

RESEARCH NEWSLETTER

A RESEARCH COMMITTEE PUBLICATION

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TABLE OF CONTENTS

	<u>Page #</u>
1. FOREWORD	2
2. ABSTRACTS OF SELECTED RESEARCH PROJECTS.....	3
3. RESEARCH/BOOK-WRITING PROJECTS CURRENTLY SUPPORTED BY THE UNIVERSITY	10
4. RESEARCH PROPOSALS UNDER REVIEW	15
5. BOOK-WRITING PROPOSALS UNDER REVIEW.....	17
6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2001-2002	18
7. SABBATICAL LEAVE RESEARCH REPORTS RECEIVED FOR ACTIVITIES UNDERTAKEN DURING THE YEAR 2000-2001	19
8. PUBLICATIONS IN REFEREED JOURNALS REPORTED AFTER JANUARY, 2002	20
9. RESEARCH PAPERS PRESENTED AT CONFERENCES REPORTED AFTER JANUARY, 2002	31
10. BOOKS PUBLISHED AND CONTRIBUTIONS	41
11. TECHNICAL REPORTS.....	42
12. INTERNAL LECTURES/SEMINARS PRESENTED BY KFUPM FACULTY	45
13. SEMINARS OFFERED BY OUTSIDE SPEAKERS AT KFUPM	58

1. **FOREWORD**

The purpose of research at KFUPM is two-fold: to advance or produce new knowledge and to train students. A healthy research program has the added 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 KFUPM Research Committee on a semi-annual basis, provides a snapshot 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.

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

Prof. Osama A. Jannadi
Dean (A), Scientific Research

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

1. **Project No. EE/WAVELET/232 Investigators: Dr. Abdelmalek Zidouri (EE)
Dr. Muhammad Sarfraz (ICS)**

TITLE: Automatic Text Recognition: A Need in Arabization

Abstract: Character recognition is one of the oldest fields of research since the advent of computers. However it is still an open field for researchers due to the challenging nature of perception and recognition. Human understanding of shapes and patterns is associated with a huge amount of information that we gather during our interaction with these patterns or shapes. A human can recognize a mug or its picture quite easily from any angle it will see it. We can read different fonts and styles even when characters are broken or overlapping. It is a difficult task to automatically mimic the perception of the human eye. Nevertheless, optical character recognition (OCR) has advanced a great extent for languages other than Arabic. However Arabic and languages using the Arabic script like Urdu or Farsi, have received the least attention in this field. This is due in part to the lack or little interest in the field and in part to the specificities of the Arabic language. It is written from right to left cursively most of its characters are connected even when typed or printed. Arabic characters are widely used in Arabic countries. If optical character recognition systems are available for Arabic characters, they will be very useful and will have a high commercial value.

In this proposal we intend to contribute in the efforts of automatic handling of Arabic in the Arab world, by developing an Arabic OCR. Our research is based on a system developed by one of the investigators of this proposal called ORAN (Offline Recognition of Arabic characters and Numerals). This system is in progress and has achieved a recognition rate of more than 97% for printed Arabic characters. The system was build and tested for the Arabic Naskh font. The recognition is achieved by matching a candidate character to a reference prototype build for this purpose. The prototypes are designed according to the description obtained for each class of a character shape. The description is obtained through a training process in which character features are extracted. The tool used for this is a method called the MCR (Minimum Covering Run) expression developed and modified to correctly describe character strokes in the Laboratory of Precision and Intelligence at Tokyo Institute of Technology.

2. **Project No. CHE/ENZYME/232 Investigator: Dr. Ibrahim Abureesh**

TITLE: Predicting the Performance of Immobilized Enzyme Reactors for Lactose Hydrolysis: Theoretical Study

Abstract: A general dimensionless mathematical model will be developed for predicting the steady state performance of immobilized enzyme reactor performing lactose hydrolysis. It is assumed that enzymatic lactose hydrolysis follows Michaelis –Menten kinetics with competitive product (galactose) inhibition and no enzyme deactivation occurs. The derived model will take into account the effect of external mass transfer limitations, axial dispersion , residence time , inlet lactose concentration and temperature on reactor performance quantified as lactose conversion and yield.

The performance of immobilized enzyme reactor will be characterized using the following five dimensionless parameters of Damkohler number(Da), Stanton number (St) , Peclet number (Pe) , the Michaelis constant to inhibition constant ratio (η) and the dimensionless input lactose concentration (C_o). The effect of varying the above dimensionless parameters on lactose conversion and yield will be investigated.

The reactor performance will be examined for the general case of dispersed plug flow reactor (DPFR) model in addition to the two ideal models of plug flow (PFR) and continuous stirred tank reactors (CSTR). The proposed model will be able to describe the performance of immobilized enzyme reactors performing irreversible Michaelis – Menten kinetics(i.e. when the galactose concentration is very low) . Also the performance of immobilized enzyme reactor will be compared for the two cases of first order and zero order kinetics. The effect of galactose inhibition on reactor conversion and yield will also be examined. The information that will be presented in this work can be used as guidelines in the design of immobilized enzyme reactors performing lactose hydrolysis.

- 3. Project No. MS/SAFING-SENSOR/234 Investigators:**
a. Dr. Abul Hasan Siddiqi
b. Dr. Khaled Furati

TITLE: Fast Wavelet Algorithms for Simulating Safing Sensor

Abstract: In the airbag system of a car there are two sensors controlling the blowing up of the airbag. The first sensor is a purely electronic sensor. This sensor may also react on electromagnetic influences not caused by a car crash. To avoid the blowing up of the airbag in such a case, a second sensor is used. This is known as safing sensor. The present project is related to the investigation of the following aspects of airbag system:

- (i) Modeling with appropriate physical situations.
- (ii) Conversion of the model into a form amenable to the wavelet method discretization.
- (iii) The solution of resultant matrix equation by the symmetric successive over-relaxation with projection and pre-conditioned conjugate gradient method.

It is expected that this research will lead to more economical algorithms in the sense that it will be faster and, therefore, less time-consuming.

4. **Project No. CRP/GIS/235** **Investigators: Dr. Adel Aldosary (CRP)**
Mr. Shaibu Bala Garba (ARC)

TITLE: **An Investigation into the Application of GIS for Infrastructure and Facilities Management in Saudi Arabia**

Abstract: The proposal proposes a project for an investigation into the use of GIS database systems for the management of institutional infrastructure and facilities in Saudi Arabia. The aging state of infrastructure and facilities constructed during the oil-boom period combined with the current emphasis on maintenance in national development planning requires the introduction of more efficient and effective systems of managing facilities. GIS based systems have been found to improve effectiveness and efficiency in the management of facilities. In Saudi Arabia, certain factors appear to hinder the adoption of GIS systems. The aims of the project are to establish the state of GIS utilization in the country and identify problems of and appropriate strategies for GIS implementation. To support the learning process, the project will include a pilot project of GIS implementation for the King Fahd University of Petroleum and Minerals. The end product of the project will be a manual to assist institutions in GIS implementation. The project will strengthen the status of KFUPM as the premier GIS center of excellence in the sub-region and contribute to teaching and extension services to the community.

5. **Project No. EE/TRELLIS/236** **Investigators:**
Dr. Mohamed A.U. Khan (EE)
Dr. Omar A. Al-Suwailem (EE)
Dr. Mohamed Mohandes (EE)

TITLE: **Trellis-Coded Residual Vector Quantization Based Subband Image Coding**

Abstract: The conventional approach to subband image coding has been to decompose the input signal into subband signals and to code these signals with optimal quantizers. A more effective approach, however, is to jointly quantize all the subband signals in order to minimize the average distortion for a output rate. Techniques using jointly optimized subband approach have been investigated earlier. Recently, it is found that trellis-coded residual vector quantization provides improved rate-distortion performance over conventional residual quantizers with little additional complexity.

In this proposal, a subband image coder with trellis-coded residual vector quantizers is investigated. The proposed structure is designed to exploit statistical dependencies within and across the subbands. The presence of the residual quantization structure to reduce computational complexity and the effectiveness of the trellis structure to provide better quantization cell shapes is expected to result in an attractive balance among reproduction quality, rate, and complexity. The proposed coding technique, due to its smaller computational cost, is expected to emerge as one of the competitors

of the JPEG 2000 international image coding standard.

6. Project No. ME/CYLINDER/237 Investigators:

Dr. Ahmed Z. Al-Garni (ME)

Dr. Saad Ahmed (ME)

Dr. Ahmet Z. Sahin (ME)

TITLE: **An Experimental Investigation of a Leading Edge Rotating Cylinder for Aircraft Operation at High Incidence**

Abstract: The control of boundary layer is very important in the field of aerodynamics, hydrodynamics, and flight mechanics and becomes essential for current wing design technology to increase lift, stalling angle of attack and lift-to-drag ratio. Therefore, support is requested to perform an experimental investigation on a two-dimensional airfoil, NACA 0024, equipped with a rotating cylinder located at the leading edge of the airfoil. The proposed three year experimental program will investigate the effects of U_c/U_∞ and δ on lift and drag coefficients, the size of the separated flow region and the stalling angle of attack.

The proposed program will be carried out in three phases. First, experiments designed to investigate and understand the onset of stall on the airfoil without rotating the cylinder. This will be carried out in Phase I of this proposed study. In Phase II, the effect of rotating the leading edge (U_c/U_∞) on stall characteristics will be examined. Finally, in Phase III, the effect of trailing edge flap angle δ on the stall will be investigated. This will lead to delay the onset of stall, and thus to extend the safe operating range at high angle of attack to increase the lift which will lead to shorter take-off and landing and result in saving fuel.

7. Project No. MS/SOUND/238 Investigator: Dr. Selim Messaoudi (Math)

TITLE: **On Heat Propagation and Thermoelasticity by Second Sound**

Abstract: In the classical theory of heat propagation, the heat flux is given by Fourier's laws. As a result, we get the 'parabolic' heat equation, which predicts an infinite speed of propagation. Some experiments show that heat conduction, in certain dielectric crystals at low temperature, is free of this paradox. In 1948, Cattaneo proposed a relation between the heat and the absolute temperature different from the classical one known as the Fourier's law. As a consequence, we obtained a hyperbolic system describing the heat propagation instead of the usual parabolic heat equation and a hyperbolic system of thermoelasticity instead of the classical coupled system. This phenomenon is called the Second Sound. Our projective in this work is to continue an earlier work by establishing decay results for classical solutions of systems of heat propagation and blow up results for weak (or strong) solutions of systems of nonlinear thermoelasticity by second sound.

8. Project No. CE/SOIL/239 Investigator: Dr. Naser A. Al-Shayea (CE)

TITLE: Elastoplastic Damage Model for 3-D Stress-Strain Behavior of Soil

Abstract: Constitutive modeling of stress-strain behavior of soil has always been a challenging field. Different models exist for predicting this behavior. Dense sands and well-compacted clays exhibit a strain softening behavior. Cap model and bounding surface models do exist for predicting the strain-softening behavior. The problem with these models is that they involve too many parameters for calibration. Determination of these parameters is not an easy task. In addition to this, coding of these models is not simple. In short it can be said that these models are a bit complicated. Continuum damage mechanics (CDM) has been used on concrete, which also exhibits a similar behavior. In this research it is intended to apply this approach in conjunction with plasticity theory. Soils also have non-recoverable plastic strains on unloading. This makes the incorporation of the plastic effect into the behavior, to get a rigorous and complete representation by means of the model.

**9. Project No. PH/BOSE/241 Investigators:
Dr. Saeed M. Al-Amoudi (Physics)
Dr. H. Bahlouli (Physics)**

TITLE: Real Time Dynamics of Bose-Einstein Condensates

Abstract: Bose-Einstein condensation (BEC) is a fascinating and timely subject in atomic and condensed matter physics with very exciting recent experimental developments. Some of the applications of BEC are atom lasers, with wide applications in nonlinear optics and atom interferometry and precision measurements of fundamental constants.

In this proposed work, we will study aspects of the non-equilibrium dynamics of dilute Bose-Einstein condensates. This can be achieved by deriving an equation of motion for small amplitude perturbations of the condensate which includes dissipative effects due to quantum and thermal fluctuations. The non-equilibrium dynamics is studied by using the Keldysh-Schwinger formalism. We will focus on the non-equilibrium dynamics for both homogeneous and inhomogeneous condensates and for repulsive as well as attractive interactions among the condensate atoms. We anticipate that our work will contribute to the understanding of the underlying processes in the dynamics of Bose-Einstein condensates as well as the dissipative quantum and thermal effects on its dynamics.

**10. Project No. MS/ZETA/242 Investigators:
Dr. M. Aslam Chaudhry (Math)
Dr. M. Asghar Qadir (Math)**

TITLE: Formulation Properties and Applications of the Gamma-Zeta

Functions

Abstract: In analogy to the recent development of the family of the extended gamma, zeta and beta functions, we propose to: (a) develop a function which incorporates the two former functions, and which we call the Gamma-Zeta functions; (b) explore its applications in various areas of science and engineering.

11. Project No. MS/MATLAB-2/243 Investigator: Dr. A. Kharab (Math)

TITLE: **An Introduction to Numerical Methods: A MATLAB Approach**

Abstract: This textbook provides an introduction to numerical methods and is intended to be used by undergraduate students for a one-semester course requiring only calculus. This book is for students in mathematics, science, engineering, and computer science who simply want to use numerical methods for their work.

This book introduces students to a wide range of useful and important algorithms. Computer results are presented with full details so that the main steps of the algorithm of each numerical method are visualized and interpreted. A supplement of the book is also being developed for students use with MATLAB. This MATLAB supplement contains functions that give a clear step-by-step expression of the mechanism behind the algorithm of each numerical method covered. Emphasis is placed on understanding how the method works. These M-functions guide the student through the calculations necessary to understand the algorithm(s). A basic knowledge of MATLAB is required for running these functions.

12. Project No. MS/SYMMETRY/244 Investigator: Dr. Walid Al-Sabah (Math)

TITLE: **A New Test of Symmetry and Normality**

Abstract: In this sabbatical leave, I intend to do research on Statistical Tests of Symmetry and Normality, a subject of importance to statisticians and practitioners. The assumptions of symmetry and normality are essential for many of the widely used procedures in applied statistics, and other fields where statistical modeling is used. Many of the classical procedures depend heavily on such assumptions. This work should achieve a rather simple and robust test that is easy to justify and use by statisticians and non-statistician alike.

Over the past few years, I have been involved in administrative work which have severely handicapped my research output, and this will serve as an opportunity for personal development. The Department of Mathematical Sciences at KFUPM should also benefit from this activity, especially in the light of the newly approved undergraduate program in statistics and the

proposed masters program.

13. Project No. EE/BANDGAP/245 Investigator: Dr. Husain A. Al-Jamid (EE)

TITLE: Optimization of the Method of Lines for the Analysis of Photonic Bandgap Structures

Abstract: The proposed work to be done during the sabbatical leave is related to the general area of guided wave Photonic Bandgap structures and devices. A proposal, which consists of two major research efforts to be done in this area is outlined. The first research effort involves the optimization of the Method of Lines numerical scheme for use in the analysis of Photonic Bandgap structures. This includes optimization of a 2D as well as a 3D numerical codes. The second part, which relies on the outcome of the first effort looks into the possible improvement of a certain Photonic Bandgap structure, the commonly used air bridge structure. In this case, the possible use of multi-layer anti-resonance structure is suggested as a replacement to the air at the bottom side of the air bridge. In addition, the use of a metallic substrate for the same purpose is also suggested. The time duration of the sabbatical leave is 12 months. The host institution is the Electrical Engineering Department (Optoelectronics Research Group), University of Glasgow, U.K.

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. Esam Hamad	A New Statistical Thermodynamic Approach to the Excess Gibbs Energy CHE/THERMO/183
Chemical Engineering	Dr. Ibnelwaleed A. Hussein	Rheology and Miscibility of Metallocene LLDPE in LDPE and HDPE: Influence of Molecular Parameters (CHE/RHEOLOGY/223)
Chemical Engineering	Dr. Sleem-ur-Rahman Dr. Ramazan Kahraman Dr. M.A. Abul-Hamayel	Corrosion Protection of Steel by Catalyzed Polypyrrole Films (CHE/C-PROTECTION/227)
Chemical Engineering	Dr. Basel Abu-Sharkh (Che) Dr. Abdullah Al-Sunaidi (Phys)	Simulation and Model Development for the Equation of State and Phase Diagrams of Self-Assembling Nonadditive Hard Chain Copolymers, Mixtures and Solutions (CHE/SIMULATION/228)
Chemical Engineering	Dr. Ibrahim M. Abu-Reesh	Predicting the Performance of Immobilized Enzyme Reactors Performing Enzymatic Lactose Hydrolysis: Theoretical Study (CHE/ENZYME/233)
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 -----
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)
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. 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. 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)

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
College of Computer Science & Engineering		
Computer Engineering	Dr. Sadiq M. Sait Dr. Habib Youssef Dr. Aiman El-Maleh	Iterative Heuristics for Timing and Low-Power VLSI Standard Cell Placement (COE/ITERATIVE/221)
Systems Engineering	Dr. Umar Al-Turki Dr. Shokri Z. Selim Dr. Abdulbasit Andijani	On Stochastic Single Mac- hine Early-Tardy Scheduling SE/SCHEDULE/191
Finance & Economics	Dr. Sulaiman Al-Sakran Dr. Abraham Abraham	An Empirical Investigation of the Saudi Equity Market FIN/EQUITY/219
College of Sciences		
Chemistry	Dr. Bassam M. El Ali Dr. Mohammad Fettouhi	Palladium-Heteropolyacids Catalyzed Asymmetric Syn- thesis of Ibuprofen and Naproxen CY/PALLADIUM/201
Chemistry	Dr. Anvarhusain Isab Dr. H.P. Perzanowski Dr. A.R. Al-Arfaj	^1H , ^{13}C , ^{15}N , ^{77}Se and ^{109}Ag NMR Studies of M(I)- Imidazolidine-2-Thione and Imidazolidine-2-Selenone Complexes (Where $\text{M} = \text{Ag}^+$ and Au^+) (CY/NMR-STUDIES/214)
Chemistry	Dr. Wolfgang Forner	Nonlinear Charge Carriers in Polyparaphenylene CY/NONLINEAR/216
Chemistry	Dr. M. Than Htun	Femtosecond Dynamics of Charge Transfer Reactions in Some Biological Systems CY/FEMTO/222
Mathematical Sciences	Dr. Salah-Eddine Kabbaj	Trivial Ring Extensions Defined by Homological Conditions MS/TRIVIAL/224

College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
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. Salim Messaoudi	On Heat Propagation and Thermoelasticity by Second Sound (MS/SOUND/238)
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. Abdelwahab Kharab	An Introduction to Numerical Methods: A MATLAB Approach (MS/MATLAB-2/243)
Physics	Dr. Azzedine Zerguine Dr. Maamar Bettayeb	Mixed l_2 - l_p Norm Adaptive Algorithms for System Identi-fication: Application to Echo Cancellation (PH/ECHO/193)
Physics	Dr. M.I. Al-Jarallah Dr. M.S. Musazay Mr.E.U. Abu-Azzah	Radon Exhalation Rates from Building Materials and Correlation with Radium Content (PH/RADON/220)
Physics	Dr. S.M. Al-Amoudi Dr. H. Bahlouli	Real-Time Dynamics of Bose-Einstein Condensates (PH/BOSE/241)

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

4. RESEARCH PROPOSALS UNDER REVIEW

College / Department ----- ----	Pr. Investigator/ Co Investigator(s) -----	Title of the Proposal -----
College of Engineering Sciences		
Civil Engineering	Dr. Achi M. Ishaq Dr. M.S. Al-Suwaiyan Dr. Saad A. Aiban	Assessing the Natural Recharge in the Aquifers of the Kingdom
Chemical Engineering	Dr. Esam Hamad	Modeling and Simulation of Stiff Fused-Hard Sphere Chains
Chemical Engineering	Dr. R.N. Sharma Dr. Sleem-ur-Rahman Dr. M.A. Al-Saleh	Mass Transfer from Packed Bed in Pulsating Flow
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
Chemical Engineering	Dr. Sulaiman S. Al-Khattaf Dr. Kevin Loughlin	Industrial Applications Involving Diffusion and Adsorption on para-Xylene and 1,3,5-tri-iso-Propylbenzene in Molecular Sieves
Electrical Engineering	Dr. Abdel-Aal H. Mantawy Dr. Mohamed H. Shwehdi	Optimal Capacitors Placement on Distribution Systems: New Formulation and Solution
Electrical Engineering	Dr. Abu Hamed Abdur-Rahim Dr. Samir Al-Baiyat (EE)	Robust Shunt Connected FACTS Devices for Power System Damping Improvements
Mechanical Engineering	Dr. Hassan M. Badr Dr. M.A. Habib Dr. S.A.M. Said	Turbulent Natural Convection Flow in Parallel and Converging-Plate Vertical

	Dr. R. Ben Mansour	Channels
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Mechanical Engineering	Dr. Ameen H. El-Sinawi Dr. Mohamad N. Hamdan	Two-Dimensional Vibration Suppression in Machining Using a Kalman Estimator- based Feed-Forward Active Controller
College of Sciences Chemistry	Dr. Hassan Badawi Dr. Wolfgang Forner	Density Functional Calcula- tions of Potential Surfaces and Vibrational Infrared and Raman Spectra of Some Halo Alcohol
Chemistry	Dr. A.A. Isab Dr. M.I.M. Wazeer	Multinuclear NMR Study of the Interactions of Some Sulfur Containing Biologically Important Ligands with Cd^{2+} and Hg^{2+} Ions.
Mathematical Sciences	Dr. Ibrahim Rahimov Dr. Hassen Muttlak	Investigation of a Random Sum of Indicators with Applications in Branching Stochastic Processes
Physics	Dr. Ibraheem M.A. Nasser Dr. Ali Mohd. Al-Shukri Dr. Hatem El-Ghandoor	Non-Destructive Investiga- tion of some Characteristics of Optical Waveguides
College of Industrial Management		
Accounting & MIS	Dr. Stephen Owusu-Ansah Dr. Haider Madani	Corporate Disclosure and Reporting Practices in the Gulf Cooperative Council Countries: A Cross-National Comparative Investigation
College of Environmental Design	Dr. Ismail M. Budaiwi Dr. Adel A. Abdou Dr. Thamer A. Al-Rugaib	Total Indoor Environmental Quality and Space Utilization in the KFUPM Main Library
Architectural Engineering Department	Dr. Mohammad S. Al- Hamoud	

5. BOOK WRITING PROPOSALS UNDER REVIEW

College / Department -----	Principal Investigator/ Co-Investigator(s) -----	Title of the Proposal -----
College of Sciences		
Chemistry	Dr. Salah Sultan	General Chemistry
Chemistry	Dr. M. Farhat Ali Dr. Bassam El-Ali	Handbook of Industrial Chemistry: Organic Chemicals
College of Engineering		
Electrical Engineering	Mr. Nuruz Zaman	Computations, Problem Solving and Programming in MATLAB for Beginners
Mechanical Engineering	Dr. Ibrahim Dincer	Porous Media in Modern Technologies: Energy, Electro- nics, Biomedical and Environ- mental Engineering

6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2001/2002

College/ Department	Name of Faculty	Title of Sabbatical Proposal	Host Institution
College of Engineering Sciences Chemical Engineering Department	Prof. Abdullah A. Shaikh	Catalysis and Catalytic Processes [Book-writing Proposal]	KFUPM
College of Engineering Sciences Electrical Engineering Department	Dr. Husain A. Jamid	Optimization of the Method of Lines for the Analysis of Photonic Bandgap Structures	Department of Electrical Engineering, University of Glasgow, UK
College of Industrial Management Department of Management & Marketing	Dr. Salem Al-Ghamdi	Success and Failure Factors in Saudi American Business Negotiations: American Views (Cross-Sectional Survey)	Western Michigan University, Kalamazoo, Michigan, USA.
College of Sciences Islamic & Arabic Studies Department	Dr. Ahmed Matouk	Bilingualism	University of Pennsylvania, Philadelphia, USA
Earth Sciences Department	Dr. Mohammad Makkawi	Forecasting the Impact of Water Demand on Groundwater Aquifers: Stochastic Model Development and Application	Colorado School of Mines, USA and Saudi Aramco.
Mathematics Department	Dr. Walid S. Al-Sabah	A New Test of Symmetry and Normality	University of California at Riverside, California, USA

**7. SABBATICAL LEAVE RESEARCH REPORTS RECEIVED FOR
ACTIVITIES UNDERTAKEN DURING THE YEAR 2000 / 2001**

College/ Department	Name of Faculty	Title of Sabbatical Proposal	Host Institution
College of Engineering Sciences Mechanical Engineering	Dr. Habib Abualhamayel	Rotating Equipment Unit – Report	Saudi Aramco, Dhahran 31261, Saudi Arabia for 3 months..
College of Sciences Chemistry	Dr. M. Than Htun	Femtosecond Dynamics of Charge Transfer Reactions in Some Biological Systems	CALTECH, Pasadena, California, USA

8. PUBLICATIONS IN REFEREED JOURNALS **REPORTED AFTER JANUARY, 2002**

College of Engineering

Civil Engineering

1. "Effect of Waterproofing on Steel Reinforcement Corrosion and Physical Properties of Concrete", **Mesfer M. Al-Zahrani, Salah U. Al-Dulaijan, M. Ibrahim, H. Saricimen, and Alfarabi M. Sharif**, Journal of Cement and Concrete Composite, Vol. 24, February (2002), pp. 127-137.
2. "Effect of Rebar Cleanliness and Repair Materials on Reinforcement Corrosion and Flexural Strength of Repaired Concrete Beams", **Salah U. Al-Dulaijan, Mesfer M. Al-Zahrani, H. Saricimen, M. Maslehuddin, M. Shameem, and T. A. Abbasi**, Journal of Cement and Concrete Composite, Vol. 24, February (2002), pp. 139-149.
3. "Effect of Steel Manufacturing Process and Atmospheric Corrosion on the Corrosion-Resistant of Steel Bars in Concrete", **M. Maslehuddin, Mesfer M. Al-Zahrani, Salah U. Al-Dulaijan, Abdulquddus, S. Rahman, S. N. Ahsan**, Journal of Cement and Concrete Composite, Vol. 24, February (2002), pp. 151-158.

Chemical Engineering

1. "Inhibition of Atmospheric Corrosion of Reinforcing Steel by Sodium Benzoate Treatment", **Kahraman, R.**, ASM Journal of Materials Engineering and Performance, 11, 46-50 (2002).
2. "Numerical Modeling of Melting of Ice Considering Temperature Dependency of Water Density", **Kahraman, R.**, International Journal of Energy Research, 26, 347-354 (2002).
3. "A Study of Corrosion Control of Mild Steel Using Inhibitors in a Simulated Environment", **Kahraman, R., Al-Mathami, A. A., Saricimen, H., Abbas, N. and Rahman, S. U.**, Anti-Corrosion Methods and Materials, Accepted.
4. "Catalytic cracking of polyethylene over all-silica MCM-41 molecular sieve", **Seddegi, Z.S., Budrthumal, U., Al-Arfaj, A.A., Al-Amer, A.M., and Barri, S.I.**, Journal of applied catalysis A:General, 225 (2002), pp. 167-176.
5. "An Optimization Model for Guiding the Petrochemical Industry Development in Saudi Arabia" **Al-Fares, H.K., and Al-Amer, A.M.**, submitted to the Journal of Engineering Optimization", February 2002.
6. "Control Of Ethylene Glycol Reactive Distillation Column," **Al-Arfaj, M. A., and Lyuben, W. L.**, AIChE Journal; V48; 905-908; 2002.

7. "Design And Control Of An Olefin Metathesis Reactive Distillation Column," **Al-Arfaj, M. A.,** and **Lyuben, W. L.,** Chem. Eng. Sci.; V57; 715-733; 2002.
8. "The Role of Diffusion in Alkul-benzene Catalytic Cracking", **AL-Khattaf, S.,** and **de Lasa, H.I.,** Applied Catalysis A, 226, pp139-153 (2002).
9. "The Influence of Y-Zeolite Unit Cell Size on the Performance of FCC Catalysts During Gas Oil Catalytic Cracking", **AL-Khattaf, S.,** Applied Catalysis A, 231, 1-2, pp293-306 (2002).
10. "Diffusion and Catalytic Cracking of 1,3,5 Tri-Iso-Propyl-benzen in FCC Catalysts", **AL-Khattaf, S Atias, A, Jarosch, K and de Lasa, H.I.,** Accepted in Chemical Engineering Science.
11. "Hydrogen Spillover Effects on Pt-Rh Modifies Co-Clay Catalyst for Heavyoil Upgrading" **M.A. Al-Saleh, M.M. Hossain, M.A. Shalabi, T. Kimura,** and **Inui, T.,** submitted to Applied Catalysis, 2002.
12. "The Influence of Lateral Mass Flux on Mixed Convection Heat and Mass Transfer over Inclined Surfaces in Porous Media", **P. Singh, Queeny and R.N. Sharma,** J. Heat & Mass Transfer, 38 (2002), p233-242.
13. "A Simple Model for turbulent Boundary Layer Mass Transfer on Flat Plate in Parallel Flow", **R.N. Sharma and S.U. Rahman,** Chem. Eng. J., 85, (2002), p35-39.
14. "Potential Scans and Potential Energy Distributions of Normal Vibrational Modes of Trichloroacetyl Isocyanate", **H. M. Badawi, W. Forner, B. F. Abu-Sharkh,** and **Y. S. Oloriegbe,** J. Mol. Model, 8, 2002, p44.
15. "Melt Flow Indexer Evidence of High-Temperature Transitions in Molten High-density Polyethylenes", **Ibnelwaleed A. Hussein and Michael C. Williams,** Canadian Journal of Chemical Engineering, (in press).

Electrical Engineering

1. "New ASK/FSK/PSK/QAM wave generator using a single current-controlled multiple output current conveyor," **M.T. Abuelma'atti,** International Journal of Electronics, Vol. 89, pp.35-43, 2002.
2. "Large-signal analysis of transistor circuits with feedback," **M.T. Abuelma'atti,** FREQUENZ, Vol. 56, pp. 83-92, 2002.
3. "Space-Time Trellis Code 8-PSK Schemes for Rapid Rayleigh Fading Channels", **Salam A. Zummo and Saud A. Al-Semari,** EURASIP Journal on Applied Signal Processing, Special Issue on Space-Time Coding and its Applications Part II, vol. 2002, No. 5, pp. 482-486, May 2002.

4. "A Novel Approach for Evaluating the Performance of SPC Product Codes Under Erasure Decoding", **M. A. Kousa**, IEEE Transaction on Communications, vol. 50, no. 1, pp 7-11, Jan 2002.
5. "A Robust mopt-LMS Algorithm for Tracking of Fading Channels," **A.U.H. Sheikh, and Faisal Ali Shah**, Wireless Communications and Mobile Computing, vol., no., pp. March 2002.
6. "On the Sensitivity of IMT-DS Performance to System Parameters," **Raymond Yuen and Asrar U. H. Sheikh**, Wireless Personal Communications, vol. 20, no. 2, pp. 163-178, the Netherlands, February 2002.

Mechanical Engineering

1. "Combining micro-PIXE surface scans with cross-sectional X-ray maps to characterize multiplayer structures", **J Nickel and A. N. Shuaib**, Surface and Interface Analysis, Vol. 33, 2002, pp. 41-46.
2. "Mechanical properties of Al-2.5 Mg-0.1 Mn-Si-Cr-Fe alloys", **A.N. Shuaib**, Materials and Design, Vol. 23, 2002, pp. 181-187.
3. "Flow and Heat Transfer in Rotating Two –Pass Rectangular Channels (AR = 2) by Reynolds Stress Turbulence Model", **Al-Qahtani, M.S., Jang Y.J., Chen H. C. and Han J.C.**, Int. Journal of Heat and Mass transfer, Vol. 45, 2002, pp. 1823-1838.
4. "Prediction of flow and Heat Transfer in Rotating Two-Pass Rectangular Channels with 45-deg Rib Turbulators", **Al-Qahtani, M.S., Jang Y.J., Chen H. C. and Han J.C.**, ASME Journal of Turbomachinery, Vol. 124, April, 2002, pp. 242-250.
5. "Mixed convection around a liquid sphere in a gas stream", **Antar, M.A., and El-Shaarawi, M.A.I.**, Heat and Mass Transfer, Vol. 38, 2002, No. 4-5, pp. 419-425.
6. "Thermoeconomic Consideration in the Optimum Allocation of Heat Transfer Inventory for Refrigeration and Heat Pump Systems", **Antar, M.A. and Zubair, S.M.**, ASME Journal of Energy Resources Technology, Vol. 124, March 2002, pp. 28-33.
7. "A Spreadsheet Solution of Transient Conduction in Composite Fins", **Mokheimer, E.M., Antar, M.A., Farooqi J. and Zubair, S.M.**, International Journal of Energy Research, Vol. 26, pp. 383-397, 2002.
8. "Design of Continuous Time Controllers Having Almost Minimum Time Response", **Kalyon M.**, ASME Journal of Dynamics Systems, Measurement & Control, Vol. 124, June 2002, pp. 1-9.

9. "Closed form solution for exponentially decaying laser pulse heating: Evaporation at the surface", **Kalyon M. and Yilbas B.S.**, Japanese J. of Appl., Vol. 41, Part 1, No. 6A, June 2002, pp. 1-10.
10. "Application of Optimal Control Theory in Pipe Insulation", **Kalyon M. and A.Z. Sahin**, Numerical Heat Transfer, Part A: Application, In press 2002.
11. "The role of exergy in energy policy making", **Dincer, I.**, Energy Policy, 30(2), 137-149, 2002.
12. "Technical Environmental and exergetic aspects of hydrogen energy systems", **Dincer, I.**, International Journal of Hydrogen Energy, 27(3), 265-285, 2002.
13. "On thermal energy storage systems and applications in buildings", **Dincer I.**, Energy and Buildings, 34(4), 377-388, 2002.
14. "Development of a new drying correlation for practical applications", **Dincer I., Hussain, M.M., Yilbas, B.S. and Sahin, A.Z.**, International Journal of Energy Research, 26(3), 245-251, 2002.
15. "Energy analysis of Saudi Arabia", **Dincer I. and Al-Rashed, B.**, International Journal of Energy Research, 26(3), 263-278, 2002.
16. "Development of a new moisture transfer (Bi-Re) correlation for food drying applications", **Dincer I., Hussain, M.M., Sahin, A.Z. and Yilbas, B.S.**, International Journal of Heat and Mass Transfer, 45(8), 1749-1755, 2002.
18. "Determination of drying times for regular multi-dimensional objects", **Sahin, A.Z., Dincer I., Yilbas, B.S., and Hussain, M.M.**, International Journal of Heat and Mass Transfer, 45(8), 1757-1766, 2002.
19. "Energy intensities: an application for Canada", **Dincer I.**, International Journal of Global Energy Issues, 17(1/2), 130-141, 2002.
20. "Energy analysis in fluidized bed drying of wet particles", **Syahrul, S., Hamdullahpur, F. and Dincer I.**, International Journal of Energy Research, 26(6), 507-525, 2002.
21. "Development of a new Bi-Di correlation for solids drying", **Dincer I., and Hussain, M.M.**, International Journal of Heat and Mass Transfer, 45(15), 3065-3069, 2002.
22. "Graphical determination of drying process and moisture transfer parameters for solids drying", **Sahin, A.Z., and Dincer, I.**, International Journal of Heat and Mass Transfer, 45(16), 3267-3273, 2002.
23. "Is bigger thermodynamically better? ", **Cengel, Y.A., Wood, B., and Dincer, I.**, Exergy-An International Journal, 2(2), 62-68, 2002.

24. "Exergy analysis of fluidized bed drying of moist particles", **Syahrul, S., Hamdullahpur, F. and Dincer I.**, Exergy-An International Journal , 2(2), 87-98, 2002.

College of Sciences

Chemistry Department

1. "The Nature of FTIR Band In Acidic Zeolites", **Zaki S. Seddigi**, Reaction Kinetics and Catalysis Letters, 73(1), (2001), P. 63-70.
2. "Theoretical C-As Rotational Barrier, Vibrational Wavenumbers, and Potential Energy Distributions for Vinyl Arsonic Dichloride and Diflouride", **Hassan Badawi and Zaki S. Seddigi**, Journal of Molecular Structure (THEOCHEM), 546, (2001), P. 231-241.
3. "Synthesis and Characterization of High Silica MFI Zeolites", **Zaki S. Seddigi**, Journal of Saudi Chemical Society, 5 (2), (2001), P. 245-254.
4. "Catalytic cracking of polyethylene over all-silica MCM-41 molecular sieve", **Zaki S. Seddigi, Uwais Budrthumal, Abdulrahman A. Al-Arfaj, Adnan M. Al-Amer and Sami A. I. Barri**, Applied Catalysis A, 225, (2002), P. 167-176.
5. "Synthesis of Cyano(ergothionine)gold (I) Complexes and its Disproportionation in Solution", **S. Ahmad and A. A. Isab**, Inorg. Chem. Comm., 4, 362-364 (2001).
6. "Crystal Structure of bromotri(phenyl)phospinesulfidegold(I), (C₆H₅)₃PSAuBr", **M. S. Hussain, A. A. Isab, A. Saeed and A. R. Al-Arfaj**, Z. Kristallogr., NCS, 216, 629-630 (2001).
7. "¹³C, ³¹P and ¹⁵N NMR Studies of the Ligand Exchange Reactions of Auranofin and Chloro(Triethylphosphine)Gold(I) with Thiourea" **S. Ahmad and A. A. Isab**, J. Inorg. Biochem., 88, 44-52 (2002).
8. "Comparative ¹³C and ³¹P NMR Studies of the Ligand Exchange Reactions of Auranofin with Ergothionine, Imidazolidine-2-Thione and Diazinane-2-Thione". **A. Isab and S. Ahmad**, J. Inorg. Biochem., 88, 53-60 (2002).
9. "¹³C NMR Studies of the Interaction of Gold(I) Thiomalate with 6-Mercaptopurine and its Derivatives" **S. Ahmad and A. A. Isab**, J. Coord. Chem., 55, 189-203 (2002).
10. "Gold(I) Complexes with Tertiary Phosphinesulfide Ligands", **S. Ahmad, A. A. Isab, H. P. Perzanowski, M. S. Hussain and M. N. Akhtar**, Transition Metal Chem., 27, 177-183 (2002).

11. "Substituent Effects on Structural Stability of Formyl Ketene and Analysis of Vibrational Spectra of Formyl Haloketenes and Formyl MethylKetene", **H. M. Badawi, A. Al-Saadi, and W. Förner** Spectrochim. Acta Part A, Vol.58, 33(2002).
12. "Two Rotors Potential Scans and Vibrational Assignments for Dihalomethylsulfonyl Isocyanates". **H. M. Badawi, W. Förner, B. F. Abu-Sharkh, and Y. S. Oloriegbe** Spectrochim. Acta Part A, Vol.58, 983(2002).
13. "Three-Fold Rotational Barrier in CH₂=CH-MX₃ (M=C, Si, and Ge, and X=F and Cl) and Analysis of Vibrational Spectra of the Germanes". **H. M. Badawi and Z. S. Seddigi**, J. Mol. Struct. (Theochem), Vol.578, 181(2002).
14. "Structural Stability and Vibrational Assignments and C-N Rotational Barrier in Vinyl Azide". **H. M. Badawi**, J. Mol. Struct. (Theochem), Vol.579, 11(2002).
15. "Vibrational Assignments and Derived Potential Energy Distributions for Tri- and Difluoromethylketene by Density Functional calculations" **W. Förner, H. Badawi, A. Al-Saadi, and S. A. Ali**, Journal of Molecular Modeling 7, 343-353 (2001).
16. "Theoretical Vibrational Spectra of Cyclohexanecarboxaldehyde", **W. Förner and H. Badawi**, Journal of Molecular Modeling, 7, 288-305 (2001).
17. "Potential Function Scans and Potential Energy Distributions for 3-Chloro and 3-Fluoropropanals", **H. Badawi and W. Förner**, Journal of Molecular Structure., 595, 147-166 (2001).
18. "Density Functional Calculations of Vibrational Wavenumbers and Derived Potential Energy Distributions for Fluoro- and Chlorocarbonyl Ketene", **H. Badawi, W. Förner and A. Al-Saadi**, Journal of Molecular Structure, 561, 103-119 (2001).
19. "Potential Energy Distributions and Potential Scans for two Rotors Internal Rotation in 3,3-Dichloro- and 3,3,3-Trichloropropanals", **H. Badawi and W. Förner**, Spectrochimica Acta **A57**, 1471-1489 (2001).
20. "Theoretical Calculation of Potential Energy Distributions and Potential Functions for the Two Rotors Internal Rotation in 2,2,3,3,3-Pentafluoropropanal", **H. Badawi and W. Förner**, Journal of Molecular Structure (Theochem), 545, 137-149 (2001).
21. "Theoretical Vibrational Spectra and Potential Scans for Trichloromethylsulfonyl Isocyanate", **H. Badawi, W. Förner and Y. S. Oloriegbe**, Journal of Molecular Structure (Theochem) , 548, 219-227 (2001).
22. "The Nature of FTIR Band In Acidic Zeolites", **Zaki S. Seddigi** Reaction Kinetics and Catalysis Letters, 73(1), (2001), P. 63-70.
23. "Synthesis and Characterization of High Silica MFI Zeolites", **Zaki S. Seddigi** Journal of Saudi Chemical Society, 5 (2), (2001), P. 245-254.

24. "Catalytic cracking of polyethylene over all-silica MCM-41 molecular sieve", **Zaki S. Seddigi, Uwais Budrthumal, Abdulrahman A. Al-Arfaj, Adnan M. Al-Amer and Sami A. I. Barri** Applied Catalysis A, 225, (2002), P. 167-176.
25. "Changes in Asphalt Chemistry and Durability During Oxidation and Polymer Modification, **Ali, M. F. and Siddiqui, M. N.** "Petroleum Science & Technology", Volume 19, No. 9 & 10, 2001.
26. "Use of X-Ray Technique in Assessing the Aging Pattern of Asphalt Fractions", **Siddiqui, M. N. and Ali, M. F.:** Fuel, Volume 81, No. 1, January 2002, p. 51.
27. "Effect of oil on euendolithic cyanobacteria of the Arabian Gulf", **Al-Thukair, Assad A.**, Environmental Biology, 4(2), 125-129, 2002.

Earth Sciences Department

1. "Habitats of hydrocarbons in Bangladesh", **Imam, M.B., Hussain, M. J.** Petr. Geology, **25**, (2001): 31-52.
2. "Improving response variable prediction by conditional simulation procedures", **Makkawi, M.** in Groundwater Hydrology Vol. 2, ed. by Sherif, M., Singh, V., and Al-Rashed, M., A.A. Balkema Publishers, The Netherlands, pp. 261-268, 2002.

Mathematical Sciences Department

1. "Six Ways to look at Linear Interpolation", **Joarder, A.H.**, International Journal of Mathematical Education in Science and Technology, 32, No.6 (2002), 932-937.
2. "Estimation of the Scaled Covariance Matrix of a Multivariate t -model using a Known Information", **Joarder, A.H. and S. Singh**, Metrika, 54, No.1, (2001), 53-58.
3. "A Refinement Over the Usual Formulae for Deciles", **Joarder, A.H. and Firozzaman, M.**, International Journal of Mathematical Education in Science and Technology, 32, No.5, (2001), 761-765.
4. "Pretest Estimation of Eigenvalues of a Wishart Matrix", **Ahmed, S.E., Volodin, A.I. and Joarder, A.H.** International Mathematical Journal, 1, No.3, (2001), 259-272.
5. "Quartiles for Discrete Data", **Joarder, A.H. and Firozzaman, M.**, Teaching Statistics, 23, No.3, (2001), 86-89.
6. "Median Estimation using Double Sampling", **Singh, S., Joarder, A.H. and Tracy, D.S.**, Australian and New Zealand Journal of Statistics, 43, (2001), 33-46.

7. "An Initial Value Problem of Heat Conduction in a Plate with Hyperbolic Model" **Khalid Masood** and **F.D. Zaman**, International Mathematical Journal, 2, No.3, (2002), 237-253.
8. "Initial Inverse Problem in Heat Equation with Bessel Operator" **Khalid Masood**, **S. Messaoudi** and **F.D. Zaman**, International Journal of Heat and Mass Transfer, 45, No.14, (2002), 2959-29659.
9. "First Order Differential Inclusions with Nonlocal Conditions", **A. Boucherif**, Applied Math. Letters, 15, No.4, (2002), 409-414.
10. "Impulsive Functional Differential Equations with Nonlocal Conditions", **H. Akca**, **A. Boucherif** and **V. Covachev**, Intern. J. Math and Math. Sciences, 29, No.5, (2002), 251-256.
11. "Adjusted Two-Stage Adaptive Cluster Sampling", **Muttlak, H.A.** and **Khan, A.**, Environmental and Ecological Statistics, 9, (2002), 111-120.
12. "Adjusted Two-Stage Adaptive Cluster Sampling with Ranked Set Sampling", **Khan, A.** and **Muttlak, H.A.**, The Bangladesh Journal of Scientific Research, (2002).
13. "A Comparison of the Maximum Likelihood Estimators under Ranked Set Sampling and Some of its Modifications", **Shaibu, A.B.** and **Muttlak, H.A.**, Applied Mathematic and Computation, vol. 129, (2002), 4410453.
14. "Variance Estimation using Ranked Set Sampling", **Abu-Dayyeh, W.A.** and **Muttlak, H.A.**, Pakistan Journal of Statistics, 18, (2002).
15. "Random Fixed Points for *-Nonexpansive Random Operators", **A.R. Khan** and **N. Hussain**, J. Appl. Math. Stoch. Anal. 14, No.4, 2001, 341-349.
16. "Some Results on Multivalued s-nonexpansive Maps", **A. Latif**, **A. Bano** and **A.R. Khan**, Radovi Mat., 10, No.2, 2001, 195-201.
17. "Random Fixed Point Theorems for *-nonexpansive Operators in Frechet Spaces", **A.R. Khan** and **N. Hussain**, J. Korean Math. Soc. 39, No.1, 2002, 51-60.
18. "Group-valued unmeasured and the Range of Measures", **A.R. Khan** and **S.H. Khan**, Scientific Annals of "Al-I. Cuza", University of Iasi, 47, 2001, 35-42.
19. "Numerical Inversion of Laplace Transform Reproducing Kernal Hilbert Spaces", **M. Iqbal**, International Journal of Mathematical Education Science and Technology, 33, (2002).
20. "Global Existence and Nonexistence in a System of Petrovsky, J. Math. Anal. Applications", **Messaoudi, S.**, J. Math Anal. Appl., 265, (2002), 296-308.
21. "Development of Singularities in Solutions of a Hyperbolic System, **Messaoudi, S.**, Int. J. Math. & Math. Sciences, 28, No.1, (2002), 1-7.

22. "Nonexistence Results for the Cauchy Problem of Some Systems of Hyperbolic Equations", **Kirane, M. and Messaoudi, S.**, Annales Polonici Mathematici LXXVIII, 1, (2002), 39-47.
23. "Extended Gamma and Digamma Functions", **M. Aslam Chaudhry and S.M. Zubair**, An International Journal for Theory and Applications, 4, No.3, (20002), 303-326.
24. "Variant of Moreau's Sweeping Process", **A.H. Siddiqi**, Advances Non-linear Variation Inequalities, USA, 5, No.1, (2002), 1-16.
25. "A Rate-Independent Evolution Quasi-Variational Inequality", **A.H. Siddiqi**, Advances Nonlinear Variational Inequalities, USA, 5 No.1, (2002), 17-28.
26. "Long-term Effect of Sulfate Ions and Associated Cation Type of Chloride-Induced Reinforcement Corrosion in Portland Cement Concretes", **H.A.F. Dehwah, M. Maslehuddin and S.A. Austin**, Cement and Concrete Composites, 24, No.1, (2002), 17-25.
27. "Extended Riemann Zeta Functions" **M. Aslam Chaudhry, Asghar Qadir, M.T. Boudjelkha, M. Rafique and S.M. Zubair**", Rocky Mountain, Journal of Mathematics, 31, No.4, (2001), 1237-1263.

Physics Department

1. "Distorted Wave Born Approximation Fit to $^{13}\text{C}(\text{d,p})$ ^{14}C Cross Section Data at $E_d = 200\text{-}350$ keV," **A.A. Naqvi, M.M. Nagadi**, S. Kidwai and Khateeb-ur-Rehman, Phys Rev., Vol. C 65, (2002) 054615-05462.
2. "X-Ray Photoelectron Spectroscopy (XPS), and Magnetization Studies of Iron-Vanadium Phosphate Glasses," **M.A. Salim, G.D. Khattak**, and P.S. Fodor and L.E. Wenger, J. Non-Crystalline Solids, Vol. 289 (2001) 185.
3. "X-Ray Photoelectron Spectroscopy (VPS) of Zinc-Tellurite Glasses," **G.D. Khattak** and M.A. Salim, J. Electron Spectroscopy and Related Phenomena, Vol. 123 (2002) 47.
4. "Natural Radioactivity in the Scale of Water Well Pipes," **Aksoy, A., Al-Jarallah, M.I.** and Al-Haddad, N., J. Environ. Radioact., Vol. 61 (2002) 33-40.
5. "Alpha Auto-Radiography of Gas Lantern Mantles," **Al-Jarallah, M.I.**, Abu-Jarad, F., and Aksoy, A., Journal of King Abdulaziz University: Eng. Sci., Vol. 13, (2001) 185-92.
6. "An XPS and Physical Properties of Praseodymium Sodium Silicate Glasses," **A. Mekki, K.A. Ziq**, D. Holland, and C.F. Mcconville, Phys. Chem. Glasses, Vol. 43 (2002) 4146.
7. "Conductance Through a Single Nonlinear Impurity," **M.I. Molina and H. Bahlouli**, Physics Letters A, Vol. 294 (2002) 87-94.
8. "Propagating Modes in Chains with Arbitrary n-Mer," **E. Abu-Azzah, N. Zekri** and

H. Bahlouli, Alg. Rev. Nucl. Sci. Vol. 3 (2001) 77-78

9. "Diagonal and Off-Diagonal Recursion Relation for the General Potential $V(r) = Ar^p$," **Harry A. Mavromatis** International Journal of Theoretical Physics Vol. 40 (2001) 1665-1670.

College of Computer Science & Engineering

Information & Computer Science Department

1. "COPS:Cooperative Problem Solving Using DCOM", **Nasir Al-Darwish**, Journal of Systems and Software, Nov. 2002
2. "Some Remarks on a Rational Cubic Spline for the Visualization of Monotonic Data", Sarfraz, M., Computers & Graphics, Elsevier Science, (2002), Vol. 26(1), 193-197.
3. "Automatic Outline Capture of Arabic Fonts", **Sarfraz, M., and Khan, M. A.**, Journal of Information Sciences, Elsevier Science Inc., (2002), Vol. 140(3-4), 269-281.
4. "Visualization of Shaped Data by a Rational Cubic Spline Interpolation", **Sarfraz, M.**, Butt, S., and Hussain, M. Z., Computers & Graphics, Elsevier Science, (2001), Vol. 25(5), 833-845.

Computer Engineering Department

1. "Parallellising Tabu Search on a Cluster of Heterogeneous Workstations", **Ahmad Al-Yamani, Sadiq M. Sait, Habib Youssef and H. Barada**, Journal of Heuristics, Special Issue on Parallel Metaheuristics, Vol 8, Number 3, May 2002.
2. "An All-Digital Clock Recovery and Data Timing Circuitry for High Speed NRZ Data Communications," **Muhammad E. S. Elrabaa**, Institute of Electronics, Information and Communication Engineers (Japan) Transactions on Electronics, Vol. E85-C, No. 5, P. 11760, May 2002.
3. "A Contention-Free DOMINO Logic For Scaled-Down CMOS," **Muhammad E. S. Elrabaa, Mohab Anis, and Mohamed Elmasry**, Institute of Electronics, Information and Communication Engineers (Japan) Transactions on Electronics, Vol. E85-C, No. 5, P. 1177, May 2002.

College of Environmental Design

Construction Engineering & Management Department

1. “Safety Factors Considered by Industrial Contractors in Saudi Arabia”, **Jannadi O., and Bu-Khamsin, M.A.**, The International Journal of Building Science and Its Application, Vol. 37, No. 5, 2002, pp. 539-547.
2. “Cost Estimating Model for Small and Medium Reverse Osmosis Desalination Plants in Arid Countries”, **Jannadi O., Abderrahman, W., Assaf, S., and Al-Matter, A.**, The International Journal of Water Resources Development, Vol. 18, No. 4, 2002.

9. RESEARCH PAPERS PRESENTED AT CONFERENCES REPORTED AFTER JANUARY, 2002

College of Engineering

Civil Engineering

1. “Technical and Economic Aspects of Crossflow Microfiltration”, **M. H. Al-Malack**, The International Congress on Membranes and Membrane Processes, at Toulouse, France, 7-12 July, 2002.
2. “Reuse of Wastewater Effluents in Saudi Arabia”, **A. M. Ishaq**, The 2002 Joint CSCE/EWRI/ASCE Conference on: Environmental Engineering, Niagara Falls, Ontario, Canada, 21-24 July, 2002.
3. “Effect of Calcium Sulfate on Swelling Potential of an Expansive Soil”, **S. N. Abduljawwad**, 4th International Congress on Geotechnics (4th ICEG) at Rio de Janeiro, Brazil, 10-16 August, 2002.
4. “Stiffness of Semi-rigid Cap-plate Type Connections”, **A. K. Azad**, Second ASEM ’02 Conference at Pusan, South Korea, 21-23 August, 2002.
5. “Effect of Soil Pollution on Substructures (Theme Issue: Energy & Environment Interactions)”, **O.S.B. Al-Amoudi**, The Fifth Singapore Concrete Week and the 27th Conference on: Our World in Concrete and Structures, Singapore, 26-31 August, 2002.
6. “Effect of Steel Manufacturing Process and Atmospheric Corrosion on the Corrosion-Resistant of Steel Bars in Concrete”, **Salah U. Al-Dulaijan**, The Fifth Singapore Concrete Week and the 27th Conference on: Our World in Concrete and Structures, Singapore, 26-31 August, 2002.
7. “Effect of Degree of Corrosion on the Properties of Reinforcing Steel Bars”, **A. A. Almusallam**, The Fifth Singapore Concrete Week and the 27th Conference on: Our World in Concrete and Structures, Singapore, 26-31 August, 2002.
8. “Analytical Model to Quantify Crude Oil Spill Volume in Sandy Layered Aquifers”, **M. S. Al-Suwaiyan**, Conference on: Innovative Approaches to Ground Water Disinfection: Coliforms, Pathogens, and Contaminants, Sacramento, USA, 5-6 September, 2002.
9. “Non-woven Geotextile Sabkha and Sand Interface Frictional Characteristics Using Pull-out Test”, **S. A. Aiban**, Seventh International Conference on Geosynthetics, Nice-France, 22-27 September, 2002.
10. “An Opinion Survey on Certification of Civil Engineers in Saudi Arabia”, **A. K. Azad, H. I. Al-Abdul Wahhab, M. K. Asi, N. A. Al-Shayea, M. S. Al-**

- Suwaiyan, H. J. Al-Gahtani and A. A. Khathlan,** Symposium on Certification of Practicing Engineers in Saudi Arabia: Issues and Challenges, KFUPM, 30 April, 2002, English Part, p. 19-26.
11. “Enhancing the Water Supply in Arid Zones with Treated Effluents: A Laboratory Study”, **Khan, A., Ishaq, A. and Al-Suwaiyan, M.**, Proceedings of the International Conference on Water Resources Management in Arid Regions (WaRMAR), M.M. Sherif, V.P. Singh & M. Al-Rashed (eds.), Kuwait, March 23-27, 2002, pp. 145-158.
 12. “Assessing the Anaerobic Condition during Wastewater Recharge: A Laboratory Study”, **Ishaq, A.M., Al-Suwaiyan, M.S. and Khan, A.A.**, Proceedings of the International Conference on Water Resources Management in Arid Regions (WaRMAR), M.M. Sherif, V.P. Singh and M. Al-Rashed (eds.), Kuwait, March 23-27, 2002, pp. 221-231.
 13. “Performance Modification of Saudi-Asphalt Binders Using Local Polymers”, **Al-Abdul Wahhab, H.I., Asi, I.M. and Abaker, I.**, Proceedings of the First Gulf Conference on Roads, Kuwait, 11-13 March, 2002, pp. 150-164.
 14. “The Effect of Testing Procedures on the Assessment of the Load Carrying Capacity of Calcareous Base Course Materials”, **Aiban, S.A. and Mohammed, O.E.**, Proceedings of the First Gulf Conference on Roads, Kuwait, 11-13 March, 2002, pp. 207-225.
 15. “Stabilization of an Eastern Saudi Sabkha Soil”, **Al-Amoudi, O.S.B., Al-Ayedi, E.S., Aiban, S.A. and Al-Abdul Wahhab, H.I.**, Proceedings of the First Gulf Conference on Roads, Kuwait, 11-13 March, 2002, pp. 226-236.
 16. “Geotechnical Characteristics of Twenty Samples from Eastern Saudi Sabkha Soils”, **Al-Amoudi, O.S.B., Aiban, S.A. and Al-Abdul Wahhab, H.I.**, Proceedings of the First Gulf Conference on Roads, Kuwait, 11-13 March, 2002, pp. 237-248.
 17. “A Perspective of Overweight Truck Problems in Saudi Arabia”, **Azad, A.K., Al-Abdul Wahhab, H.I. and Parvez, S.**, Proceedings of the First Gulf Conference on Roads, Kuwait, 11-13 March, 2002, pp. 428-439.
 18. “Development of Pavement Management System for Municipality Roads, Saudi Arabia”, **Al-Abdul Wahhab, H.I., Ramadhan, R.H., Asi, I.M. and Yazdani, J.**, Proceedings of the First Gulf Conference on Roads, Kuwait, 11-13 March, 2002, pp. 646-663.

Chemical Engineering

1. “A mathematical Programming Model for Optimum Economic Planning of the Saudi Arabian Petrochemical Industry”, **Al-Fares, H.K., Al-Amer, A.M., and Shaikh, S.**, abstract accepted for the 6th Saudi Engineering Conference, October 2002, Dhahran, Saudi Arabia.

2. "Study of Equilibrium Adsorption of Orthophosphate on Alumina Adsorbents", **A.I. Fatehi**, Accepted for presentation at the 6th Saudi Engineering Conference, October 2002, Dhahran, Saudia Arabia.
3. "Fuel Cells Development for Automobiles Applications (2002)", **S.M.J. Zaidi**, ASME Conference on Engineering Systems Design and Analysis, July 8-11, Istanbul, Turkey (Accepted).
4. "Rheological Study of the influence of Branch Content on the Miscibility of Octene m-LLDPE/LDPE and ZN-LLDPE/LDPE Blends", **Ibnelwaleed A. Hussein** and **Michael C. Williams**, 18th Polymer Processing Society meeting, Portugal, June 18-22, 2002.

Electrical Engineering

1. "A Variable Weight Mixed-Norm Adaptive Algorithm," **A. Zerguine** and **T. Aboulnasr**, Proceedings of the IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP), Orlando, Florida, USA, May 13-17, 2002.
2. "Web based Engineering Education", **Sharif Iqbal Sheikh**, accepted for publication in the Six Saudi Engineering Conference, Saudi Arabia, 21-23 October 2002.
3. "Internet/Intranet Based Higher Education", **Sharif Iqbal Sheikh** and **Junaid Siddiqui**, The fourth workshop on Information and Computer Science (WICS), Saudi Arabia, 17-19 March, 2002.
4. "Multi-Null Steering Using Different Control Parameters in Rectangular Planar Arrays", **Mahmoud Dawoud** and **Mohammad Nuruzzaman**, The 9th Annual IEEE Technical Exchange Meeting Dhahran, Saudi Arabia, April 2002.
5. "An Algorithm for Thinning The Binary Images", **Mohammad Nuruzzaman**, The 9th Annual IEEE Technical Exchange Meeting, Dhahran, Saudi Arabia, April 2002.
6. "Mobile Radio Channel Impulse Response: Measurements and Interpretations," **A.U.H. Sheikh** and **S. F. Hau**, Proceedings IEEE-International multi-topic Conference on Technology for the 21st Century (INMIC'01), Lahore, Pakistan, pp. 162-166, December 2001.
7. "Genetic Algorithm Based Adaptive Controller for Interior Permanent Magnet Synchronous Motor Drive," **M. A. Rahman**, **M. N. Uddin**, and **M. A. Abido**, Power Conversion Conference PCC-2002 Paper # 06-4, Osaka, Japan, April 2-5, 2002.
8. "A Novel Multiobjective Evolutionary Algorithm for Solving Environmental/Economic Power Dispatch Problem," **M. A. Abido**, Power System

Computation Conference PSCC-2002, Paper # 361, Seville, Spain, June 24-28, 2002.

9. "Analysis and Design of Power System Stabilizers and FACTS Based Stabilizers Using Genetic Algorithms," **M. A. Abido and Y. L. Abdel-Magid**, Power System Computation Conference PSCC-2002, Paper # 360, Seville, Spain, June 24-28, 2002.
10. "Harmonic and intermodulation performance of Mach-Zehnder quadratic electro-optic intensity modulator," **M. T. Abuelma'atti**, Wireless Design Conference, London, U.K., pp. 181-184. May 15-17, 2002.
11. "Prediction of passive intermodulation arising from corrosion in mobile communication systems," **M. T. Abuelma'atti**, Wireless Design Conference, London, U.K., pp. 103-106, May 15-17, 2002.

Mechanical Engineering

1. "A Numerical Study of Flow and Heat Transfer in Rotating Rectangular Channel (AR = 4) with 45° Rib Turbulators by Reynolds Stress Turbulance M Model", **A Qahtani, M.S., Chen H. C. and Han J.C**, ASME Paper GT-2002-30216.
2. "Technical aspects of thermal energy storage systems and applications in buildings", **Dincer, I.**, Proceedings of the First Symposium on Energy Conservation and Management in Buildings, pp. 113-133, 5-6 February 2002, Dhahran, Saudi Arabia.
3. "Exergy as a new measure of environmental degradation", **Dincer, I.**, Proceedings of the ICERD-2, the Second International Conference on Energy Research and Development, pp. 393-404, 8-10 April 2002, Kuwait.

College of Sciences

Chemistry Department

1. "Theoretical Vibrational Spectra of Small Organic Ring Compounds in Comparison to Experiment", **W. Förner**, Lecture at the Fourth Congress of the International Society for Theoretical Chemical Physics (9.-16. July 2002), to take place in Marly-le-Roi, by Paris, France.
2. "Energy Storage and Transport in Proteins", **W. Förner**, Proc. First Saudi Science Conference held at KFUPM in April 2001 (ISBN 9960-07-172-3), Vol. 1, 31-48 (2001).
3. "Computational Study of Substituent Effects and Vibrational Analysis of Formyl Haloketenes and Formyl Methylketene", A. Al-Saadi, **W. Förner** and H. Badawi, Proc. First Saudi Science Conference held at KFUPM in April 2001 (ISBN 9960-07-172-3), Vol. 1, 307-318 (2001).

4. "Theoretical Calculations and Analysis of Vibrational Infrared and Raman Spectra for Trifluoromethylsulfonyl Isocyanate", Y. S. Oloriegbe, **W. Förner** and H. Badawi, Proc. First Saudi Science Conference held at KFUPM in April 2001 (ISBN 9960-07-172-3), Vol. 1, 421-432 (2001).
5. *"Theoretical Vibrational Spectra of Organic Ring Compounds Compared to Experiment"*, **W. Förner**, Submitted to the organizers (10.4.02) for the Proceedings of the 4th Congress of the International Society for Theoretical Chemical Physics to be held in Marly-le-Roi, France, July 9-16, 2002.
6. "The Effect of Age Hardening on the Structure of Asphaltenes Derived from Arabian Asphalts" M. F. Ali and **M. N. Siddiqui**, Proceedings, American Institute of Chemical Engineers (AIChE), Spring National Meeting, March 10-14, 2002, New Orleans, LA.

Earth Sciences Department

1. "Identifying and mapping key diagenetic lithotypes; A new approach in modeling carbonate reservoirs", **Al Eid Gazi, A., Kamal, R.A., Cole, J.C., Hussain, M., Imam, B., and Hughes, G.W.** GEO 2002, Bahrain, April 15-18, 2002
2. "Use of the GIS (Geographic Information System) in determining relationship between geology, structures and mineral prospects, Southern part of the Arabian Shield, Saudi Arabia", **Hariri, M.M.** GIS 2002 Intern. Conf. Proc., Manama, Bahrain, March 11-13, 2002.
3. "Petroleum geology education at KFUPM", **Hussain, M.** Invited Talk, AAPG Ann. Conf., Houston, March 9-14, 2002.
4. "Source beds for the Mesozoic and younger oils in Saudi Arabia: Constraints on biomarker applications", **Hussain, M., and Raza, M.J.** AAPG Ann. Conf., Houston, March 9-14, 2002.
5. "Maximum Entropy Inversion of bulk rock properties", **Korvin, G.** Symp. on "Arreglos de Fractura", UNAM, Mexico City, 25 Febr., 2002.
6. "Fractal scattering from porous medium", **K. Oleschko and Korvin, G.** Day on Diffraction, St Petersburg, Russia, 5-8 June, 2002.
7. "Entropy based triangle for designing sustainable soil management", **K. Oleschko, Korvin, G. and Figueroa, B.** 17th World Congress on Soil Science, Bangkok, Thailand, 14-20 August, 2002.

Mathematical Sciences Department

1. "AN INVERSE PROBLEM IN DAMPED WAVE EQUATION", F.D. ZAMAN AND KHALID MASOOD, THE SIXTH SAMS CONFERENCE, KING SAUD UNIVERSITY, RIYADH, 9-10, APRIL 2002.
2. "FIRST ORDER IMPULSIVE DIFFERENTIAL INCLUSIONS", A. BOUCHERIF, THE SIXTH SAMS CONFERENCE, KING SAUD UNIVERSITY, RIYADH, 9-10, APRIL 2002.
3. "DECAY IN HEAT PROPAGATION GUIDED BY SECOND SOUND", MESSAOUDI, S., THE SIXTH SAMS CONFERENCE, KING SAUD UNIVERSITY, RIYADH, 9-10, APRIL 2002.
4. "TEACHING OF MATHEMATICS THROUGH REAL WORLD PROBLEMS", A.H. SIDDIQI, THE SIXTH SAMS CONFERENCE, KING SAUD UNIVERSITY, RIYADH, 9-10, APRIL 2002.
5. BAYESIAN REGULARIZATION OF NUM-INVERSION OF MELLIN TRANSFORM", M. IQBAL, THE SIXTH SAMS CONFERENCE, KING SAUD UNIVERSITY, RIYADH, 9-10, APRIL 2002.

Physics Department

1. "Structure of PF₃ Adsorbed on Cu(100)," **M.S. Kariapper**, Proceedings of the Workshop on Surface Physics, Sultan Qabous University, Oman, March 15-18, 2002.
2. "EBIC/XPS Study of Antimony Equilibrium Segregation at the Germanium Surface," **N. Tabet**, Proceedings of the Defects and Diffusion Forum, 2002.
3. "Investigation of the Magnetic Properties in Transition Metal Oxide Glasses," Manford Chinkhota, P.S. Fodor, **G.D. Khattak**, and L.E. Wenger, Proceedings of 46th Annual Conference on Magnetism & Magnetic Materials, Nov. 11-15, 2001.
4. "X-Ray Photoelectron Spectroscopy (XPS) Studies of Iron–Vanadium Phosphate Glasses," **G.D. Khattak** and M.A. Salim, Proceedings of the First Saudi Science Conference, 2001, 103

College of Computer Sciences and Engineering

Information & Computer Science

1. "On the capacity and feedback codes of the Asymmetric Channel", L. Talinni, **S. Al-Bassam** and B. Bose , International Symposium on Information Theory, June 2002.

2. "Performance and Low Power Driven VLSI Standard Cell Placement using Tabu Search", Sadiq M. Sait, **Mahmood R. Minhas** and Junaid A. Khan, In proceedings of IEEE Congress on Evolutionary Computation (CEC'2002), held in Honolulu, Hawaii, U.S.A., May 12-17, 2002
3. "Fuzzy Biasless Simulated Evolution for Multi-objective VLSI Placement", Junaid A. Khan, Sadiq M. Sait and **Mahmood R. Minhas**, In proceedings of IEEE Congress on Evolutionary Computation (CEC'2002), held in Honolulu, Hawaii, U.S.A., May 12-17, 2002.
4. "Dynamic NC Algorithm for Embedding of a Cycle on Trees Architecture", Albert William, Indra Rajasingh, Jasintha Quadras and **Paul D. Manuel**, Proceedings of Seminar on Applications of Mathematics and Statistics, March 15 – 16, 2002, Madurai Kamaraj University, India
5. "A data-centric design for n-tier architecture", **Paul Devasahayam Manuel**, and **Jarallah AlGhamdi**, The Proceedings of the Fourth Workshop on Information and Computer Science: Internet Computing (WICS'2002), Saudi Arabia, (2002), ISBN: 9960-07-187-1.
6. "Web Operating System", **Salah, K.**, and Mufti, A., The Proceedings of the Fourth Workshop on Information and Computer Science: Internet Computing (WICS'2002), Saudi Arabia, (2002), ISBN: 9960-07-187-1, pp 279-287.
7. "Starvation Problem in CPU Scheduling for Multimedia Systems," **Salah, K.**, and Saliu, M., The Proceedings of the Fourth Workshop on Information and Computer Science: Internet Computing (WICS'2002), Saudi Arabia, (2002), ISBN: 9960-07-187-1, pp 489-497.
8. "Automatic Font Outline Capturing Through WEB", **Sarfraz, M.**, and Razzak, M. F. A., The Proceedings of the Fourth KFUPM Workshop on Information and Computer Science: Internet Computing (WICS'2002), Saudi Arabia, ISBN: 9960-07-187-1, pp 253-265, March 17-18, 2002.
9. "Visualization of Data using Genetic Algorithm", **Sarfraz, M.**, and Raza, S. A., The Proceedings of the Fourth KFUPM Workshop on Information and Computer Science: Internet Computing (WICS'2002), Saudi Arabia, ISBN: 9960-07-187-1, pp 237-251, March 17-18, 2002.
10. "Visualization of Data using Genetic Algorithm", **Sarfraz, M.**, and Raza, S. A., The Proc. International Conference on Imaging Science, Systems, and Technology (CISST'2002), Las Vegas, Nevada, USA, CSREA Press, USA, June 24-27, 2002.
11. "An Algorithm for Font Design", **Sarfraz, M.**, The Proc. International Conference on Imaging Science, Systems, and Technology (CISST'2002), Las Vegas, Nevada, USA, CSREA Press, USA, June 24-27, 2002.
12. "Distance Learning: Major Issues and Challenges, " **Najib A. Kofahi** and **Srinivas**, The Proceedings of the Fourth KFUPM Workshop on Information and

Computer Science: Internet Computing (WICS'2002), Saudi Arabia, ISBN: 9960-07-187-1.

13. "Issues And Considerations For Sorting Arabic Script", Fawaz A. Masoud, Khalil Shihab and **Najib A. Kofahi**, The Proceedings of the Fourth KFUPM Workshop on Information and Computer Science: Internet Computing (WICS'2002), Saudi Arabia, ISBN: 9960-07-187-1.

Computer Engineering Department

1. "An Efficient Test Relaxation Technique for Combinational and Full-Scan Sequential Circuits", **Aiman El-Maleh and Ali Al-Suwaiyan**, 20th IEEE VLSI Test Symposium (VTS), April 2002.
2. "A Hybrid Fault Tolerant Mobile Communication System", **Salman A. Khan and Mostafa Abd-El-Barr**, IEEE Technical Exchange Meeting, Dhahran, Saudi Arabia, April 2002.
3. "On the use of Fuzzy Logic in a Hybrid Scheme for Tolerating Mobile Support Station Failures", **Salman A. Khan and Mostafa Abd-El-Barr**, IEEE Conference on Fuzzy Logic (Fuzz-IEEE), Hawaii, USA, May 2002.
4. "HPTS: Heterogeneous Parallel Tabu Search for VLSI Placement", **Ahmad Al-Yamani, Sadiq M. Sait, and Hassan R. Barada**, IEEE Congress on Evolutionary Computation, Honolulu, Hawaii, USA, May 2002.
5. "Fuzzy Aggregating Functions for Multiobjective VLSI Placement", **Junaid A. Khan and Sadiq M. Sait**, IEEE International Conference on Fuzzy Systems, Honolulu, Hawaii, USA, May 2002.
6. "Fuzzy Biasless Simulated Evolution for Multiobjective VLSI Placement", **Junaid A. Khan, Sadiq M. Sait and Mahmood R. Minhas**, IEEE Congress on Evolutionary Computation, Honolulu, Hawaii, May 2002.
7. "Fuzzy based Multiobjective Multicast Routing Using Tabu Search", **M. Atif Tahir, H. Youssef, A. Almulhem, Sadiq M. Sait**, Proceedings of the 3rd International Conference on Internet Computing 2002, Las Vegas, June 2002.

College of Industrial Management

Management & Marketing Department

1. "The Effects of Instruction on Eliminating Pronominal Copies", **Maghrabi, Aimen A.**, Assembly of Teachers of English Grammar, 12th ATEG Annual Conference, Parkville, Missouri, USA, July 13-14, 2001.
2. "Arabic Speakers' Judgement of Syntactic & Semantic Errors in English", **Maghrabi, Aimen, A.**, Pacific Association of Applied Linguistics, 6th PAAL

Conference, Cheju National University, Cheju Island, Korea, July 30-August 1, 2002.

3. “Obstacles for Saudi Employment in Travel and Tourism Sector of Saudi Arabia”, **Al-Ghamdi, S. and Al-Shehri, A.** Presented at the Fourteenth Annual Meeting of Saudi Economic Association, Riyadh, April 28-30, 2002.

College of Environmental Design

Architecture Department

3. “The Essentials of Energy Code and Making Buildings More Energy Efficient”, **Ellahi M. Ishteeaque**, The First Symposium on Energy Conservation and Management in Buildings at KFUPM, February 5-6, 2002, pp. 197-207.
4. “Sustainable Design and principles of Sustainability”, **Ellahi M. Ishteeaque**, Symposium on Architecture Education in the Kingdom, held at King Faisal University, Dammam, April 8-10, 2002. Proceedings under publication..
5. “Computer Aided Instruction in the Teaching of Architectural History in KFUPM: A review of Current Experience and Future Challenges, **Shaibu, Bala Garba**, Forthcoming in the Proceedings of the Symposium on Architecture Education in the Kingdom, held at King Faisal University, Dammam, April 8-10, 2002. Proceedings under publication..

Architectural Engineering Department

1. “Variations of Thermal Conductivity of Insulation Materials Under Different Operating Temperatures” **Budaiwi, I. M. A. A. Abdou, and M. S. Al-Homoud**, Impact on Envelope Induced Cooling Load”, Proceedings of the 1st Symposium on Energy Conservation & Management in Buildings, pp.159-173, February 5-6, 2002, Dhahran, KSA.
2. “A Systematic Approach for Energy Audit in Mosques” **Abdou, A.A. M. S. Al-Homoud, and I. M. Budaiwi”** Proceedings of the 2nd International Conference on Energy research and Development, April 8-10, Kuwait University, Kuwait.
3. “The Impact of Building Change of Use on Peak HVAC Systems Requirement and Energy Consumption”, **Siddiqui, K.A. and M. S. Al-Homoud** Proceedings of the 1st Symposium on Energy Conservation & Management in Buildings, pp.301-314, February 5-6, 2002, Dhahran, KSA.
4. “Directing Muslim Behavior Towards Conserving Energy” **Al-Mawhwakhi, A., Budaiwi, I.,** Proceedings of the 1st Symposium on Energy Conservation & Management in Buildings, pp.39-48, February 5-6, 2002, Dhahran, KSA. (in Arabic)

Deanship of Library Affairs

1. "Management for Change in Acquisitions in Academic Libraries," **Dr. Moid A. Siddiqui**, A paper presented at the 9th SLA-AGC Annual Conference, Doha, Qatar, 2-4 April 2002.
2. "Managing Change to Enhance Web-based Services in the Arabian Gulf Libraries", **Syed Sajjad Ahmed**, A paper presented at the 9th SLA-AGC Annual Conference, Doha, Qatar, 2-4 April 2002.
3. "The Impact of Information Technology on Job Requirements and Qualifications for Catalogers: an Analysis of Job Advertisements," **Khurshid, Zahiruddin**, A paper presented at the 9th Annual SLA-AGC Conference, Doha, Qatar, 2-4 April 2002.

10. BOOKS PUBLISHED AND CONTRIBUTIONS

Mathematical Sciences Department

1. “On a Class of Incomplete Gamma Functions with Applications”, **M. Aslam Chaudhry** and **Syed M. Zubair**, Chapman & Hall/CRC, Boca Raton London, New York, Washington, D.C., (2001).

11. TECHNICAL REPORTS

College of Engineering

Civil Engineering

1. “Characterization of Key Static and Dynamic Design Issues of Twin-Cell Steel Box-Girders”, **S. A. Alghamdi**, Final Report, KACST – LGP-3-15, February, 2002.
2. “Stripping on Saudi Arabian Roads – Causes, Prediction and Prevention”, **H. I. Al-Abdul Wahhab, I. M. Asi, S. A. Ali, S. Al-Swailmi and Eng. A. Al-Nour**, Final Report, KACST AR-17-039 (Revisions), May, 2002.
3. “Performance Modification of Saudi-Asphalt Binders Using SABIC Polymers”, **H. I. Al-Abdul Wahhab**, Sabic Grant Research Project (final Report), May, 2002.

Chemical Engineering

1. “Characterization of Poly(propylene)/Palm fiber composites”, **Abu-Sharkh, B. F., Kahraman, R., Ali, Sk. A., Hamid, H.**, Fourth Progress Report. KACST Project AR-18-14, March 2002.
2. “Protein Partitioning in Two Phase Aqueous Polymer Solutions”, **Hamad, E. Z., Abu-Sharkh, B. F, Ali, Sk. A.**, Final Report, KACST Project AR-17-56, March, 2002.
3. “Using Nonadditive Interaction to Investigate self-Assembly in homo-polymers, copolymers, polymer solutions and stiff polymers: Molecular Dynamics Simulation, Phase Behavior and Equation of State”, **Abu-Sharkh, B. F. A. Sunaidi**, KFUPM Research Grant CGS/711/01, Second Progress Report, May 2002.
4. “Influence of Molecular Parameters on the Rheology and Miscibility of molten linear low-density polyethylene (LLDPE) in low-density polyethylene (LDPE) and high-density polyethylene (HDPE)”, **Hussein, I., B. F. Abu-Sharkh, K. Mazghani**, KFUPM Research Grant, Second Progress Report, May 2002.

Electrical Engineering Department

1. “Punctured Turbo Codes for Hybrid ARQ Schemes in Rayleigh Fading,” **M.A. Kousa, S. A. Al-Semari and A. B. Adinoyi**, Final Report of FT2000-01, KFUPM, March 2002.

College of Sciences

Mathematical Sciences

1. “Estimation of Distribution Function and Median in Two Phase Sampling”, **Singh, S. and Joarder, A.H.**, Technical Report # 270, (Sept. 2001).
2. “Initial Inverse Problem in Heat Equation with Bessel Operator”, **Khalid Masood, Salim Messaoudi and F.D. Zaman**, Technical Report # 271, (Jan. 2002).
3. “An inversion procedure for the recovery of propagation speed and damping of the medium”, **F.D. Zaman and Khalid Masood**, Technical Report # 272, (Jan. 2002).
4. “The Hinge Method and the Halving Method for sample quartiles’ **Joarder, A.H.**, Technical Report # 273, (Mar. 2002).
5. “The remainder method for sample quartiles of even order”, **Joarder, A.H.**, Technical Report # 274, (Mar. 2002).
6. “On Sum and Product of 2-normal Operators”, **Jibril, Adnan A.S.**, Technical Report # 275, (May 2002).
7. “On Subprojection Operators”, **Jibril, Adnan A.S.**, Technical Report # 276, (May 2002).
8. “The moments of a discrete distribution associated with the principle of inclusion and exclusion”, **Joarder, A.H.**, Technical Report # 277, (May 2002).
9. “On the Behavior of the interface separating fresh and salt groundwater in a heterogeneous coastal” **S. Challal and A. Lyaghfour**, Technical Report # 278, (May 2002).
10. “A filtration problem through a heterogeneous porous medium”, **S. Challal and A. Lyaghfour**, Technical Report # 279, (May 2002).
11. “Generalized macaulay-northcott modules and tor-groups”, **Liu Zhongkui and Javed Ahsan**, Technical Report # 280, (May 2002).

Physics Department

1. “Participation in the 2000 CEC Radon Intercomparison,” **Al-Jarallah, M.I.**, Abu-Jerad, F. and Faza-ur-Rahman, April 2002.

College of Industrial Management

Management & Marketing

1. "Project Management Effectiveness: SABIC Experience", **Al-Ghamdi, S.**
submitted to the Arab Institute for Planning, Kuwait, 2002.

12. SEMINARS OFFERED BY KFUPM FACULTY

1. Speaker : Dr. Al-Mubaiyedh, Usamah
Topic : Recent Discoveries of Thermomechanical and Thermoelastic Instabilities in Taylor-Couette Flow.
Date : February 5, 2002
2. Speaker : Dr. R.S. Al-Naizy
Topic : Advanced Oxidation of Phenolic Compounds
Date : February 12, 2002
3. Speaker : Dr. S. U. Rahman
Topic : Advancements in Electrochemical Engineering: Local Research Needs
Date : March 19, 2002
4. Speaker : Mr. Sharif F. Zaman
Topic : Diffusion and Adsorption of Aromatics in Zeolites by Zero Length Column Technique
Date : April 9, 2002
5. Speaker : Mr. Mamdouh Al-Harthi
Topic : Influence of Moisture Sorption and Filter Content on the Performance of Aluminum Joints Bonded by Aluminum Filled Epoxy
Date : April 16, 2002
6. Speaker : Mr. Tayyab Hameed
Topic : Rheological and MD Simulation Study of the Miscibility of LDPE and m-LLDPE Blends
Date : April 23, 2002
7. Speaker : Mr. Nayef Al-Saifi
Topic : Numerical Analysis of Entropy Generation in Laminar Viscous Fluid Flow in Rectangular Ducts
Date : April 30, 2002
8. Speaker : Mr. Sarfraz H. Abbasi
Topic : Preparation and Characterization of Polypropylene/Palm Fiber Composite
Date : May 5, 2002
9. Speaker : Mr. Abdul-Muttaleb Al-Salman
Topic : Simulation of Melting
Date : May 7, 2002
10. Speaker : Mr. Abdul-Muttaleb Al-Salman
Topic : Simulation of Melting

Date : *May 7, 2002*

11. Speaker : Mr. Mubarak Al-Khater
 Topic : Study of Natural convection from Cylindrical Surfaces Embedded in Porous Media by Limiting diffusion Current Technique
Date : *May 12, 2002*
12. Speaker : Mr. Muayad A. Al-Jishi
 Topic : Dynamic Modeling of Steam Generation/Distribution System
Date : *May 14, 2002*
13. Speaker : Mr. Fahd H. Falqi
 Topic : Equilibrium Studies of Phosphate Removal on Activated Alumina
Date : *May 19, 2002*

Civil Engineering Department

1. Speaker: Dr. N. A. Al-Shayea
 Topic: Skills for Time Management (Counseling & Advising Center)
 Date: 29.01.2002
2. Speaker: Engr. Bassam Al-Tawabini
 Topic: Treatment of Water Contaminated with Phthalate Ester by Photo-Fenton Process (PhD Dissertation Defence)
 Date: 05.02.2002
3. Speaker: Dr. N. A. Al-Shayea
 Topic: Plastic-Damage Model for 3-D Stress-Strain Behavior of Soils
 Date: 12.02.2002
4. Speaker: Engr. Mohammad Shazali
 Topic: A Purview of Desalination as a concrete Repair Method
 Date: 12.03.2002
5. Speaker: Dr. N. A. Al-Shayea
 Topic: Visualization in Scientific and Engineering Research (Research Institute)
 Date: 15.04.2002
6. Speaker: Dr. Shamshad Ahmad
 Topic: Diagnosis of Corrosion Damage in Reinforced Concrete Structures Prior to Rehabilitation
 Date: 16.04.2002

Electrical Engineering Department

1. Speaker: Dr. A.U.H. Sheikh
 Topic : Future Trends in Wireless

Communication

Date : February 14, 2002

2. Speaker: Dr. Sharif Iqbal Sheikh
Topic : Designing RF/Microwave

Passive Circuits Using HFSS

Date : April 4, 2002

3. Speaker: Dr. M.A. Abido
Topic : Multiobjective Evolutionary

Algorithm for Power System

Optimization Problems

Date : January 1, 2002

Mechanical Engineering Department

1. Speaker: Prof. Sheikh A. Akbar
Topic : Ceramic Gas Sensors for Industrial Monitoring:
Opportunities and Challenges
Date : Feb. 03, 2002
2. Speaker: Prof. Sheikh A. Akbar
Topic : A Multidisciplinary Curriculum Based on Team-Teaching
And Industrial Partnership
Date : Feb. 05, 2002
3. Speaker: Dr. Ibrahim Dincer
Topic : Exergetic Aspects of Thermal Systems
Date : March 12, 2002
4. Speaker: Mr. Georges Hoeterickx
Topic : Thermal Storage Systems – Why Thermal Storage, Different
Systems and Sizing
Date : March 26, 2002
5. Speaker: Dr. Necar Merah
Topic : Safe-Life and Fail Safe Design
Date : April 02, 2002
6. Speaker: Dr. A.R.N. Shuaib
Topic : Effect of Initial Tube-Tubesheet Clearance on the Strain
Hardening of Over Expanded Heat Exchanger Tubes
Date : April 09, 2002
7. Speaker: Dr. Abdulmalik A., Aljinaidi Alghamdi
Topic : Smart Structures
Date : April 16, 2002
8. Speaker: Dr. Abdelghafour Souahi

- Topic : Aero-Elastic Problems in Aerospace, Mechanical and Civil Engineering
Date : April 23, 2002
9. Speaker: Dr. Zuhair Gasem
Topic : Effect of Al₂O₃ Particulate-Reinforcement on the Corrosion Behaviour of Powder Metallurgy Aluminum Metal matrix Composites
Date : April 30, 2002
10. Speaker: Ahmad Jamal
Topic : Conjugate Free Convection Heat Transfer in Vertical Eccentric Annuli
Date : April 30, 2002
11. Speaker: Dr. Ameen H. El-Sinawi
Topic : Two Dimensional Vibration Suppression in Machining Using a Kalman Estimator-Based Feed-Forward Active Control Strategy
Date : May 07, 2002
12. Speaker: Dr. H.M. Badr
Topic : Turbulent natural Convection Flow in Parallel and Converging-Plate Vertical Channels
Date : May 12, 2002
13. Speaker: Naser Al-Aqeeli
Topic : Oxidation/Carburization Behavior of Ni-&-Fe Based Alloys
Date : May 14, 2002
14. Speaker: J. Jaanoschek
Topic : Modern Analytical Instruments for Thermal Analysis And Thermophysical Properties Characterization
Date : May 19, 2002
15. Speaker: Dr. Abdulmalik A., Aljinaidi Alghamdi
Topic : Collapsible Impact Energy Absorbers
Date : May 21, 2002
16. Speaker: Taofeek Ayinde
Topic : Wake Flow with Varying Separation Points
Date : May 21, 2002

Chemistry Department

1. Speaker Dr. A. J. Pasl
Title Is your student or child gifted?

- Date 16th September 2001
2. Speaker Dr M. Farhat Ali
Title Coprocessing waste plastics with petroleum residues into liquid chemical feedstock as a tertiary recycling
Date 23rd October 2001
 3. Speaker Dr. Bassam El Ali
Title Palladium-Catalyzed Hydrocarboxylation of alkenes: Selective Synthesis of branched and linear carboxylic acids
Date 27th November 2001
 4. Speaker Mr. Saeed Al-Jaroudi
Title Applications of NMR to Organometallic chemistry
Date 4th December 2001
 5. Speaker Prof. Ghassan Oweimreen
Title On the nature of the Smectic A-to-Nematic transition in 8CB
and
8CB-10CB mixtures
Date 5th March 2002
 6. Speaker Dr. M. Waqar Ashraf
Title Applications of supported liquid membrane technology for the Selective removal of toxic trace metals from industrial waste effluents
Date 12th March 2002
 7. Speaker Prof. S. Asrof Ali
Title Synthesis and solution properties of some pH-responsive ionic Polymers
Date 23rd April 2002
 8. Speaker Dr. Ian Forristal
Title Enhancing the learning experience: Use of web CT and related e-learning tools
Date 30th April 2002
 9. Speaker Dr. Abdulrahman A. Al-Arfaj
Title Overview of the activities of the Center for Applied Physical Sciences (CAPS) and the Central Analytical Laboratory (CAL)
Date 14th May 2002
 10. Speaker Dr. Zaki Seddigi
Title Diffusion aspects of cations and adsorbates inside zeolite L
using
MD simulation
Date 21st May 2002

Earth Sciences Department

1. Speaker : Dr. Gabor Korvin
 Title : Inversion of bulk rock properties into pore shape spectra
 Date : March 11, 2002

2. Speaker : Dr. Mustafa Al-Hariri
 Title : Use of the GIS (Geographic Information System) in determining relationship between geology, structures and mineral prospects, Southern part of the Arabian Shield, Saudi Arabia
 Date : April 29, 2002

3. Speaker : Dr. Zulfiqar Ahmed
 Title : Introducing an Adekite from the Arabian Shield
 Date : May 13, 2002

Physics Department

Speaker : Dr. Bashar Issa
 Physics Department,
 United Arab Emirates University, UAE.
 Topic : Magnetic Resonance Imaging (Mri) Quantification Of Fluid Flow
 (Applications To Porous Media & Blood Vessels)
 Place : Physics Department
 Date : 27 January 2002

Speaker : Dr. M. S. Kariapper
 Topic : Introduction to Item Response Theory (Irt) and Its Application to
 Phys101 and Phys102 Exams.
 Place : Physics Department
 Date : 03 February 2002

Speaker : Mr. Mohamed Khodja
 Topic : Sonoluminescence : A Star in the Jar
 Place : Physics Department
 Date : 10 February 2002

Speaker : Dr. A. Al-Karmi
 Topic : Introduction to Diagnostic Ultrasound.
 Place : Physics Department
 Date : 03 March 2002

Speaker : Dr. Anan M. Al-Karmi
 Topic : Introduction to Diagnostic Ultrasound
 Place : Physics Department
 Date : 03 March 2002

Speaker	Institute of Theoretical Physics, Utrecht, The Netherlands.
Topic	Fundamentals on Bose Einstein Condensation in Dilute Gases.
Place	Physics Department
Date	10 March 2002
Speaker	Professor Hardouin Duparc Laboratoire des Solides Irradies (X-SESI) Ecole Polytechnique, Paris, France
Topic	Born-Raman Controversy
Place	Physics Department
Date	24 March 2002
Speaker	Dr. M.I. Al-Jarallah
Topic	The Developments in the Use of Ionizing Radiation in the Kingdom During the Past Two Decades
Place	Private Education School, Al-Khobar
Date	27 March 2002
Speaker	Mr. Jaweed Yazdani Information Technology Center (ITC), KFUPM
Topic	Frontpage Overview and Faculty Homepage Publishing
Place	Physics Department
Date	31 March 2002
Speaker	Dr. Saeed Mohammed Alamoudi
Topic	Real-Time Dynamics of Bose Einstein Condensates (KFUPM Research Project)
Place	Physics Department
Date	06 April 2002
Speaker	Dr. M.H. Al-Shwehdi Electrical Engineering Department, KFUPM
Topic	Power System Harmonics
Place	Physics Department
Date	07 April 2002
Speaker	Professor Fazal Mahomed Centre for Differential Equations, Continuum Mechanics and Applications, School of Comp. & Applied Mathematics University of the Witwatersrand, Johannesburg, South Africa
Topic	Symmetry, Conservation Laws and Their Applications
Place	Physics Department
Date	14 April 2002
Speaker	Professor Riazuddin Director of National Center for Physics, Quaid-e-Azam University, Islamabad & Adjunct Professor, Department of Physics, KFUPM

Topic	Origin of Mass
Place	Physics Department
Date	16 April 2002
Speaker	Dr. Abdulaziz Aljalal
Topic	Laser Remote Measurement of Ultrasound
Place	Physics Department
Date	21 April 2002
Speaker	Dottore Achille Nucita Dipartimento di Fisica, Universita' degli Studi di Lecce, Lecce, Italia.
Topic	Gravitational Lensing: Its Use For Detecting Dark Matter
Place	Physics Department
Date	23 April 2002
Speaker	Dr. M.A. Morsy
Topic	Chemistry and Computers: Theory and Applications.
Place	Physics department
Date	28 April 2002
Speaker	Dr. Al-Busaidy Physics Department, Sultan Qaboos University, Oman
Topic	AES and MEIS Study of Energetically Deposited Metal Films.
Place	Physics Department
Date	30 April 2002
Speaker	Prof. Claude Monty Directeur de Recherche, CNRS / IMP, BP 5 Odeillo, 66125-Cedex FONT-ROMEUE, France
Topic	Nanomaterials, Synthesis, Characterization and Applications
Place	Physics Department
Date	12 May 2002
Speaker	Mr. Al-Hasan, A Abdul- Wahhab (St # 942548) Undergraduate Student, Physics Department, KFUPM.
Topic	Introduction to Superstring Theory
Place	Physics Department
Date	19 May 2002
Speaker	Mr. Al-Zahrani, A. Muhammad (St # 972460) Undergraduate Student, Physics Department, KFUPM.
Topic	Dark Matter Overview: Candidates and Detection
Place	Physics Department
Date	19 May 2002

Information & Computer Science

Speaker : Raimi Rufai, RA/ICS Department.

Title : Structure-Base Software Component Retrieval

Date : 02.02.2002

Speaker : Khalid Abdalla El-Badawi, RA/ICS Department.

Title : High-Performance Communication Over A Gigabit Ethernet Network

Date : 16.04.2002

Speaker : Saliu, Moshood Omolade, RA/ICS Department.

Title : Adaptive Fuzzy Logic Based Framework for Software Development Effort Prediction

Date : 07.05.2002

Speaker : Irman Hermadi RA/ICS Department.

Title : Genetic Algorithms Based Test Data Generator

Date : 21.05.2002

Computer Engineering Department

1. **Speaker:** Dr. Abdul-Waheed
Date : February 5, 2002
Title : Measurement-Based Performance Evaluation of Proxy Caches
2. **Speaker:** Mr. A. Salam-Alada
Date : March 5, 2002
Title : Measurement and Analysis of WebServer Performance
3. **Speaker:** Mr. Mohammad Faheemuddin
Date : March 12, 2002
Title : Parallelization techniques for Non-Deterministic Algorithms
4. **Speaker:** Mr. Syed Sanaullah
Date : April 2, 2002
Title : Measurement-based Study of Memory Performance of NAS Benchmarks
5. **Speaker:** Mr. Garba Isa Ya'u
Date : May 14, 2002
Title : A Measurement Based Study of Memory Performance of Streaming Media Servers
6. **Speaker:** Mr. Uthman Al-Saiari
Date : April 9, 2002
Title : Design of Digital Circuits Using Evolutionary Algorithms

7. Speaker: Mr. Yahya E. Osais
Date : April 23, 2002
Title : Static Test Set Compaction for Combinational Circuits Using Test Relaxation.
8. Speaker: Mr. B. Sarif
Date : April 30, 2002
Title : Evolutionary Design of Digital Circuit
9. Speaker: Mr. Y. Garba
Date : May 14, 2002
Title : A Measurement Based Study of Memory Performance of Streaming Media Servers.
10. Speaker: Mr. Muhammad Wassim Raad
Date : May 28, 2002
Place : Saudi Chamber of Commerce & Industry, Dammam.
Title : Smart Cards and E-Business

Earth Sciences Department

1. Speaker : Prof. Fazal Mahomed (Univ of Witwatersrand, Johannesburg, South Africa)
Title : A catalogue of symmetries
Date : March 18, 2002
2. Speaker : Dr. Charles Kerans (AAPG Distinguished Lecturer, U. of Texas, Austin)
Title : Evolving technologies and opportunities in carbonates
Date : March 27, 2002 (Jointly with RI Ctr. Petr. Mins.)
3. Speaker : Dr. Edward A. Clerke (Saudi Aramco)
Title : Analysis and application of mercury capillary pressure data
Date : May 5, 2002 (Jointly with RI Ctr. Petr. Mins. and Dept. Petr. Eng.)
4. Speaker : Dr. Aldo L. Vesnavar (Saudi Aramco)
Title : Slicing the Earth by seismic tomography
Date : May 6, 2002

Mathematical Sciences Department

1. "On certain operator equations on operator algebras", **A.B. Thaheem**, Second Pure Mathematics Conference, Islamabad, Pakistan, 8-9 August 2001.

2. "Estimation of the scaled covariance matrix of a multivariate t -model using a known information", **A.H. Joarder** and **S. Singh**, *Metrika*, 54, No.1, 53-58.
3. "Long time behavior of solutions to systems of heat propagation with second sound", **S.A. Messaoudi**, Math Colloquium, Department of Mathematics and Statistics, Konstanz University, Konstanz, Germany, November 9, 2001.
4. "Local existence and blowup in nonlinear thermo-elasticity with second sound", **S.A. Messaoudi**, Seminar of PDE's, Konstanz University, Konstanz, Germany, November 5, 2001.
5. "Conference Organized by Vijnana Parishad and Indian Society of Information Theory and Applications", **A.H. Siddiqi**, New Delhi, India, 22-25 February 2002.

Lectures/Seminars by Math Faculty:

1.	Speaker Title Date	: : :	Dr. Salim Messaoudi On Heat Propagation and Thermoelasticity by Second Sound Sunday, February 10, 2002
2.	Speaker Title Date	: : :	Dr. M. Aslam Chaudhry Formulation Properties and Applications of the Gamma-Zeta Functions Sunday, February 10, 2002
3.	Speaker Title Date	: : :	Dr. Gary Miller Symmetries of Differential Equations and Conservation Laws Sunday 10, March 2002
4.	Speaker Title Date	: : :	Dr. Mohamed El-Gebeily A Weak Formulation of certain Operators Associated with Singular Differential Expressions Sunday, March 17, 2002
5.	Speaker Title Date	: : :	Dr. Abul Hasan Siddiqi Current Trends in Industrial Mathematics Sunday, March 24, 2002
6.	Speaker Title Date	: : :	Dr. Asghar Qadir Why Complex Mathematics is Simpler Sunday 31 March 2002
7.	Speaker Title Date	: : :	Dr. Hassan Azad Non-Euclidean Geometry, Differential Geometry and Canonical Metrics Sunday April 7, 2002
8.	Speaker Title Date	: : :	Mr. Ziad Nabih Abou-Rafeh (Math 490) The Simplicity of any Alternating Group A_n for $n \geq 5$. A proof and an application. Sunday 28 April 2002
9.	Speaker Title Date	: : :	Mr. Husain Ali Al-Nas (Math 490) A Comparison between the Classical Proof of the Stone-Weierstrass Theorem and a Proof Based on the Solution Heat Equation Sunday 28 April 2002
10.	Speaker Title Date	: : :	Mr. Jad Hassan Al-Darwish (Math 490) Some Commutative Theorem in Rings Tuesday 30 April 2002

11.	Speaker Title Date	: : :	Mr. M. Al-Khadrawi (Math 490) Counting Orbits Tuesday 30 April 2002
12.	Speaker Title Date	: : :	Mr. Al-Madah Husain Salah Mahdi (Math 490) Fixed Point Iterations Used to Solve Nonlinear Systems Tuesday 30 April 2002
13.	Speaker Title Date	: : :	Mr. Mohammed Mustafa Kafini (Math 599) Functional Relations, Using Fractional Calculus Tuesday 30 April 2002
14.	Speaker Title Date	: : :	Mr. Mohammed M. Al-Shahrani (Math 599) Methods for Solving the Hankel Matrix Approximation Problem Sunday 5 May 2002
15.	Speaker Title Date	: : :	Dr. A.B. Thaheem Generalized Derivations on Semiprime Rings and Applications to von Neumann Algebras Sunday May 12, 2002
16.	Speaker Title Date	: : :	Mr. Al-Garni, Said Ali (Math 599) Periodicity and Stability of Linear Volterra Difference systems Monday 13 May 2002

17.	Speaker Title Date	: : :	Mr. Abujiya Ramat Mu'azu (Math 599) Some Aspects of Statistical Quality Control Using Ranked Set Sampling Tuesday 14 May 2002
18.	Speaker Title Date	: : :	Mr. Jamal H. Al-Ismail (Math 599) The Canonical Form of Self-Adjoint Operators with an Application to Differential Operators. Sunday 26 May 2002

13. SEMINARS OFFERED BY OUTSIDE SPEAKERS IN THE UNIVERSITY

Civil Engineering Department

1. Speaker: Dr. Yung-Tse Hung
 Topic: Biological Treatment of Petroleum Refinery Wastewater
 Date: 12.03.2002

2. Speaker: Dr. Khaled Bubshait, (CIM, KFUPM)
 Topic: Successfully Using Business Process Reengineering to Achieve
 Total Quality Management
 Date: 02.04.2002

3. Speaker: Dr. Rachid Hankour (Geocomp Corp., Ma., USA)
 Topic: Automated Field Data Acquisition and Monitoring System
 Date: 21.05.2002

Mechanical Engineering Department

1. 17-21 June, 2002 Invited Lecturer, International Summer School on Porous
Media in Energy and Environmental Engineering, Evora,
Portugal.

2. 12-14 June, 2002 Invited Speaker, The First International Conference on
Sustainable Energy Technologies, Porto, Portugal.

3. 22-24 May, 2002 Invited Lecturer, Workshop on Industrial Refrigeration
Systems, Izmir, Turkey.

4. 26-29 March, 2002 Invited Lecturer, Workshop on Renewable Energy
Technologies and Sustainable Development, Amman,
Jordan.

Chemistry Department

1. Speaker Dr. T. Hoepner, ICBM, University of Oldenburg, Germany
 Title Chemical aspects of seawater desalination
 Date 16th October 2001

2. Speaker Mr. J. D. Brady, Crown Anderson Corporation, USA
 Title Air pollution control systems for petroleum and petrochemical
 facilities
 Date 4th November 2001

3. Speaker Dr. A. Aksoy, CAPS, RI, KFUPM
 Title Applications of neutron activation analysis (NAA) for catalyst

- analysis
Date 29th January 2002
4. Speaker Dr M. Achoi, Department of Marketing & Management,
Title Enhancing self-efficacy and personality
Date 12th February 2002
5. Speaker Prof. H. Schmidbaur, Technical University of Munich, Germany
Title Supramolecular chemistry of gold: a new area of fascinating
molecular and multidimensional structures
Date 24th March 2002
6. Speaker Prof. H. Schmidbaur, Technical University of Munich, Germany
Title New results in bioinorganic chemistry of magnesium and zinc
Date 26th March 2002
7. Speaker Dr. David Willock, University of Wales, England
Title Computer stimulation in catalysis
Date 31st March 2002
8. Speaker Dr. S. Aliban, Director, Counselling & Advising Center, KFUPM
Title An overview of the services provided by the Counselling &
Advising Center
Date 2nd April 2002
9. Speaker Mr. J. Yazadani, ITC, KFUPM
Title IT services at KFUPM
Date 9th April 2002
10. Speaker Dr. M. Al-Saleh, Director, Center for Refining & Petrochemicals,
KFUPM
Title Capabilities and activities at the Center for Refining and
Petrochemicals
Date 19th May 2002

Mathematics Department

1.	Speaker	:	Dr. Abraham Abraham (<i>Finance & Economics Department</i>)
	Title	:	<i>College of Industrial Management</i>
	Date	:	Mathematical Models of Finance
		:	Sunday, February 3, 2002
2.	Speaker	:	Dr. Mohammad Sharief Deshmukh
	Title	:	<i>King Saud University, Riyadh</i>
	Date	:	Moebius Group of a Riemannian Manifold
		:	Sunday, February 3, 2002
3.	Speaker	:	Professor Fazal Mahomed

	Title Date	:	<i>Centre for Differential Equations, Continuum Mechanics and Applications School of Comp. And Applied Mathematics, Univ. of the Witwatersrand, Johannesburg, South Africa.</i> Ordinary Differential Equations: Symmetry Sunday 21 April 2002
4.	Speaker Title Date	:	Dr. Said Masloub <i>University of Tebessa, Algeria</i> Strong Solution to an Evolution Problem with Integral Conditions Sunday April 14, 2002
5.	Speaker Title Date	:	Achille Nucita <i>Dipartimento di Fisica, Universita degli Studi di Lecce, Lecce, Italia</i> Sources of Gravitational Waves Sunday 28 April 2002

Department of Management and Marketing

- Speaker : Dr. Salem Al-Ghamdi
Title : Conflict Management: Issues and Implications
Date : February 12, 2002
Location : Annual Meeting of Sales Agents of Al-Rabai Corporation, Riyadh.

Computer Engineering

- Speaker: Mr. Tarek Ayass and Mr. Philippe Trautman
>From Sun Microsystems, Dubai.
Date : March 26, 2002
Title : Sun Network Vision
- Speaker: Mr. Philippe Trautman
>From Sun Microsystems, Dubai.
Date : March 26, 2002
Title : Sun Open Networking Environment (SunOne) in Education
- Speaker: Dr. Walter Dey
Senior Consulting Engineer, Cisco
Date : April 17, 2002
Title : Storage Area Networking and 10 Gigabit Ethernet