simulation and Analysis of a Patented Desalination and Power Co-generation Cycle", **Al-Khaldi, K., Abu-Sharkh, B. F.**, Desalination, in press.
11. "Synthesis and Solution Properties of Hydrophobically Associating Ionic Polymers Made from Diallylammonium Salts/Sulfur Dioxide Cyclocopoly-merization", **Umar, Y., Hasan A. Al-Muallem, Abu-Sharkh, B. F., Asrof Ali, Sk.**, POLYMER, in press.
12. "Thermal Effects on the Process of Electropolymerization of Pyrrole on Mild Steel", **Rahman, S. U., and Ba-Shammakh, M. S.**, Synthetic Metals, **140**, 207-23 (2004).
13. "Copper Recovery from Wastewater using an Electrochemical Rotating Barrel Reactor", **Al-Shammari, A. A., Rahman, S. U., D. Tau Chin***, Journal of Applied Electrochemistry, **34**, 447-453 (2004).
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23. "Influence of wastewater projects on groundwater quality in a shallow alluvium aquifer", **Al-Shaibani, A. and M. Jowaher Raza**, Proceedings of 4th Specialty Conference on Environmental Progress in the Petroleum and Petrochemical Industries, February 22-24, 2004, Bahrain.

Mathematics Department

1. "A decay result in a system of thermo-elasticity type III", **Messaoudi, S. and Said-Houari, A.**, American University, Sharjah, UAE (April 1, 2004).
2. "A decay result in a parabolic system with a visco-elastic term", **Messaoudi S. and Berrimi S.**, American University, Sharjah, UAE (April 1, 2004).
3. "Blow up of solutions of a quasilinear heat equation with positive initial energy", **Messaoudi S.**, the 7th SAMS meeting, PSU, Riyadh (April 7-8, 2004).
4. "A decay result for a quasilinear parabolic system", **Berrimi, S. and Messaoudi, S.**, Fifth European Conference Elliptic and Parabolic Problems, Geata, Italy, (May 30- June 3, 2004).
5. "Blow up of solutions of a semilinear heat equation with memory term, Nonlinear Elliptic and Parabolic Problems", **Messaoudi S.**, Zurich (June 28-30, 2004).
6. "Double median ranked set sampling", **Abujiya, M.R. and Muttlak, H.A.**, 7th (SAMS), PSU, Riyadh (April 7-8, 2004).
7. "Asymptotic behavior of the wave equation with an internal fractional damping", **Nasser-eddine Tatar**, International Conference on Mathematics and Its Applications, Kuwait University, Kuwait (5-7, April 2004).

8. "Study of acoustic waves in oceans" **F.D. Zaman**, Second Saudi Science Conference, Jeddah, (March 2004).
9. "Techniques for a priori choice of regularizing parameters in Tikhonov Regularization". **M. Iqbal**, the 7th (SAMS), PSU, Riyadh (April 7-8, 2004).
10. "Language and Mathematics: The case of bilingual Arabs", **Yushau. B.** and **M.A. Bokhari**, Second UAE Math Day, American University of Sharjah, UAE, (March 31-April 1, 2004).
11. "Computer attitude, Use, Experience and Perceived Pedagogical Usefulness: The case of Mathematics Professors", **Yushau, B.**, International Conference on IT in Mathematics, the 7th SAMS meeting, PSU, Riyadh (April 7-8, 2004).
12. "Towards Establishing a Mathematics Learning Center at KFUPM", **Yushau, B.** and **Fairag, F.**, International Conference on IT in Mathematics, the 7th SAMS meeting, PSU, Riyadh (April 7-8, 2004).
13. "Using MS excel to do Mathematics", **El-Gebeily, M.** and **Yushau, B.**, International Conference on IT in Mathematics, the 7th SAMS meeting, PSU, Riyadh (April 7-8, 2004).
14. "Wavelet Based Multifractal Analysis for Indian Rainfall Data", **A.H. Siddiqi**, 13th Conference on Mathematics for Industry, Eindhoven, Netherland European Consortium of Mathematics for Industry, Netherlands, (June 21-25, 2004).
15. "Evolution Variational Inequalities", **A.H. Siddiqi**, The Fourth European Congress of Mathematics European Mathematical Society, Sweden, (June 27-July 2, 2004).
16. "Teaching of Wavelets at Undergraduate Level", **A.H. Siddiqi**, 10th International Congress of Mathematical Education International Union of Mathematics Education & Ministry of Educ. Copenhagen, Denmark, (July 4-11, 2004).
17. "Role of Mathematics to Real World Problems", **A.H. Siddiqi**, Applications of Mathematics, University of Jiwahee, Gwalior, India (July 19-20, 2004).
18. "Wavelet Methods in Meteorology", **A.H. Siddiqi**, Series of Lectures by Eminent Scientists Indian Institute of Tropical Meteorology, Pune, India (August 8-15, 2004).

Physics Department

1. "Laser Interference Measurement of Glucose in Liquid" **Nabil Maalej, I. Nasser**, **Dallal Al-Tammimi**, and **H. El Ghandoor**, Proc. Of the second Saudi Science Conference, March 15-17, 2004, at King Abdulaziz University, Jeddah.
2. "Compositional Study of Different Currency Coins Using Non-Destructive Laser Induced Breakdown Spectroscopy", **Z. H. Yamani**, 2nd SASC, Jeddah 2004

3. "Laser Photocatalytic Conversion of Methanol into Hydrogen", M. A. Gondal, A. Hameed, **Z. H. Yamani**, A. Suwaiyan and A. Arfaj , 2nd SASC, Jeddah 2004
4. "New solutions of the Dirac equation", **A. D. Alhaidari**, in Proceedings of the Second Saudi Science Conference, Jeddah, Saudi Arabia, 15-17 March 2004 (King Abdul Aziz University, Jeddah, 2004)
5. "Luminescence and photocatalytic Properties of ZnO nanopowders" N. Boulares, **N. Tabet**, K. Guergouri, R. Zouaghi, A. Lusson, F. Sibieude and C. Monty, accepted for presentation at 1st Nano-Engineering and Nano-Science Congress 2004, 7-9 July 2004, Singapore.
6. "Local structure and redox state of vanadium in Vanadium-Strontium-Borate [(V₂O₅)_{0.5}(SrO)_{0.5-y}(B₂O₃)_y] Oxide Glasses" **G.D. Khattak**, **N. Tabet**, **A. Mekki**, 7th Conference on Glass Science Technology, April 25-28, 2004, Athena, Greece.
7. "Effect of Si incorporation on the properties of niobium nitride films deposited by DC reactive magnetron sputtering" M. Benkahoula, C.S. Sandua, **N. Tabet**, M. Parlinska-Wojtana, A. Karimia, F. Lévy, International Conference on Metallurgical Coatings and Thin Films (ICMCTF-2004), April 19-23, 2004, San Diego, USA.
8. "SEM/XPS study of Zinc oxidation", **N. Tabet**, **M. Faiz** and A. Oteibi, "2nd Saudi Science Conference", KAAU, Jeddah, March 15-17, 2004.
9. "EBIC Contrast of Extended Defects: Theory, Experiment and Monte Carlo Simulations", M. Ledra and **N. Tabet** and, 2nd Saudi Science Conference, KAAU, Jeddah, March 15-17, 2004.
10. "X-ray Photoelectron Spectroscopy (XPS) Studies of strontium-vanadate (SrO)_x(V₂O₅)_{1-x} Oxide Glasses", **G.D. Khattak** and **N. Tabet**, 2nd Saudi Science Conference, KAAU Jeddah, March 15-17, 2004.
11. "XPS studies of copper-tellurite glasses" **A. Mekki**, **G.D. Khattak**, The Second Saudi Science Conference, KAAU, Jeddah, 15-17 March 2004.
12. "An XPS Study of iron sodium tellurite glasses" **A. Mekki**, **G.D. Khattak**, Presented in 7th ESG conference on Glass Science and Technology, Athens, Greece 25-29 April 2004.
13. "Local Structure and Redox State of vanadium in strontium-vanadate (V₂O₅)_{0.5}(SrO)_{0.5-y}(B₂O₃)_y oxide glasses". **G.D. Khattak**, **N. Tabet**, **A. Mekki**, Presented in 7th ESG conference on Glass Science and Technology, Athens, Greece 25-29 April 2004.

14. "Quality Control Procedures For Improving Diagnostic Imaging And Reducing Radiation Exposure To Patients", **N. Maalej**, Second Saudi Science Conference, March 2004, Jeddah, Saudi Arabia.
15. "Monitoring the Decoking of Coked Catalyst Using Dielectric Properties of the Glow Discharge", **Aljalal A. M.**, Khan M. A., The 2nd Saudi Science Conference. Jeddah, Saudi Arabia, March 15-17 2004.
16. "Time Evolution of CO & CO₂ during Decoking of a Coked Zeolite Catalyst in a Glow Discharge", Khan M. A., **Aljalal A. M.**, The 2nd Saudi Science Conference, KAAU, Jeddah, Saudi Arabia, March 15-17 2004
17. "Performance Improvement of a PGNA Setup Due to Change in Moderator Design- A Monte Carlo Study", **M. S. Abdelmonem**, A. A. Naqvi, Ghada Al-Misned and Hanan Al-Ghamdi International Conference On Modern Trends In Activation Analysis (MTAA-11) (Surrey, UK, 20- 25 June 2004)
18. "A new, scattering-theory-related, Bessel function result", **H. A. Mavromatis**, conference proceedings of Second Saudi Science Conference, KAAU, Jeddah, March 15-17, 2004.
19. "Substitution effects in MgB₂ Superconductor", **Kh. A. Ziq A. F. Salem A. Ghannam**, accepted for publication in conference proceedings of Second Saudi Science Conference, KAAU, Jeddah, March 15-17, 2004.
20. "Remenant Magnetization and irreversible field in YBa₂Cu₄O₈ high temperature Superconductor", **Enaya and Kh. A. Ziq**, accepted for publication in conference proceedings of Second Saudi Science Conference, KAAU, Jeddah, March 15-17, 2004.
21. "Hydrogen effect on GdBa₂Cu₃O₇ high temperature Superconductor", **Kh. A. Ziq** and H. Qadi, accepted for publication in conference proceedings of Second Saudi Science Conference, KAAU Jeddah, March 15-17, 2004.
22. "On the condensation energy of TI-based high temperature superconductor", **Kh. A. Ziq** and D. Alshangetti, accepted for publication in conference proceedings of Second Saudi Science Conference, KAAU Jeddah, March 15-17, 2004.
23. "Gamma ray irradiation effect on GdBa₂Cu₃O₇ high temperature Superconductor", **Kh. A. Ziq** and H. Hashem, accepted for publication in conference proceedings of Second Saudi Science Conference, Jeddah, KAAU March 15-17, 2004.
24. "Reversible Magnetization in MgB₂", **Kh. A. Ziq**, accepted for publication in conference proceedings of Second Saudi Science Conference, KAAU, Jeddah, March 15-17, 2004.
25. "Magnetic Properties of Human Blood", **A. M. Al-Karmi**, accepted for publication in conference proceedings of Second Saudi Science Conference, KAAU, Jeddah, March 15-17, 2004.

College of Computer Science & Engineering

Information & Computer Science

1. "Empirical Study of Variable Granularity and Global Centralized Load Balancing Algorithms". **Najib A. Kofahi and Quazi Abidur Rahman**, The 2004 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'04), Monte Carlo Resort & Casino, 3770 Las Vegas Blvd., South, Las Vegas, Nevada, USA, June 21-24, 2004.
2. "An Evolutionary Algorithm for Low Power VLSI Cell Placement ", **Mahmood R. Minhas**, In Proceedings of The 46th IEEE International Midwest Symposium on Circuits and Systems, Cairo, Egypt. December 27–30, 2003.
3. "Performance Evaluation of Interrupt-Driven Kernels in Gigabit Networks", **K. Salah and K. Badawi**, IEEE Globecom 2003, San Francisco, USA, pp.3953-3957, December 1-5, 2003.
4. "A Model of EGovernance Based on Knowledge Management", **Paul Manuel, Salahadin Mohammed, Albert William**, The 5th International Conference on Internet Computing (IC 2004), Las Vegas, USA, June 20-24, 2004

Computer Engineering Department

1. "Fast Force-Directed/Simulated Evolution for Hybrid Multiobjective VLSI Cell Placement", **Sadiq M. Sait and Junaid A. Khan**, IEEE International Symposium on Circuits and Systems, Vancouver, Canada, May 2004, pp V53-V56.
2. "Fuzzified Ant Colony Optimization Algorithm for Efficient Combinational Circuits", **Bambang Sarif, Mostafa Abd-El-Barr, Sadiq M. Sait and Uthman Al-Saiari**, IEEE Congress on Evolutionary Computation, June 2004, Oregon, USA..
3. "Modified Data Structure Based Simulated Evolution Algorithm for Digital Circuit Design", **Sadiq M. Sait and Muhammad Al-Ismail**, IEEE Congress on Evolutionary Computation, June 2004, Oregon, USA..

Systems Engineering Department

1. "Optimal Software Testing", **M. El-Shafei, M. Khan, M. El-Boraie**, 2004 International Conference Software Engineering Research and Practice, June 2004
2. "A Dynamic Programming Algorithm For Solving A Constrained Labor Scheduling Problem", **M. El-Shafei, H. K. Al-Fares**, 17th European Conference on Combinatorial Optimization, Beirut, Lebanon, June 24-26, 2004

3. "Discrete-Event Simulation Model For A Continuous Review Perishable Inventory System", **M. E. Seliaman, S. Arifusalam**, 2nd Conference on Administrative Sciences, April 19-21, 2004, KFUPM, Dhahran, Saudi Arabia.
4. "Determining Criteria Weights As A Function Of Their Ranks In Multiple-Criteria Decision Making", **H. K. Al-Fares, S. O. Duffuaa**, 2nd Conference on Administrative Sciences, Dhahran, Saudi Arabia, April 19-21, 2004, 77-83.
5. "A New, Fast And Low-Cost FFT Estimation Scheme Of Signals Using 1-Bit Non-Subtractive Dithered Quantization", **L. Cheded, S. Akhtar**, 6th Nordic Signal Processing Symposium (NORSIG 2004), Meripuisto, Espoo, Finland, June 9 - 11, 2004
6. "Strong Stabilization Via Inner And Outer Loop Stable Controllers" **A. W. Al-Saif**, The Fifth International Conference on Computational Aspects and Their Applications in Electrical Engineering, Philadelphia University, Jordan 16 - 18 March 2004
7. "Simulation Optimization Of A Supply Chain With A Globally Shared Inventory Profile", **M. E. Seliaman, A. W. Al-Saif**, 1st International Conference on Information & Communications Technologies from Theory to Applications, Damascus, Syria, 19-24 April, 2004
8. "Simulation To Perform Umrah", Fourth Symposium of Hajj Research, **Al-Haboubi M., Shublaq**, Makkakh, Saudi Arabia, CD-Rom, January 19-22, 2004
9. "Residential Air-conditioning Load Management Using Model Predictive Control of Physically Based Models", **S. El-Ferik, S. Ameenuddin, F. Al-Sunni**, WISC 2004, May 24-25, 2004, KFUPM, Dhahran, Saudi Arabia.
10. "CNC Retrofitting: Technology, Benefits and Cost", **M. El-Shafei**, WISC 2004, May 24-25, 2004, KFUPM, Dhahran, Saudi Arabia.
11. "Process Decoupling with Application to Control of Distillation Columns", **S.H. Al-Amer, M. El-Shafei**, WISC 2004, May 24-25, 2004, KFUPM, Dhahran, Saudi Arabia.
12. "Design and Implementation of a Java Based Distributed Control System Over the Internet: A Tele-Laboratory System", **O. Toker, F. Al-Sunni**, WISC 2004, May 24-25, 2004, KFUPM, Dhahran, Saudi Arabia.
13. "Investigation of Internet Based SCADA Systems Design and Application", **R. Fan, O. Toker, L. Cheded, M. El-Shafei**, WISC 2004, May 24-25, 2004, KFUPM, Dhahran, Saudi Arabia.

14. "Workers Allocation Under Noisy Conditions", **S. Z. Selim, M. Al-Haboubi**, The European Conference on Combinatorial Optimization, ECCO XVII 2004- Beirut, Lebanon.
15. "Neural Network Modelling Of Temperature And Humidity Effects On Residential Air Conditioner Load", **S. El Ferik and C. A. Belhadj**, International Association of Science and Technology for Development, Rhodes, Greece, June 2004.
16. "Weather Sensitivity Of Physically Based Model Of Residential Air-Conditioners For Direct Load Control", **Sami El Ferik, Syed Ameenuddin Hussain and Fouad M. AL-Sunni**, International Association of Science and Technology for Development, Rhodes, Greece, June 2004.
17. "Identification of Physically Based Models for Residential Air Conditioners for Direct Load Control Management", **Sami El-Ferik, Syed Ameenuddin Hussain and Fouad M. Al-Sunni**, 5th Asian Control Conference, Melbourne, Australia, July 2004.

College of Industrial Management

Department of Management & Marketing

- 1 "Saudi Consumer's Perceptions off Foreign Products in the new Millenium: An Analysis of Country Images" **Sadiq Sohail. M**, Second Conference on Administrative Sciences, April 19-21, 2004, King Fahd University of Petroleum and Minerals, Saudi Arabia, Conference Proceedings pp 123-132
2. "Service Quality in Sea food Restaurants : An Asia-Pacific Perspective", **Sadiq Sohail. M**, Presented at 2004 Academy for Global Business Advancement Conference 6-8 January, 2004, Ashok Country Resort, New Delhi, India and published in full in the proceedings, Advances in Global Business Research Vol. 1 No. 1 pages 68-72
- 3 "The Marketing of Australia to Malaysian Consumers" **Sadiq Sohail., M**, Chris Myers, and Chan Pui San, Presented at 2004 Academy for Global Business Advancement Conference 6-8 January, 2004, Ashok Country Resort, New Delhi, India and published in full in the proceedings, Advances in Global Business Research Vol. 1 No. 1 pages 372-378
4. "An Empirical Study on the attitudes of the Saudia Employees about the prospects of its Privatization", **Al-Ghamdi, M. & Al-Ghamdi, S.**, The Second Conference of Administrative Sciences, KFUPM, Dhahran, April 19-21, 2004.
5. "Family Impact on Saudi Students", **Mustafa Achoui** Second International Conference on Administrative Sciences, KFUPM.
6. "Performance of Japanese MNEs in Developed Countries: The Case of Europe

and the USA”, **M. Mansour**, Proceedings of the 2nd Conference on Administrative Sciences, Dhahran, Saudi Arabia, April 19-21, 2004, KFUPM, Dhahran, Saudi Arabia.

Department of Finance & Economics

1. "What Currency Should OPEC Use?", **Musa Essayyad and Ibrahim Algahtani**, 27th Annual International Conference: Energy and Security in the Changing World, Teheran, Iran, May 2004.
2. "Components of Technology Transfer: A Comparative Analysis of Offset and Non-Offset Companies", **Mohamed Ramady**, 2nd Conference on Administrative Sciences: Meeting the Challenges of the Globalization Age, Dhahran, Saudi Arabia, April 2004.
3. "Components of Technology Transfer: A Comparative Analysis of Offset and Non-Offset Companies", **Mohamed Ramady**, 2nd Conference on Administrative Sciences: Meeting the Challenges of the Globalization Age, Dhahran, Saudi Arabia, April 2004.
4. "An Empirical Study on the Attitudes of Saudia Employees About the Prospects of Its Privatization", **Salem Al-Ghamdi and Mubarak Al-Ghamdi**, 2nd Conference on Administrative Sciences: Meeting the Challenges of the Globalization Age, Dhahran, Saudi Arabia, April 2004.
5. "Corporate Ownership Structure and Firm Performance in Saudi Arabia", **Yakubu Umar and Ali Al-Elg**, 2nd Conference on Administrative Sciences: Meeting the Challenges of the Globalization Age, Dhahran, Saudi Arabia, April 2004.
6. "Testing for Efficiency in the Presence of Infrequent Trading: The Bombay Stock Index", **Abraham Abraham**, 2nd Conference on Administrative Sciences: Meeting the Challenges of the Globalization Age, Dhahran, Saudi Arabia, April 2004.
7. "Attitudes Toward Credit and Credit Cards Among Consumers in Saudi Arabia", **Alhassan Abdul-Muhmin and Yakubu Umar**, 2nd Conference on Administrative Sciences: Meeting the Challenges of the Globalization Age, Dhahran, Saudi Arabia, April 2004.

College of Environmental Design

Architecture Department

1. The Changing Patterns of Work Environment in a Global Society: Toward an Employee Centered Framework for Workplace Design **Ashraf Salama (2004)** Conference on Administrative Sciences: Meeting the Challenges of the Globalization Age. College of Industrial Management. KFUPM, Dhahran, Saudi Arabia (Presented and Published in April 2004)

2. A Collaborative Process for Planning an Ec lodge Demonstration Project in a Biologically Sensitive Desert Destination **Ashraf Salama (2004)** 35th Annual Conference of the Environmental Design Research Association-EDRA, Albuquerque, New Mexico, USA (full paper that will be published but not presented - June 4-7, 2004)
3. Environmental Graphics and Way finding Mechanisms: Comparative Analysis of Cairene Commercial Streets **Abeer Hasanin and Ashraf Salama (2004)**. 35th Annual Conference of the Environmental Design Research Association-EDRA, Albuquerque, New Mexico, USA (abstract that will be published and presented on my behalf - June 4-7, 2004)

Architectural Engineering Department

1. "Are Safety Measures Addressed in the Design of Our Residential Buildings". **Al-Homoud, M. S.** and M. Khan Proceedings of the Symposium on Safety in Projects, December 15-17, 2003, the Saudi Council of Engineers, Al-Khobar, Kingdom of Saudi Arabia.
2. "Characteristics and Applications of Local Building Thermal Insulating Materials", **Al-Homoud, M. S.**, Symposium on Thermal Insulation, April 19-21, 2004, Riyadh, Kingdom of Saudi Arabia.

City & Regional Planning Department

1. "Using A High Tech Approach To Power Distribution And Transmission Using Geographic Information Systems (GIS)", **Aldosary, Adel S.**, Presented at the 4th Annual Power Transmission and Distribution Forum: May 16-19, 2004, Dubai, UAE.
2. "Manpower Outsourcing A Double-Edged Sword" , **Aldosary, Adel S.**, Presented at the Kuwait 1st Annual Business Process Outsourcing Conference & Exhibition, 22-23 May 2004, Kuwait.

10. BOOKS PUBLISHED AND CONTRIBUTIONS

College of Sciences

Mathematics Department

1. “Applied Functional Analysis” **A.H. Siddiqi**, Marcel Dekker, New York, 2004.

Physics Department

1. “J matrix method and its applications” **D. Alhaidari**, E. J. Heller, H. A. Yamani, and **M. S. Abdelmonem** (eds.), Nova Science Publishers, New York, 2004

College of Computer Science & Engineering

Information & Computer Science

BOOKS

1. “Geometric Modeling: Techniques, Applications, Systems and Tools”, **Sarfraz, M.**, Kluwer Academic Publishers, ISBN: 1-4020-1817-7 (<http://www.wkap.nl/prod/b/1-4020-1817-7>), (2004).
2. “Advances in Geometric Modeling”, **Sarfraz, M.**, John Wiley, ISBN: 0-470-85937-7 (http://www.wileyeurope.com/WileyCDA/WileyTitle/productCd-0470859377_descCd-tableOfContents.html), (2003).

BOOK CHAPTERS

1. “A Rational Spline with Point Tension: An Alternative to NURBS of Degree Three”, **M. Sarfraz**, Geometric Modeling: Techniques, Applications, Systems and Tools, Ed.: **M. Sarfraz**, Kluwer, ISBN: 1-4020-1817-7 (<http://www.wkap.nl/prod/b/1-4020-1817-7>), 131 – 148, (2004).
2. “A Rational Spline with Inflection points and Singularities Tests on Convex Data”, **Sarfraz, M.** and **Habib, Z.**, Advances in Geometric Modeling, Ed.: **M. Sarfraz**, Kluwer, ISBN: 1-4020-1817-7 (<http://www.wkap.nl/prod/b/1-4020-1817-7>), 181 – 197, (2004).
3. “Weighted Nu Splines: An Alternative to NURBS”, **Sarfraz, M.**, Advances in Geometric Modeling, Ed.: **M. Sarfraz**, John Wiley, ISBN: 0-470-85937-7 (http://www.wileyeurope.com/WileyCDA/WileyTitle/productCd-0470859377_descCd-tableOfContents.html), 81 – 95, (2003).
4. “Multiresolution Framework for NUBS”, **Sarfraz, M.**, and **Siddiqui, M. A.**, Advances in Geometric Modeling, Ed.: **M. Sarfraz**, John Wiley, ISBN: 0-470-85937-7 (http://www.wileyeurope.com/WileyCDA/WileyTitle/productCd-0470859377_descCd-tableOfContents.html), 229 – 240, (2003).

College of Industrial Management**Department of Management & Marketing**

1. “Man in Ibn Al-Quiem Thought” **Mustafa Achoui**, Al-Mutababi Publications and Book Shop, Dammam, January 2004.

College of Environmental Design**Architecture Department**

1. “Native Architecture of Saudi Arabia, Architecture of Identity”; **E.M. Ishteeaque and Fahd Al Said**, A text book on Saudi Architecture with ten chapters, under preparation, Expected finish is October 2004.

11. TECHNICAL REPORTS

College of Engineering

Civil Engineering Department

1. “A Study to Improve SABIC Polymers for the Performance Modification of Saudi-Asphalt Binders”, **Al-Abdul Wahhab, H.I., Hussein, I. and Al-Nour, A.**, Progress Report No. 1, submitted to Saudi Basic Industries Corporation (SABIC), Riyadh, November 2003.
2. “A Study to Improve SABIC Polymers for the Performance Modification of Saudi-Asphalt Binders”, **Al-Abdul Wahhab, H.I., Hussein, I. and Al-Nour, A.**, Progress Report No. 2, submitted to Saudi Basic Industries Corporation (SABIC), Riyadh, March 2004.
3. “Development of an Improved Protection System for CCP Construction”, **A. K. Azad**, First Progress Report, Ameron Saudi Arabia, October, 2003.
4. “Development of an Improved Protection System for CCP Construction”, **A. K. Azad**, Second Progress Report, Ameron Saudi Arabia, May, 2004.
5. “Risk and Reliability Analysis of Water Distribution System”, **Al-Zahrani, M. A.** Project No. SABIC 2003-01, First Progress Report, March 2004.
6. “Diagnostic Evaluation and Repair of Deteriorated Concrete Structures in Saudi Arabia”, **A. S. Al-Gahtani**, Final Report, KACST AR-9-066 (Two volumes – 690 pages), March 2004.
7. “Improving the Performance of Damaged Fiber in Chloride-Contaminated Concrete”, **A. S. Al-Gahtani**, Second Progress Report, SABIC (April 2004)
8. “SASO Saudi Code, Codes of Concrete Bricks”, Improving the Performance of Damaged Fiber in Chloride-Contaminated Concrete”, **A. S. Al-Gahtani**, Second Progress Report, SABIC (In Progress).
9. “Role of Moisture Diffusivity in the Durability of Cementitious Materials” **Baluch, M. H.**, A Keynote Speaker to IC-SGECT ' 04 - International Conference on Structural and Geotechnical Engineering and Construction Technology, held at Mansoura University, Egypt held in March, 2004.

Chemical Engineering

1. “Inhibition of Reinforcing Steel Corrosion under Atmospheric Condition”, **Kahraman, R., Saricimen, H., Al-Zahrani, M. M., Al-Dulaijan, S. U.**, Final Report, KACST Grant, Project No: 19-10, May 2004.

Electrical Engineering

1. "Analysis of FH-SS and OFDM Wireless Networks Under Interference Conditions," **S. A. Zummo and W. E. Stark**, Fast-Track Proposal submitted to KFUPM, January 2004.
2. "Rate-Compatible Low-Density Parity Check Codes for Wireless Networks," **S. A. Zummo and W. E. Stark**, Fast-Track Proposal submitted to KFUPM, January 2004.
3. "Novel millimeter-wave semiconductor phase shifters and its application in phased array antennas," **Dr Sheikh Sharif Iqbal**, Final Progress Report of a Fast Track project (FT/2001-02)

College of Sciences

Chemistry Department

1. "The Catalytic Conversion Of Alkenes Into Aldehydes And Acetals Via Hydroformylation And Acetalization Reactions Using Heteropolyacids As Catalysts", **Dr. B. El Ali, Prof. M. El-Faer, Prof. A. Al-Arfaj, Dr. M. Fettouhi**, Final Report for KACST Project AR-18-15.
2. CHEM 331, Modern Inorganic Chemistry (A required course for BS in Chemistry and Industrial Chemistry).
3. CHEM 331, Inorganic Laboratory (A required course for BS in Chemistry and Industrial Chemistry).
4. Lab Safety (A short course covering General Lab Safety).

Earth Sciences Department

1. "Trace Element Geochemistry and Heavy Mineral Assemblage of the Cambro-Ordovician Saq Sandstone of the Tabuq Basin and its Possible Correlation with the Wajid Sandstone", **M. Hussain, M. Hariri and O. Abdellatif**, KACST LGP 6-54 Final Report, submitted in April 10, 2004.
2. "Groundwater Quality and Vulnerability Assessment of Wadi Al-Arj Alluvium Aquifer, At-Ta'if, Saudi Arabia", **Al-Shaibani, A, M. Makkawi, and M. Hariri** , Final Report for Project SABIC-2001/7, 2004.
3. "Hydrogeological Study of Abar Al-Mashi Basaltic Aquifer, Al-Madinah Al-Monawarah Province", **Al-Shaibani, A. ,** Final Report for the Ministry of Water and Electricity, 2004.
4. "Geological and Engineering Geological Characterization of Fractures and Rock Masses within Dammam Dome, Saudi Arabia", **Mustafa M. Hariri and Osman Abdullatif, ,** SABIC 2002-2006.

5. "Economic evaluation and origin of kaolin deposits in Abha-Khamis-Mushayt area, south eastern edge of the Arabian Shield", **Mahbub Hussain and Osman Abdullatif**, KACST Project 15-7.
6. "A Web-based Database on Water Resources of Saudi Arabia", **Al-Shaibani, A.**, Ongoing Project # ARI-038, Funded by Applied Research Grants, KFUPM, 2004.

Mathematics Department

1. "Combinatorial Results for Semigroups of Order Decreasing Partial Transformation", **A. Laradji** and **A. Umar**, Technical Report # 306, (June 2003).
2. "Techniques for a Prori Choice of Regularizing Parameters in Tikhonov Regularization", **M. Iqbal**, Technical Report # 307, (July 2003).
3. "On the Continuity of the Free Boundary in a Heterogeneous Dam with a Leaky Boundary Condition", **S. Challal** and **A. Lyaghfour**, Technical Report # 308, (September 2003).
4. "On Two Problems of Fuchs and Salce", **A. Laradji**, Technical Report # 309, (October 2003).
5. "Asymptotic Results for Semi Groups of Order-Preserving Partial Transformations", **A. Laradji** and **A. Umar**, Technical Report # 310, (October 2003).
6. "Creativity and Computer in the Teaching and Learning of Mathematics", **B. Yushau**, **A. Mji** and **D.C.J. Wessels**, Technical Report # 311, (December 2003).
7. "On the Number of Decreasing and Order-Preserving Partial Transformations", **A. Laradji** and **A. Umar**, Technical Report # 312, (January 2004).
8. "Combinatorial Results for Semigroups of Order-Preserving Partial Transformations", **A. Laradji** and **A. Umar**, Technical Report # 313, (January 2004).
9. "Numerical Solutions of Linear Ill-posed Problems", **M. Iqbal**, Technical Report # 314, (April 2004).
10. "On 3-Normal Operators", **Adnan A.S. Jibril**, Technical Report # 315, (April 2004).
11. "Random Sums of Random Vectors and Multitype Families of Productive Individuals", **I. Rahimov** and **H. Muttalak**, Technical Report # 316, (April 2004).
12. "Computer Attitude, Use, Experience, Software Familiarity and Perceived Pedagogical Usefulness: The Case of Mathematics Professors", **B. Yushau**, Technical Report # 317, (April 2004).

13. "The Role of Language in the Teaching and Learning of Mathematics", **B. Yushau**, Technical Report # 318, (April 2004).
14. "An extension of Gauss Quadrature Formula", **M.A. Bokhari** and **Tawfiq**, Technical Report # 319, (May 2004).

12. PATENTS AND COPYRIGHTS

- 1.** Award for Scientific Patent earned in the name of “Moveable Surfaces Plane” **Dr. Ahmed Z. Al-Garni**, PATENT # US 6,622,973 B2, 10 May 2004.

13. LECTURES AND SEMINARS GIVEN BY UNIVERSITY FACULTY

Civil Engineering

1. Speaker : Dr. A. H. Al-Gadhib
 Topic : Role of Moisture Diffusivity in the Durability of Cementitious Materials
 Date : March, 2004

Chemical Engineering

1. Speaker : Dr. Ramazan Kahraman
 Topic : Fundamentals of Corrosion
 Date : April, 13, 2004

Electrical Engineering

1. Speaker : Mr. Salah Al-Buraiky
 Title : Automated Arabic Sign Language Recognition Using an Instrumented Glove.
 Date : January 6, 2004.
2. Speaker : Mr. Osama Ahmed
 Title : Signal Enhancement in Nuclear Magnetic Resonance Spectrums
 Date : February 24, 2004
3. Speaker : Dr. S. Zummo :
 Title : On Diversity - Channel Estimation Tradeoff in Wireless Environments
 Date : March 9, 2004
4. Speaker : Dr. M. Deriche
 Title : Biometrics: Automated Recognition of People
 Date : March 16, 2004
5. Speaker : Mr. Ajmal Khan
 Title : Analysis of TM-Pass Reflection Mode Optical Polarizer
 Date : March 23, 2004
6. Speaker : Dr. Z. Al-Hamouz
 Title : Finite Element Computation of Electric Field and Charge Density of a Pulsed Energized Electrostatic Precipitator
 Date : March 30, 2004
7. Speaker : Dr. M. Dawoud

- | | | | |
|-----|---------|---|--|
| | Title | : | High Frequency Radiation and Human Exposure |
| | Date | : | April 6, 2004 |
| 8. | Speaker | : | Dr. Essam Hassan |
| | Title | : | New Thoughts in Surface Reflector Antennas |
| | Date | : | April 20, 2004 |
| 9. | Speaker | : | Dr. A. Zerguine |
| | Title | : | Stochastic Gradient Descent Algorithms: New |
| | | | Directions |
| | Date | : | April 27, 2004 |
| 10. | Speaker | : | Dr. Alaa El-Din Hussein |
| | Title | : | Fractional-N Frequency Synthesizers for Wireless |
| | | | Communications |
| | Date | : | May 4, 2004 |
| 11. | Speaker | : | Dr. Mahmoud, Magdi S., Chairman and Consultant, |
| | | | C-Group for Communications and Computers, Dokki, Giza, |
| | | | Egypt. |
| | Title | : | Robust Decentralized Stabilization of Thermal |
| | | | Power Plants |
| | Date | : | May 18, 2004 |
| 12. | Speaker | : | Dr. Shaikh Sharif Iqbal |
| | Title | : | Smart Card Technology and Applications |
| | Date | : | May 22 to 26, 2004 |

Mechanical Engineering

- | | | | |
|----|---------|---|---|
| 1. | Speaker | : | Dr. Muammer Kalyon |
| | Topic | : | Design of Robust Near Minimum Time Optimal |
| | | | Controllers |
| | Date | : | Feb. 24, 2004 |
| 2. | Speaker | : | Dr. S.A.M. Said |
| | Topic | : | Fluid Flow and Heat Transfer of Natural Convection in |
| | | | Converging and Parallel Vertical Channels |
| | Date | : | March 02, 2004 |
| 3. | Speaker | : | Dr. R. Ben-Mansour |
| | Topic | : | CFD Modeling Using a Software Package |
| | Date | : | March 09, 2004 |
| 4. | Speaker | : | Dr. Ibrahim Dincer |
| | Topic | : | Mobile Learning and Webcentric Approach at |
| | Date | : | March 16, 2004 |

UOIT

5. Speaker : Dr. Ibrahim Dincer
Topic : ME Programs and New Directions
Date : March 20, 2004
6. Speaker : Dr. M.A. Gondal
Topic : Global Environmental Issues and Need for Advanced
(Laser Based) Air Monitoring Techniques
Date : March 30, 2004
7. Speaker : J. Janoschek
Topic : Complete Material Characterization by Using the Latest
Thermal analysis Instruments
Date : April 04, 2004
8. Speaker : Dr. I.M. Allam
Topic : Carburization Failure of High-Temperature Alloys
Date : April 20, 2004
9. Speaker : Dr. A.R.N. Shuaib
Topic : Cryogenic and dry Cutting as Viable Approaches to
Reducing the Risks of Metalworking Fluids
Date : April 27, 2004
10. Speaker : Mr. Ahmed Mujahed,
Topic : Cryogenic Machining of KevlarTM Composites
Date : April 27, 2004
11. Speaker : Mr. Mohammed Gayazullah
Topic : Entropy Generation Around a Solid sphere in a Gas
Stream
Date : May 04, 2004
12. Speaker : Dr. Mehmet Sunar
Topic : Substructural Control of Fuzzy Nonlinear Flexible
Structures
Date : May 18, 2004
13. Speaker : Mohammed Samer Sharife
Topic : Continuous Proximate Time-Optimal Control Applied to
Hard Disk Drive (HDD) Servo Systems
Date : May 18, 2004
14. Speaker : Mr. Jamal Fahim
Topic : Energy Efficient Water-Cooled Centrifugal Chillers
Date : April 20, 2004
15. Speaker : Dr. Mehmet Pakdemirli
Topic : Perturbation Method Applications in Vibrations, Fluids
And Heat Transfer

Date : May 25, 2004

16. Speaker : Mr. Khaled Al-Athel
Topic : Effect of Piezoelectric Actuator Placement on Controlling
The Modes of Vibration for Flexible Structures

Date : May 25, 2004

17. Speaker : Mr. Rashid Mohammed Al-Dossary
Topic : The Effect of Magnetic Field on Combustion and
Emissions in Gasoline Engines

Date : May 26, 2004

Petroleum Engineering

1. Speaker : Dr. El-Sayed A. Osman
Topic : Fuzzy Logic Applications in Petroleum Engineering
Date : Feb. 16, 2004 (Research Institute, KFUPM)
2. Speaker : Dr. Abdulaziz A. Al-Majed
Topic : R&D in Petroleum Engineering at KFUPM
Date : April 14-16, 2004 (OPEC Workshop, Vienna, Austria)

Aerospace Engineering

1. Speaker : Dr. Ahmed Z. Al-Garni
Topic : Flight & Space Sciences - Saudi Science Club, Jeddah.
Date : 24-2-1425H, 14-4-2004G
2. Speaker : Dr. Ahmed Z. Al-Garni
Topic : Aerospace Engineering field
Date : Safar, 1425H, April, 2004G
3. Speaker : Dr. Ahmed Z. Al-Garni
Topic : History of Flight- Aerospace Engineering Club.
Date : Rabi'I, 1425H, May, 2004G
4. Speaker : Dr. Abdullah M. Al-Garni
Topic : Fundamental Investigation of Road Vehicle
Aerodynamics
Date : 16-2-1425H, 06-04-2004G
5. Speaker : Dr. Ahmed Z. Al-Garni
Topic : A story of A Patent - Workshop on Patenting & Intellectual
Property
Date : 22-3-1425H, 11-05-2004G

6. Speaker : Dr. Hanafy M. Omar
 Topic Application of Self Organizing Fuzzy logic Controllers t Spacecraft Attitude Control
 Date : 29-3-1425H, 18-5-2004G

College of Sciences

Chemistry Department

1. Speaker : Dr. Ian Forristal
 Topic : Utilization of Instructional Technology in CHEM 201: Web CT Quizzes & 2-D Animations
 Date : 2nd March, 2004
2. Speaker : Dr. Asrof Ali
 Topic : Synthesis and solution properties of a new class of hydrophobically associating ionic polymers
 Date : 30th March, 2004
3. Speaker : Dr. Ezzat Hagazi, RI
 Topic : Fingerprinting of Petroleum Oil using Laser-Based Techniques
 Date : 6th April, 2004
4. Speaker : Dr. M.I. Wazeer,
 Topic : Solid State NMR, An Overview
 Date : 13th April, 2004
5. Speaker : Dr. Ghazi, Clinic
 Topic : First Aid, and CPR
 Date : 20th April, 2004
6. Speaker : Dr. Maslehuddin, RI
 Topic : Concrete Protection using Local Materials – Research Needs
 Date : 27th April, 2004
7. Speaker : Mr. Shoib A. Qureshi, Library
 Topic : Tutorial/Seminar on e-sources And services: “Science Direct
 Date : 18th May, 2004
8. Speaker : Dr. Chandana Senaratne, RI
 Topic : Organotin Compounds- a Class of Neglected Pollutants
 Date : 25th May, 2004

Earth Sciences Department

1. Speaker : Dr Mustafa Hariri

- Title : Characterization of fractures within Dammam Dome,
Eastern Saudi Arabia
Date : March 23, 2004
2. Speaker : Dr. Osman Abdullatif
Title : Environmental impacts of engineering and quarrying works.
Eastern region, Saudi Arabia.
Date : March 30, 2004.
3. Speaker : Dr. Abdullatif Al-Shuhail
Title : Estimation of thickness in a sand dune with a vertical
velocity profile
Date : April 6, 2004
4. Speaker : Dr. Gabor Korvin
Title : Models of Porous Rock
Date : April 13, 2004
5. Speaker : Dr. Osman Abdullatif
Title : Facies architecture and porosity/permeability pattern in
Wajid sandstone
Date : April 27, 2004
6. Speaker : Dr. Gabor Korvin
Title : What is an $(n+\varepsilon)$ -dimensional space?
Date : 10 January, 2004 (Phys. Tea Seminar)
7. Speaker : Dr. Gabor Korvin
Title : Relation between the Hurst exponent and the entropy of a
self-affine random function.
Date : 29 January, 2004
(Departamento de Matemáticas, UNAM, Mexico City)
8. Speaker : Dr. Gabor Korvin
Title : Fractal Surface and its fractal images
Date : 6 March, 2004 (Phys. Tea Seminar)
9. Speaker : Dr. Gabor Korvin
Title : Is the optical image of a fractally rough surface fractal?
Date : 28 March, 2004 (Maths. Dept.)

Mathematics Department

1.	Speaker	:	Dr. M. El-Gebeily
	Title	:	Approximating Singular Differential Operators by Nearby
	Date	:	Regular Ones.
			Sunday, February 22, 2004
2.	Speaker	:	Dr. A.H. Joarder

	Title	:	Inequalities Involving Mean and Quantile
	Date	:	Sunday, March 7, 2004
3.	Speaker	:	Dr. A. Umar
	Title	:	Combinatorial Properties of Semigroups of Transformations: An Update.
	Date	:	Sunday, March 14, 2004
4.	Speaker	:	Dr. I. Rahimov
	Title	:	On the Number of Large Families in a Multitype Branching
	Date	:	Population Sunday, March 21, 2004
5.	Speaker	:	Dr. S.A. Messaoudi
	Title	:	Blow up of Solutions of a Quasilinear Heat Equation with
	Date	:	Positive Initial Energy Sunday, April 4, 2004
6.	Speaker	:	Dr. J.Y. Abuhlail
	Title	:	On Linear Difference Equations Over Rings and Modules
	Date	:	Sunday, April 18, 2004
7.	Speaker	:	Dr. A. Umar
	Title	:	On a Generalization of the Hat Problem
	Date	:	Sunday, April 25, 2004
8.	Speaker	:	Dr. Y.A. Fiagbedzi
	Title	:	On the Sylvester Equation
	Date	:	Sunday, May 2, 2004
9.	Speaker	:	Prof. B. Chanane
	Title	:	Differential Equations on Time Scales
	Date	:	Sunday, May 16, 2004
10.	Speaker	:	Dr. R. Alassar
	Title	:	On the Effect of "Sphericity" On Forced Convection. (Proj: MS/Phericity/225 (Funded by KFUPM)
	Date	:	Wednesday, June 9, 2004

Math Education Seminars

1.	Speaker	:	Mr. Balarabe Yushau
	Title	:	Language and Mathematics
	Date	:	Tuesday, March 16, 2004
2.	Speaker	:	Drs. R. Alassar, M. Bokhari, S. Ibrahim
	Title	:	On Freshman Calculus Recitation Hour: A Panel Discussion-I
	Date	:	Tuesday, March 23, 2004
3.	Speaker	:	Drs. R. Alassar, M. Bokhari, S. Ibrahim, Abdullah Laradji
	Title	:	On Freshman Calculus Recitation Hour: A Panel Discussion-
	Date	:	II Tuesday, April 13, 2004
4.	Speaker	:	Dr. Mohammad Z. Abu-Sbeih
	Title	:	The Use of Technology in Calculus
	Date	:	Tuesday, April 20, 2004
5.	Speaker	:	Prof. Abul Hasan Siddiqi
	Title	:	Mathematics Education in Countries having Large Muslim
	Date	:	Population

		Tuesday, April 27, 2004
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Physics Department

1. Speaker : N. Maalej
Topic : Attracting Undergraduates to Physics
Date : 22 Feb. 04
2. Speaker : N. Tabet
Topic : Nanocrystalline Zinc Oxide in Catalysis & Optoelectronics
Date : 7 March 04
3. Speaker : A. Sunaidi
Topic : Models of Fractal Growth
Date : 14 March 04
4. Speaker : A. K. Mekki
Topic : Magnetic & Structural Properties of Paradeodymium Sodium Silicate Glasses
Date : 21 March 04
5. Speaker : G. Khattak
Topic : Local structure and redox state of vanadium in Vanadium-Strontium-Borate $[(V_2O_5)_z(SrO)_{0.2}(B_2O_3)_{0.8-z}]$ Oxide Glasses
Date : 04 April 04
6. Speaker : Faiz M
Topic : High-Tc Superconductivity as seen by Angle-Resolved Photoelectron Spectroscopy
Date : 11 April 04
7. Speaker : Z. Yamani
Topic : Doing Physics with Mathematica
Date : 18 April 04
8. Speaker : A. Al-Karmi
Topic : Biological effects of Ultrasound
Date : 25 April 04
9. Speaker : Fyad Ali Hassan Al-Hakim
Topic : Diagnostic Imaging
Date : 23 May 04

Mathematics Department

Lectures/Seminars by outside speakers

1.	Speaker	:	Prof. Gabor Korvin (Earth Sciences dept. KFUPM)
	Title	:	Is the Optical Image of a Fractally Rough Surface Fractal?
	Date	:	Sunday, March 28, 2004
2.	Speaker	:	Ingrid Daubechies' Biographical Note
	Title	:	Wavelets Making Waves in Mathematics and Engineering (A video-taped lecture)
	Date	:	Tuesday, May 04, 2004
3.	Speaker	:	Prof. K. Kundu (Institute of Physics, Bhubaneswar, India)
	Title	:	Davydov's Soliton: A Mathematical Fantasy
	Date	:	Sunday, May 23, 2004
4.	Speaker	:	Prof. M.H. Baluch & (CE Dept.) M.A. Shazali (CE Dept.)
	Title	:	Focus on Mathematics Engineering Students
	Date	:	Tuesday, May 25, 2004

Thesis Defense

1.	Speaker	:	Mr. Abdullah Ali Al-Ramadhan
	Title	:	Determination of the year surface velocity profile by linearized inversion of scattered surface wavefield
	Date	:	Tuesday, May 25, 2004
2.	Speaker	:	Mr. Ali Saeed Al-Gahtani
	Title	:	Two Point Boundary Value Problems for First Order Impulsive Differential Equations
	Date:	:	Monday, May 24, 2004
3.	Speaker	:	Mr. Muhammad Abdulwahhab
	Title	:	Impulsive Dynamic Boundary Value Problems on Time Scales
	Date:	:	June, 2004

Information & Computer Science

1. Speaker : Mr. Syed Manzoor Hussain/Res. Asst. ICS Department
 Title : Architectural Stability Metrics
 Involving Retrospective Approach
 Date : 18- 05 - 2004

2. Speaker : Mr. Abubakar Adam/Research Assistant-ICS Department
 Title : Measuring Cohesion of Object Oriented Systems
 Date : 18 - 05 - 2004

3. Speaker : Mr. Aiman Rasheed
 Title : Methods of Protecting the Stack Overflow Vulnerability
 Date : 04 - 05 - 2004

4. Speaker : Mr. Muhammad Kashif Saeed Khan
Title : Speech/Music Discrimination
Date : 27 - 04 - 2004
5. Speaker : Mr. Khalid Al-Zamil
Title : The Associative Computing Model (ASC)
Date : 20 - 04 - 2004
6. Speaker : Mr. Muhammad Al-Khoraidly
Title : Data Representation and Querying in Multimedia Databases
Date : 13 - 04 - 2004
7. Speaker : Mr. Meshal A. Almashari
Title : Pure Network Bandwidth Estimation Technique
Date : 06 - 04 - 2004
8. Speaker : Mr. Imran A. Hariri
Title : Job Scheduling in Mesh Multicomputers
Date : 09 - 03 - 2004
9. Speaker : Mr. Rahman, Quazi Abidur
Title : Performance Analysis of some Coloring Algorithms on Trapezoid Graphs
Date : 04 - 01 - 2004

Computer Engineering Department

1. Speaker : Mr. Muhammad Rehan Sami
Title: Contest-Aware Congestion Control Over MPLS Networks for Compressed Video Transmission
Date : March 2,, 2004
2. Speaker : Mr. Faisal Nawaz Khan
Title : Finite State Machine State Assignment for Low Power, Reduced Area and Increased Testability using Iterative Algorithms
Date : March 16,, 2004
3. Speaker : Mr. Turki F. Al-Somani
Title: : High Performance Elliptic Curve $GF(2^k)$ Crypto-Processor Architecture
Date : May 11, 2004
4. Speaker : Mr. Saqib Khursheed
Title : Test Set Compaction for Sequential Circuits based on Test Relaxation
Date : May 11, 2004

5. Speaker : Mr. Syed Shamsul Islam
 Title : Modeling and Verification of DHCP
 Date : May 25, 2004

Systems Engineering Department

1. Speaker : Dr. Muammer Kalyon
 Topic : Design of Robust Near Time Optimal Controllers
 Date : March 2, 2004
2. Speaker : Dr. Moustafa El-Shafei
 Topic : Computational Methods for Bio-Informatics
 Date : March 16, 2004
3. Speaker : Dr. Mohamed A. El-Gebeily
 Topic : An Overview of Wavelet Transforms and Some Applications
 Date : April 19, 2004
4. Speaker : Mr. Mujahed Al-Dhaifallah
 Topic : Nevanlinna-Pick Interpolation Theory
 Date : April 27, 2004
5. Speaker : Dr. Malick Ndiaye
 Topic : Integrating Retailing Location Models with GIS in Siting Support System
 Date : March 11, 2004
6. Speaker : Mr. Mohammad Haseebuddin
 Topic : Internal Model Control of Nonlinear Dynamics
 Plants
 Date : Using U-Model
 March 17, 2004
7. Speaker : Mr. Mohammad Fareeddudin
 Topic : Extension of Processing Targeting Models for Two Dependent Processes
 Date : May 22, 2004
8. Speaker : Mr. Ahmed Al-Turki
 Topic : Optimal Target Values for Two Processes in Series Producing a Product
 Date : May 22, 2004
9. Speaker : Mr. W. I. Al-Hajailan
 Topic : Study of Imperfect Production Process with Shortages
 Date : May 23, 2004

DEPARTMENT OF MANAGEMENT & MARKETING

1. Speaker : Dr. Salem M. Al-Ghamdi
 Topic : Not to be Shocked by Reality
 Date : May 2, 2004

14. LECTURES AND SEMINARS GIVEN BY OUTSIDE SPEAKERS AT KFUPM

Petroleum Engineering

1. Speaker : Dr. Taha Moustafa Okasha
 Topic : A Modeling Approach to Questions of Scale
 Organization : Saudi Aramco
 Date : Feb. 24, 2004

2. Speaker : Dr. Raghu Ramamoorthy
 Topic : Use of Acoustic Moduli in Petrophysics
 Organization : Schlumberger, Saudi Arabia
 Date : May 9, 2004

3. Speaker : Dr. Sabry Abdul Alim Mohammad
 Topic : Upscaling Methodology for Reservoir Simulation
 Organization : Zakum Oil Company, Abu Dhabi
 Date : June 6, 2004

4. Speaker : Dr. Ali Al-Mashat
 Topic : A New Mechanistic Two-Phase Fluid Flow Model for Gas Lift Optimization
 Organization : University of Qatar
 Date : June 20, 2004

College of Sciences

Chemistry Department

1. Speaker : Mr. Peter Frank Sanders, Saudi Aramco
 Topic : Microbial Impact and Control in Oil Field Operation
 Date : 24th February, 2004

2. Speaker : Abdullah Al-Naser, Aramco
 Topic : The Application of Inductive Couple Plasma Optical Emission Spectroscopy
 Date : 4th May, 2004

Earth Sciences Department

1. Speaker : Dr. Taha M. Okasha (Saudi Aramco)
 Title : A Modeling Approach to Questions of Scale
 Date : 24 Febr., 2004 (Joint Seminar with RI)

2. Speaker : Prof. John Warren (Univ. of Brunei, Darussalam)
 Title : The Evaporite-Metal Association: A Story of Dissolution, Redox and Brine Focusing
 Date : 2 March, 2004 (Joint Seminar with RI)

3. Speaker : Dr Eric Verschuur (Delft Technical University,
The Netherlands)
Title : The research activities of the DELPHI Consortium at the
DTU
Date : March 16, 2004
4. Speaker : Dr. Ali Sahin (RI)
Title : Patterns of permeability anisotropy in a carbonate reservoir
Date : 20 April, 2004 (Joint Seminar with RI)
5. Speaker : Mr. Raghu Ramamoorthy (Schlumberger, Saudi Arabia)
Title : Use of Acoustic Moduli in Petrophysics
Date : 9 May, 2004 (Joint Seminar with RI & Petr. Eng. Dept.)
6. Speaker : Mr. Shabbir Ahmed (Schlumberger, Saudi Arabia)
Title : Borehole Seismic - Principles & Applications
Date : 11 May, 2004
7. Speaker : Dr Abdullah Mah (Saudi Aramco)
Title : Desktop Mineral Exploration (Remote Sensing Perspective)
Date : 25 May, 2004

Physics Department

1. Speaker : A. Zerguine
Topic : Performance evaluation of lp-based algorithms
Date : 29 Feb. 04
2. Speaker : A. Gondal
Topic : Laser Based Photoacoustic spectroscopy and its
applications
Date : 28 March 04
3. Speaker : W. Forner
Topic : Bipolarons in Polyparaphenylene: Mathematical
Description and Possible Detection
Date : 2 May 04
4. Speaker : John S
Topic : Cave Exploration And Research Opportunities In
Northern And Western Saudi Arabia
Date : 9 May 04
5. Speaker : M. Abdelhadi
Topic : Temperature Dependence of the in-plate resistivity in $\text{YBa}_2\text{-Cu}_3\text{-O}_{7.8}$ Transformation from Super-linear to Linear
Dependence at Fixed Oxygen Content

- Date : 11 May 04
6. Speaker : Kaylan Kundu
 Topic : Solitary Wave Like Solutions in Discrete nonlinear
 Schrodinger Euquations
 Date : 16 May 04

College of Computer Science & Engineering

Computer Engineering Department

1. Speaker : Mr. Osama Qadan, OPNET Representative
 Title : OPNET: Pedagogical Tools for Teaching and Research
 In Computer Networks
 Date : February 24, 2004

Systems Engineering Department

1. Speaker : Mr. Rayan H. Hafiz
 Topic : Tank Monitoring Application System (TMA) at Saudi
 Aramco
 Date : May 4, 2004
2. Speaker : Mr. Waleed M. Murad
 Topic : Strategically Focused Organization Engineering & Operation
 Services
 Date : May 10, 2004