

RESEARCH NEWSLETTER

A RESEARCH COMMITTEE PUBLICATION

July, 2003

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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.

Dr. Mohammad Al-Ohali
Chairman, Research Committee

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

1. Project No. CHE/ISOMER/255 Investigator: Dr. Sulaiman Al-Khattaf (Che)
Dr. Adnan J. Al-Amer (Che)
Mr. Kamal Mahgoub (Che)

TITLE: Catalytic Isomerization of META/Ortho-Xylenes to Paraxylene in a Fluidized Bed Reactor

Abstract:

This proposal is prepared to investigate the formation of paraxylene in a fluidized bed reactor by the isomerization of the low-value metaxylene and orthoxylene. Paraxylene is one of the important aromatic feedstocks used in the petrochemical industries. It is used primarily in the synthesis of polyester fibers, resins and films. Unlike the commonly used fixed bed reactors, a fluidized bed has the advantage of uniform coke deposition on the catalyst. In addition, a short contact time strategy can be used in the fluidized bed to prevent the formed paraxylene from further transformation to undesired products such as other xylenes and tri-methyl-benzene isomers. The complete mixing between the catalyst particles and the reactants molecules can improve the reaction immensely.

The work will involve the use of different catalysts with different porosity such as Y-zeolite, mordenite and ZSM-5 for the isomerization reactions. These catalysts will be characterized by a range of analytical techniques and their catalytic performance evaluated in a riser simulator unit. Experiments will be conducted to find out the optimum conditions for paraxylene formation. Variable pre-coking strategies will be considered to deactivate the unwanted external zeolite active sites. The study will be completed within 24 months.

2. Project No. ICS/GEOMETRIC/256 **Author: Dr. M. Sarfraz (ICS)**

TITLE: **Geometric Modeling: Techniques, Applications, Systems and Tools (Book Editing Project)**

Abstract:

Computer Aided techniques, Applications, Systems and tools for Geometric Modeling are extremely useful in a number of academic and industrial settings. Specifically, Computer Aided Geometric Modeling (CAGM) plays a significant role in the construction of designing and manufacturing of various objects. In addition to its critical importance in the traditional fields of automobile and aircraft manufacturing, shipbuilding, and general product design, more recently, the CAGM methods have also proven to be indispensable in a variety of modern industries, including computer vision, robotics, medical imaging, visualization, and even media.

This book aims to provide a valuable source, which focuses on interdisciplinary methods and affiliate research in the area. It aims to provide the user community with a variety of Geometric Modeling techniques, Applications, systems and tools necessary for various real life problems in the areas such as Font Design, Medical Visualization, Scientific Data Visualization, Archaeology, Toon Rendering, Virtual Reality, Body Simulation, etc. It also aims to collect and disseminate

information in various disciplines including Curve and Surface Fitting, Geometric Algorithms, Scientific Visualization, Shape Abstraction and Modeling, Intelligent CAD Systems, Computational Geometry, Solid Modeling, Shape Analysis and Description, and other Industrial Applications. The major goal of this book is to stimulate views and provide a source where researchers and practitioners can find the latest developments in the field of Geometric Modeling.

The book is useful for researchers, computer scientists, practicing engineers, and many others who seek state of the art techniques, applications, systems and tools for Geometric Modeling. It is also useful for undergraduate senior students as well as graduate students in the areas of Computer Science and Engineering.

3. Project No. MS/t-CLASS/258

Investigator: Dr. S. Kabbaj (Math)

TITLE: **t -Class Semigroups of Integral Domains**

Abstract:

The t -class semigroup of an integral domain R , denoted $St(R)$, is the (multiplicative Abelian) semigroup of nonzero fractional t -ideals modulo its subsemigroup of nonzero principal ideals; that is, the semigroup of the isomorphy classes of the nonzero (integral) t -ideals of R with the operation induced by multiplication. This research project aims at developing a broad study of ring-theoretic properties which [reciprocally] reflect in the Cluord or Boolean properties of the t -class semigroup. [New] notions and contexts that suits best t -multiplication will be [introduced and] studied in an attempt to parallel analogous developments already known for the class semigroup $S(R)$.

2000 Mathematics Subject Classification: 13C20, 13F05, 13F30, 13A15, 13B22, 13G05.

Keywords: Class semigroup, Cluord regular domain, Class group, t -ideal, t -invertibility, PVMD, Krull-type domain, Prifer domain, Noetherian domain, stable domain.

4. Project No. ME/CORROSION ENG./257 Author: Dr. Zaki Ahmad (ME)

TITLE: **Geometric Modeling: Techniques, Applications, Systems and Tools (Bookwriting Project)**

Abstract:

The aim of the book is to provide a comprehensive coverage of Principles of Corrosion Engineering for Engineering students at senior and graduate level. The first four chapters of the book, corrosion thermodynamics, corrosion mechanism and corrosion kinetics are the foundation chapters of the book and written in a style that would enable the engineering students to understand the fundamentals concepts in depth. The multidisciplinary background material has been simplified and incorporated in the chapter to minimize special preparation for engineers. The chapter on materials and environment introduces various forms of corrosion like galvanic corrosion, pitting corrosion, crevice corrosion, stress corrosion cracking and corrosion fatigue. Each form has a definition, descriptive mechanism, examples, preventive methods and typical case histories to enable the students to understand the practical significance of corrosion failures.

The chapter on cathodic protection is devoted to an understanding of the scientific background and electrochemical theory on which the foundation of cathodic protection is laid. It describes the details of installation of anode, cathodic protection measurements, current requirement test, field survey and design calculation. This chapter is profusely illustrated by solved design examples and illustration. It is likely to have a special appeal for engineers. Chapter seven is devoted to coatings and is subdivided in four parts, fundamentals, surface preparation, coatings and their applications. There are chapter son inhibition, atmospheric corrosion, boilers and desalination plants with a unique approach and relevance to the corrosion problems in the Kingdom.

This book is particularly oriented for Engineers, but it would also be found suitable by scientific and practicing corrosion engineers. It is the first book on the subject, which contains step by step solution of typical problems, keywords, definitions, and conceptual questions at the end of each chapter. A CD showing selected figures made by Flash and solutions to the problems would accompany the book

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-Sunaïdi (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. Habib Zughbi Mr. Zahid Khokhar	Numerical and Experimental Investigations of Mixing in Fluid Jet Agitated Tanks: Effects of Geometry and Flow Asymmetry (CHE/MIXING/253)
Chemical Engineering	Dr. Sulaiman Al-Khattaf Dr. Adnan J. Al-Amer Mr. Kamal Mahgoub	Catalytic Isomerization of META/Ortho-Xylenes to Paraxylene in a Fluidized Bed Reactor (CHE/ISOMER/255)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Civil Engineering	Dr. Naser A. Al-Shayea	Elastoplastic-Damage Model

		for 3-D Stress-Strain Behavior of Soil (CE/SOIL/239)
Electrical Engineering	Dr. Husain Al-Duwaish (EE)	Advanced Multivariable Control of a Gas Plant (EE/ADV.CONTROL/231)
Electrical Engineering	Dr. Abdelmalek Zidouri (EE) Dr. Muhammad Sarfraz (ICS)	Automatic Text Recognition: A Need in Arabization (EE/AUTO-TEXT/232)
Electrical Engineering	Dr. Mohammad A. Khan (EE) Dr. Umer Al-Suwailem (EE) Dr. Mohamed Mohandes (EE)	Trellis-Coded Residual Vector Quantization based Subband Image Coding (EE/TRELLIS/236)
Electrical Engineering	Dr. Husain A. Al-Jamid (EE)	Optimization of the Method of Lines for the Analysis of Photonic Bandgap Structures (EE/BANDGAP/245)
Electrical Engineering	Dr. Abu Hamed Abdur-Rahim Dr. Samir Al-Baiyat (EE)	Robust Shunt Connected FACTS Devices for Power System Damping Improvements (EE/ROBUST/252)
Mechanical Engineering	Dr. Mehmet Sunar Dr. Fouad Al-Sunni Dr. S.A. Al-Kaabi	Substructural Control of Fuzzy Flexible Systems ME/FUZZY/197
Mechanical Engineering	Dr. Bassem El-Bedoor Mr. Lahouri Ghouti	An Experimental Study on Blade Vibration Measurements in Turbo-machinery (ME/BLADE-VIBRATION/215)
Mechanical Engineering	Dr. Ahmed S. Al-Garni (ME) Dr. Saad Ahmed (ME) Dr. Ahmet Z. Sahin (ME)	An Experimental Investigation of a Leading Edge Rotating Cylinder for Aircraft Operation at High Incidence (ME/CYLINDER/237)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Mechanical Engineering	Dr. Syed M. Zubair Mr. Jameelur Rahman Khan Mr. Mohammad Yaqub	The Impact of Risk-Based Fouling on the Performance of Cooling Towers, Evaporative Condensers, and Evaporative Fluid Coolers (ME/RISK FOULING/ 230)

Mechanical Engineering	Dr. Hassan M. Badr Dr. M.A. Habib Dr. S.A.M. Said Dr. R. Ben Mansour	Turbulent Natural Convec-tion Flow in Parallel and Converging-Plate Vertical Channels (ME/TURBULENT/246)
Mechanical Engineering	Dr. Ameen El-Sinawi	Two-Dimensional Vibra-tion Suppression in Machining Using a Kalman-Estimator-Based Feed-Forward Active Controller (ME/KALMAN/247)
Mechanical Engineering	Dr. Ibrahim Dincer (ME)	Porous Media in Modern Technologies, Energy, Electronics, Biomedical and Environmental Engineering (Bookwriting Project) (ME/POROUS-MEDIA /249)
Mechanical Engineering	Dr. Zaki Ahmad (ME)	Principles of Corrosion Engineering and Corrosion Control (Bookwriting Project) (ME/CORROSION ENG. /258)
College of Computer Science & Engineering		
ICS Department	Dr. M. Sarfraz	Geometric Modeling: Techniques, Applications, Systems and Tools (Bookwriting Project) (ICS/GEOMETRIC/256)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
Systems Engineering	Dr. Umar Al-Turki Dr. Shokri Z. Selim Dr. Abdulbasit Andijani	On Stochastic Single Mac-hine Early-Tardy Scheduling SE/SCHEDULE/191
Accounting & MIS	Dr. Haider Madani Dr. Reginald S.O. Wallace	Corporate Disclosure and Reporting Practices in the Gulf Cooperative Council Countries: A Cross-National Comparative Investigation (CIM/DISCLOSE/248)

College of Sciences

Chemistry	Dr. Wolfgang Forner	Nonlinear Charge Carriers in Polyparaphenylene CY/NONLINEAR/216
Chemistry	Dr. M. Farhat Ali Dr. Bassam El-Ali	Handbook of Industrial Chemistry: Organic Chemicals (Bookwriting Project) (CY/IND.CHEM/250)
Chemistry	Dr. Salah M. Sultan	General Chemistry (Book-writing Project) (CY/GEN.CHEM/251)
Mathematical Sciences	Dr. Ibrahim Rahimov Dr. Hassen Muttalak	Investigation of a Random Sum of Indicators with Applications in Branching Stochastic Processes (MS/STOCHASTIC/254)
Mathematical Sciences	Dr. Rajai S. Alassar Dr. Mohamed El-Gebeily Dr. Faisal A. Fairag	On the Effect of Sphericity on Forced Convection (MS/SPHERICITY/225)
Mathematical Sciences	Dr. Abul Hassan Siddiqi Dr. Khaled M. Furati	Fast Wavelet Algorithms for Simulating Safing Sensor (MS/SAFING-SENSOR/ 234)
College / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
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)

Mathematical Sciences	Dr. S. Kabbaj	t-Class Semigroups of Integral Domains (MS/T-CLASS/257)
Physics	Dr. Azzedine Zerguine Dr. Maamar Bettayeb	Mixed l_2 - l_p Norm Adaptive Algorithms for System Identification: Application to Echo Cancellation (PH/ECHO/193)
Physics	Dr. 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 of Environmental Design	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

S. No.	Name of Faculty & Department	Title of the Research Proposal
1.	Dr. Sadiq M. Sait (COE) Dr. A.S. Abdul Waheed (COE) Mr. Mahmood R. Minhas (ICS)	Parallel Iterative Heuristics for Performance-Driven Low-Power VLSI Standard Cell Placement
2	Dr. Mohamed A. Antar (ME) Dr. Maged El-Shaarawi (ME)	Entropy Generation Around a Solid/Liquid Sphere in a Gas Stream
3	Dr. Raafat S. Alnaizy (Che) Dr. Nadhir A. Al-Baghli (Che)	Photooxidation of MTBE in the Presence of Hydrogen Peroxide
4.	Dr. Abdulaziz Al-Shuaibi (Math) Dr. Mohammad Iqbal (Math)	On the Inversion of some integral transforms with the use of orthogonal polynomials and regularization methods
5.	Dr. M.A. El-Gebeily (Math) Dr. Khaled M. Furati (Math)	Approximating Singular ODEs by Nearby Theoretical and Computational Issues
6.	Dr. Mohamed Ben Daya (SE.) Dr. Mohammed Darwish (SE) Dr. Kadir Ertogral (SE)	Integrated Manufacturer-Retailer Supply Chain Models
7.	Dr. Usamah A. Al-Mubaiyedh (Chemical Engineering)	The Stability and Dynamics of Non-Isothermal Taylor-Coutte Flow: Influence of Viscous Heating, Buoyancy and Fluid Thermal Sensitivity
8.	Dr. Abdeslem Lyaghfour (Mathematics)	On the Dam Problem with Two Fluids
9.	Dr. Sleem-ur-Rahman (Che) Dr. S.M.J. Zaidi (Che Engg) Dr. N.A. Al-Baghli (Che Engg)	Development of a Novel CO-Filter for Petroleum Base on Board PEM Fuel Cell System
10.	Dr. Mohammad Nahid Siddiqui (Chemistry)	Catalytic Decomposition of Gaseous Hydrocarbons for the Production of CO-Free Hydrogen for Fuel Cells (Release Time Research Proposal)
11.	Dr. Zaki Ahmad (ME) Mr. Abdul Aleem, B.J. (ME)	Exploring the Corrosion Behavior of New Generation Scandium Reinforced Aluminum Alloys for Service Performance
12	Dr. Sadiq Sohail (Mgt & Mkt) Dr. Nassar Shaikh (Acct & MIS)	An Analysis of Service Quality in Internet Banking: A Saudi Arabian Perspective
13	Dr. Muhammad E.S. Elrabaa (Computer Engineering)	Development of Digital Circuit Techniques for Clock Recovery and Data Re-Timing for High Speed Non-Return-to-Zero Source-Synchronous Serial Data Communications
14	Prof. M.H. Baluch (CE) Dr. A.H. Al-Gadhib Dr. M.K. Rahman	Influence of Environmental Variables and Mix Design on Moisture Transport in Concrete
15	Dr. Fouad M. Al-Sunni Dr. Samir Al-Amer (SE)	Identification of a class of nonlinear systems
16	Dr. Salah M. Sultan (Chemistry)	Sequential Injection Analysis Technique for Automated Titrations (Release time) (proposal recd. on 26.1.2003)
17	Dr. Bilal Chanane (Mathematics)	Computational Spectral Theory (Release time proposal)
18	Dr. Mohammad Sadiq Sait & Dr. Mostafa Abd-El-Barr (COE)	Iterative Heuristics for the Design of Combinational Logic Circuits

19	Dr. Omar Abdullah Zaid (Accounting & MIS)	Accounting Foundations and Principles: The Islamic Perspective”
20	Dr. Ahmad A. Abu-Musa Dr. Jassim S. Al-Rumaihi Dr. Muhammad A. Al-Khaldi (Accounting & MIS)	Evaluating the Security Controls of Computerized Accounting Information Systems in Saudi Arabian Banks
21	Dr. Selim Messaoudi (Math) Mr. Said Berrimi (Math)	On the long time behavior of some viscoelastic problems
22	Dr. Mohammad Abido (EE) Dr. Youssef Abdel Magid (EE) Dr. Jamil Bakhawain (EE)	Power Systems Stability Enhancement Using Unified Power Flow Controllers
23	Dr. Zulfiqar Ahmed (Geol) Dr. Abdulwahab Abokhodair	Regional Geology of Al-Quwayiyah Area of the Eastern Arabian Shield
24.	Dr. S.M. Javaid Zaidi (Che) Dr. S.U. Rahman (Che) Dr. Ibnelwaleed Hussein (Che)	Development of Highly Conductive Composite Membranes for Medium Temperature PEM Fuel Cell
25.	Dr. Basel Abu-Sharkh (Che) Dr. Sk. Asrof Ali (Chem) Dr. Ibnelwaleed Hussein (Che) Dr. Hasan A. Al-Mualem (Chem)	Influence of Hydrophobe Architecture on Self-Assembly, Rheology, and Interfacial Properties of Amphiphilic Polyelectrolyte, Polyampholyte and Neutral Co-Polymers.
26.	Dr. H. Bahlouli (Phys) Dr. A. Alsunaïdi (Phys) Dr. S. Al-Amoudi (Phys)	Transport Properties of Nano-Structure Devices
27.	Dr. Abdullah Alsunaïdi (Phys) Dr. Basel Abusharkh (Che)	Self-Assembly in Confined Semiflexible Copolymers

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

S. No.	Name of Faculty & Department	Title of the Research Proposal
1	Dr. Ellahi Ishteeaque (Architecture)	The Native-Architecture of Saudi Arabia
2.	Dr. Ahmad Al-Matouq (IAS)	Bilingual: Arabic Dictionaries: Nature, Importance and Method of Development
3.	Dr. Ibraheem Nasser (Phys) Dr. Abdullah Alsunaidi (Phys) Mr. Faud Enaya (Phys)	Writing a Book in Arabic: Intermediate Statistical Thermodynamics

6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2002/2003

College/ Department	Name of Faculty	Title of Sabbatical Proposal	Host Institution
College of Sciences Mathematics Department	Dr. Suliman Al- Homidan	Solving the Hankel Matrix Approximation Problem via Interior-Point Methods of Semi-Definite Programming	University of Waterloo, Canada.
College of Sciences Earth Sciences Department	Dr. Muhammad Makkawi	Forecasting the Impact of Water Demand on Groundwater Aquifers: Stochastic Model Development and Application	Colorado School of Mines, USA and Saudi Aramco.
College of Sciences Physics Department	Dr. Saleh I.A. Al- Quraishi	Level Density Measurements	University of Ohio, USA.

7. SABIC AND FAST TRACK PROPOSALS RECEIVED DURING NOVEMBER 2002 FOR FUNDING

S. No.	Name of Faculty	Department	Title of the Proposal
SAB-2003-1	Dr. Abdelwahab Kharab Dr. Mustafa Bouchama Dr. Ahmed Yamani	Mathematics Civil Engg. Electrical Engg.	Penetration of a Rigid Body into a Soil Medium
SAB/2003-2	Dr. F.D. Zaman Dr. Khalid Masood	Mathematics Dept.	Seismic Inversion for Damped Wave Equation
SAB/2003-3	Dr. Hassen Muttalak Dr. Walid Al-Sabah	Mathematics Dept.	CUSUM and EWMGA Control Charts Using Ranked Set Sampling
SAB/2003-4	Dr. Ahmet Z. Sahin Dr. Ramazan Kahraman	Mechanical Engg.	Exergy Analysis of Turbulent Viscous Flow Through Pipes
SAB/2003-5	Dr. Muhammad Shafiq Dr. Fouad Al-Sunni Mr. Sayyid Anas Vaqar	Systems Engineering	Adaptive Tracking Based on FIR Filters
SAB/2003-6	Dr. Ramazan Kahraman Dr. Ahmet Z. Sahin	Chemical Engg. & Mech. Eng.	Synergistic Effect of Moisture Sorption and the Filler Content on the Mechanical Performance of Metal Joints Bonded by Aluminum Filled Epoxy (Old Project, reviewed and approved in 2001)
SAB/2002-7	Dr. Ahmed Z. Al-Garni Dr. Mehmet Sunar	Mechanical Engineering	Optimal Control for Aerospace Plane Using Closed-Form and Numerical Solutions
SAB/2002-8	Dr. Mohammed Sadiq Sohail Dr. Obaid Saad Al-Abdali	Management & Marketing	Incidence and Value of Logistics Outsourcing: A Saudi Arabian Perspective
SAB/2002-9	Dr. Onur Toker (SE) Dr. Mehmet Sunar (ME)	Systems Engineering	A Substructural Control Technique by H-Infinity Methods for Nonlinear and Fuzzy Structures
SAB/2002-10	Dr. Salah Al-Dulaijan (CE) Dr. Mesfer Al-Zahrani (CE) Dr. M. Maslehuddin (RI)	Civil Engg.	Effect of Sulfate Concentration and Cation Type of Sulfate Attack in Plain and Blended Cements
SAB/2002-11	Dr. Muaammer Kalyon	Mechanical Engineering	Continuous Proximate Time-Optimal Track-To-Track Seek Control of HDD Read/Write Heads
SAB/2002-12	Dr. A.B. Thaheem Dr. M.S. Samman	Mathematics	On Centralizers of Semiprime Rings
SAB/2002-13	Dr. Saed Spuzic Dr. Khalid Al-Dheyman Dr. Meyassar Al-Haddad Mr. M. Abdul Samad	Mechanical Engineering	Contribution to Developing Wear Resistant Materials via Rapid Testing
SAB/2002-14	Dr. Anvarhusain Isab Dr. Waqar Ashraf	Chemistry	^{13}C , ^{31}P and ^{77}Se NMR Studies of the Redox and Exchange Reactions of Gold(I) Drugs with Bis(alkylthio) selenides of Biological Thiols
SAB/2002-15	Dr. Muhammad Al-Zahrani Engr. Mohammad Essa Engr. Omar Al-Attas	Civil Engineering	Industrial Pollutant removal using locally produced activated amended sand

SAB/ 2002-16	Dr. Muhammad Al-Zahrani Engr. Junaid Laiq Syed	Civil Engineering	Risk and Reliability Analysis of Water Distribution System
SAB/ 2002-17	Dr. Nasser-eddine Tatar Dr. Mohamed Ridha Alaimia	Mathematics	Asymptotic Behavior of Solutions to Problems with Non-local Terms
SAB/ 2002-18	Dr. Mohammad Hassanain Dr. Ismail M. Budaiwi Dr. Adel A. Abdou	Architectural Engg. Dept.	Assessment of Life Safety Systems in Indoor Environmental Quality in Schools in Saudi Arabia
SAB/ 2002-19	Dr. Abdalla M. Abulkibash Dr. Salah M. Sultan	Chemistry	Differential Electrolytic Potentiometry Combined with Flow Injection as a Potential Detector for Complexed Reactions
SAB/ 2002-20	Dr. Azzedine Zerguine Dr. Mohamed Deriche	Electrical Engineering	Development of a New Blind Equalization Algorithm using Minimum- Disturbance Technique with Applications to Communication Channels
SAB/ 2002-21	Dr. Mohammad Al-Qahtani Dr. Laui Al-Hadhrami	Mechanical Engineering	Flow and Heat Transfer Prediction of Smooth and Pin-fin Narrow Rectangular Channels (AR=10) oriented at 120° from the Direction of Rotation
SAB/ 2002-22	Dr. M.A. Abido Dr. Y.L. Abdel-Magid	Electrical Engineering	Robust Load Frequency Controllers for Multiarea Interconnected Power Systems
SAB/ 2002-23	Dr. Abdullah Zaid	Accounting & MIS	Accounting Foundations: The Islamic Perspective
SAB/ 2002-24	Dr. Abdullah Zaid	Accounting & MIS	Accounting Principles: The Islamic Perspective
SAB/ 2002-25	Dr. Ibrahim M. Al-Jabri Dr. Haider M. Fraihat	Accounting & MIS	Assessing skills and knowledge of IT Professionals in Saudi Arabia
SAB/ 2002-26	Dr. Mohamed Adnan Landolsi	Electrical Engineering	Optimized Design and DSP Implementation of CDMA PN Code Synchronization Systems
SAB/ 2002-27	Dr. Zakariya Al-Hamouz Dr. Ahmad Masoud	Electrical Engineering	Online, Blind Identification of Induction Motor Defects based on the Spectral Contents of its Stator Current
SAB/ 2002-28	Dr. Khaled Mezghani Mr. Mohammed Abdul Samad	Mechanical Engineering	Effect of Mold temperature on Mechanical Properties of Poly(ethylene terephthalate)
SAB/ 2002-29	Dr. Maung Than Htun Dr. Ali El-Rayyes	Chemistry	Photochemical Studies on 8-Amino-1- Naphthol-3, 6-Disulfonate by Fluorescence Spectroscopy
SAB/ 2002-30	Dr. Muhammad Waqar Ashraf Dr. Muhammad Al-Malack	Chemistry Res. Inst.	Supported Liquid Membrane Technology for the Separation of Organic Contaminants from Industrial Waste Effluents
SAB/ 2002-31	Dr. Abdulwaheed M. Abdul- Sattar	Computer Engineering	A Testbed for Integrated, Content-Aware, Application Layer Level Networking

	Dr. Muhammad F. Khan		
SAB/ 2002-32	Dr. Mostafa Abd-El-Barr, Mr. Louai Al-Awami Mr. Ahmad Khayyat Mr. Rami A. Al-Ghanmi	Computer Engineering	Analysis of Heuristic Techniques for Synthesis of MVL Functions Using Current-Mode CMOS Circuits
SAB/ 2002-33	Dr. N. Merah Dr. Zafarullah Khan	Mechanical Engg.	Temperature and Frequency Effects on Fatigue Crack Propagation Rate in CPVC and HDPE Pipes
SAB/ 2002-34	Dr. Ameen H. El-Sinawi Dr. Abdelaziz Bazoune	Mechanical Engineering	Experimental Verification of a Kalman Estimator-based Technique Developed for Estimating and Monitoring the vibration of a turbine blade mounted on a flexible disk using two-dimensional measurements of hub (bearing) vibration
SAB/ 2002-35	Dr. Amro Al-Qutub Dr. Ibrahim Allam	Mechanical Engineering	Dry Wear Properties of Particulate Matrix Composite
SAB/ 2002-36	Dr. Nassar M. Shaikh Dr. Ibrahim Al-Jabri	Accounting & MIS	The Impact of Internet Addiction on Academic Performance: An Exploratory Study on KFUPM
SAB/ 2002-37	Dr. M. Deriche Dr. M. Mohandes Dr. Jamil Bakhashwain	Electrical Engineering	A New Algorithm for Person Identification Using the Iris
SAB/ 2002-38	Dr. Mohammad Antar Dr. Syed M. Zubair Mr. Irfan Hussaini	Mechanical Engineering	The Effect of Superheating and Subcooling on the Total Heat Exchanger Area for a Feed Water Heater in a Power Plant
SAB/ 2002-39	Dr. Khaled Al-Dheyman Dr. Zafarullah Khan Dr. Faleh Al-Sulaiman Dr. Iyad Al-Zaharnah	Mechanical Engineering	A Study of the Low-Velocity Impact Resistance of E-Glass Polyester Composite Materials

8. PUBLICATIONS IN REFEREED JOURNALS REPORTED AFTER JANUARY, 2003

College of Engineering

Chemical Engineering

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2. “Simulation of a Combined Isomerization Reactor & Pressure Swing Adsorption Unit”, **Abdulahdi Al-Juhani and Kevin F. Loughlin**, 9(3), 2003 in press.
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2. "Reliability based Topological Optimization of Computer Networks - Part II: Iterative Techniques", **Mostafa Abd-El-Barr, Sadiq M. Sait, Abdulaziz S. Al-Mulhem, Ahmer Zakir**, Proceedings of 10th IEEE Technical Exchange Meeting (TEM), KFUPM, Dhahran, Saudi Arabia, March 2003.
3. "GATS: A Novel Hybrid Algorithm for Multiobjective Cell Placement in VLSI circuit design", **Sadiq M. Sait and Mahmood R. Minhas**, Proceedings of 10th IEEE Technical Exchange Meeting (TEM), KFUPM, Dhahran, Saudi Arabia, March 2003.
4. "Analysis of KFUPM Web Traffic Using Proxy Access Logs," **Abdul Waheed**, Proceedings of the IEEE 10th Annual Technical Exchange Meeting (TEM), KFUPM, Dhahran, Saudi Arabia, March 2003.
5. "A Measurement Based Memory Performance Evaluation of Streaming Media Servers, **Garba I. Yau and Abdul Waheed**, Proceeding of the IEEE 10th Annual Technical Exchange Meeting (TEM), KFUPM, Dhahran, Saudi Arabia, March 2003.
6. "Trends in Internet Usage & its effects in Saudi Arabia", **Sadiq M. Sait, Syed Hussain Ali, Khalid M. Al-Tawil and Syed Sanaullah**, ICASE World Conference on Science & Technology Education, Penang Malaysia, April 2003, pp 692-700.
7. "Perceptions about eLearning in Saudi Arabia", **Syed Hussain Ali, Sadiq M. Sait, and Khalid M. Al-Tawil**, ICASE World Conference on Science & Technology Education, Penang, Malaysia, April 2003, pp 393-399.
8. "Parallel Tabu Search in a Heterogeneous Environment", **Ahmad Al-Yamani, Sadiq M. Sait, Hassan Barada, and Habib Youssef**, Proceedings of 17th International Parallel & Distributed Processing Symposium, April 2003.

9. "A 3D Vision-Based Man-Machine Interface For Hand-Controlled Telerobot", **Mayez Al-Mouhamed, Onur Toker, and Abdul-Khalik Al-Harthy**, IFAC International Conference on Intelligent Control Systems and Signal Processing, C-sponsored by IEEE, IFSA, and EVONET, Faro, Portugal, April 8-11, 2003, pp. 586-591.
10. "Area-Time Optimal Adder with Relative Placement Generator", **Aamir A. Farooqui, Vojin G. Oklobdzija, Sadiq M. Sait**, IEEE International Symposium on Circuits and Systems, May 2003, Bangkok.
11. "Memory Access Characteristics of Network Infrastructure Applications," **Abdul-Waheed**, The 2003 International Conference on Software Engineering Research and Practice (SERP'03), June 23-26, 2003, Las Vegas, Nevada, USA.
12. "Case-Based Reasoning to Enhance Diagnosis and CSP Model Debugging in Interoperability Testing: ADIOP", **Mohammed H. Sqalli, and Eugene C. Freuder**, IASTED International Conference on Intelligent Systems & Control (ISC 2003), June 25-27, 2003, Salzburg, Austria.
13. "Modeling and Formal Verification of IMPP," **Sohel Khan and Abdul Waheed**, Proceedings of the 2003 International Conference on Software Engineering Research and Practice (SERP'03), June 23-26, 2003, Las Vegas, Nevada, USA.
14. "An Efficient Test Relaxation Technique for Synchronous Sequential Circuits," **Aiman El-Maleh and Khaled Al-Utiabi**, Proceeding of the 21th IEEE VLSI Test Symposium (VTS), 2003, pp. 179-185
15. "Simulated Evolution Algorithm for Multi-objective VLSI Netlist BI-Partitioning" **Sadiq Sait, Aiman El-Maleh and Raslan Al-Abaji**, Proceeding of the IEEE International Symposium on Circuits and Systems (ISCAS), 2003, pp. V-457 – V-460.
16. "An Efficient Test Relaxation Technique for Synchronous Sequential Circuits," **Aiman El-Maleh and Khalid Al-Utaibi**, Proceeding of the International Symposium on Circuits and Systems (ISCAS), 2003, pp. V-545 – V-548.
17. "General Iterative Heuristics for VLSI Multi-objective Partitioning", **Sadiq Sait, Aiman El-Maleh and Raslan Al-Abaji**, Proceedings of the IEEE International Symposium on Circuits and Systems (ISCAS), 2003, pp. V-497 – V-500.

Systems Engineering Department

1. "On The FFT of 1-Bit Dither-Quantized Signals" by **L. Cheded and S. Akhtar**, IEEE 8th Technical Exchange Meeting, KFUPM, March 22-24, 2003
2. "On The Exact Recovery of the FFT of Noisy Signals Using A Non-Subtractively Dither-Quantized Input Channel" by **L. Cheded**, International Symposium On Signal Processing and Its Applications (ISSPA '03), July 2-4, 2003, Paris, France
3. "Maximum Capture Analysis for Petrol Stations Location" by **A. Shaikh, M. Ndiaye and N. Ruhhal**, Euro/Informs Joint International Meeting, July 6-10, 2003, Istanbul, Turkey
4. "A New Dispatching Rule for Stochastic and Dynamic Job Scheduling" by **U. M. Al-Turki, A. Andijani and A. Shaikh**, SCSC 2003, Summer Simulation Multi-Conference, Montreal, Canada, Manuscript #S174.R1
5. "Adaptive Inverse Control Using Multi-Layer Perception Neural Network" by **M. Shafiq and M. Moinuddin**, IASTED International Conference (MIC), February 10-13, 2003
6. "Internal Model Control Structure Using Adaptive Inverse Control Strategy", by **M. Shafiq and S. H. Riyaz**, IEEE International Conference (ICCA'03), June 9-12, 2003
7. "NLMS Based Adaptive Control of Stable Plants" by **M. Shafiq**, IEEE Technical Exchange Meeting, KFUPM, April 22-23, 2003
8. "Design of a Multi-Thread Distributed Telerobotic Framework" by **M. Al-Mouhamed, O. Toker and A. Iqbal**, 10th IEEE International Conference on Electronics, Circuits and Systems, 2003, (under review)
9. "Evaluation of a Multi-Thread Distributed Telerobotic Framework" by **M. Al-Mouhamed, O. Toker and A. Iqbal**, 10th IEEE International Conference on Electronics, Circuits and Systems, 2003, (under review)
10. "A 3D Vision-Based Man-Machine Interface for Hand-Controlled Telerobot," by **M. Al-Mouhamed, O. Toker and A. Al-Harthy**, IFAC International Conference on Intelligent Control Systems and Signal Processing (Co-Sponsored by IEEE, IFSA, and EVONET), Faro, Portugal, April 8-11, 2003, pp. 586-591
11. "Design and Implementation of a Java-Based Distributed Control System Over The Internet: A Tele-Laboratory System" by **O. Toker and F. Al-Sunni**, accepted for publication in the proceedings of the Internet Computing 2003 Conference to be held in Las Vegas, U.S.A., June 2003
12. "H_{inf} Strong Stabilization: A Linear Fractional Transformation Approach" by **A. Al-Saif**, 2nd International Conference on Signals, Systems, Decision and Information Technology, March 26-28, 2003, Sousse, Tunisia.
13. "Maximum Capture Analysis for Petrol Stations Location" by **S. Arifusalam, M Ndiaye and N. Ruhhal**, EURO/INFORMS Joint International Meeting, Turkey, 2003.
14. "A New Dispatching Rule for Stochastic and Dynamic Job Scheduling" by **U. M. Al-Turki, A. A. Andijani and S. Arifusalam**, Summer Computer Simulation Conference, Montreal Canada, July, 2003.

15. *"Evaluation and Selection Scheme for Funding Research Projects" by U. M. Al-Turki, S. O. Duffuaa, A. Kayyal and H. Al-Ghamdi, Third Forum On Engineering Education: Building Partnership With Government, Industry And Society, Sharjah, UAE, October, 2003.*
16. "Single Machine Scheduling with a Common Due Window and Random Machine Breakdowns" by **M. E. Seliman and U. M. Al-Turki**, The First Multidisciplinary International Conference on Scheduling, Theory and Application (MISTA), Nottingham, UK, August 2003.

College of Industrial Management

Department of Management & Marketing

1. "Malaysia Airlines (MAS)- Facing Challenges in the New Millennium, **Sohail, Sadiq. M**, 2003 Hawaii International Conference on Business, The Third Annual Conference, June 18 - 21, 2003, Honolulu, Hawaii
2. "An Analysis Of Student Attitudes And Preferences To Career In Sales: Implications For Marketing Educators" **Sohail, Sadiq. M and Bradmore, D** 2003 Hawaii International Conference on Business, The Third Annual Conference, June 18 - 21, 2003, Honolulu, Hawaii
3. 'Service Quality in Higher Education: A Saudi Arabian Case Study', **Sohail, Sadiq. M** and Shaikh, Nassar, 8th International Conference on ISO 9000 & TQM, 'Going for Gold' 23-25 April 2003, Montreal, Canada.
4. "Curry Cuisine: Perceptions of Indian Restaurants in Malaysia", **Josiam, B., Sohail, Sadiq. M and Monteiro, P**, First Asia-Pacific CHRIE (APac-CHRIE) Conference, Hospitality, Foodservice & Tourism Research and Education: The Asian Waves 21-23 May 2003, Seoul, Korea.
5. "Quest for Excellence: The Case of the College of Industrial Management, King Fahd University of Petroleum & Minerals", **Shaikh, Nassar M.**, Conference of the College of Business Administration of Arab Universities, Halab, Syria, 11-13 March, 2003.

College of Environmental Design

Architectural Engineering Department

1. “The Impact of Filter Placement in Air-Conditioning Systems on the Behavior of Indoor Contaminant Concentration”, **Ismail M. Budaiwi**, 6th Saudi Engineering Conference, KFUPM, Dhahran, Volume 1, pp. 145-153, 2002.
2. “Evaluation of Indoor Air Quality Status in Selected Commercial Buildings in Saudi Arabia: Role of the HVAC Systems”, **Raza A. Khan, Ismail Budaiwi** 6th Saudi Engineering Conference, KFUPM, Dhahran, Volume 1, pp. 129-144, 2002.
3. “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)

10. BOOKS PUBLISHED AND CONTRIBUTIONS

Electrical Engineering Department

1. "Tutorials on Mathematics to MATLAB," **Mohammad Nuruzzaman**, 1st Book Library, Bloomington, Indiana, USA, March 20, 2003.

Aerospace Engineering Department

1. Environmental Safety, Efficiency, Versatility and Economic Aspects of Hydrogen Energy Utilization", A. Sahin and **A. Z. Al-Garni**, Invited paper for publication on a book by Renewable Energy, June 2003 (1424H), U.K.

Chemistry Department

1. Dr. Salah M. Sultan, Professor of the Chemistry Department published a book "General Chemistry", in Arabic under the book writing project funded by KFUPM CY/GEN.CHEM/251.

Mathematical Sciences Department

1. "Commutative Ring Theory and Applications" **M. Fontana, S. Kabbaj and S. Wiegand**, Lecture Notes in Pure and Applied Mathematics", Vol. 231, Marcel Dekker, New York, 2003 (494 pages) (ISBN: 0-8247-0855-5)

Information & Computer Science Department

1. "Internet Computing", Guest Editors: **M. Sarfraz, K. Salah, and M. Ahmed**, Special Issue of Journal Information Sciences, Vol. 150, No. 3-4, (April 2003).
2. "Preface", **Sarfraz, M., Salah, K., and Ahmed, M.**, International Journal of Information Sciences, Elsevier Science Inc., Vol. 150(3-4), 119-122, (2003).

Architectural Engineering Department

1. "Thermal Conductivity Measurements of Common Insulating Materials under Different Operating Conditions", **Budaiwi, I., Abdou, A., and Al-Homoud, M.**, Technical Report, Final, # FT/2000-10, Project Funded by the Saudi Basic Industries Corporation (*SABIC*).

11. TECHNICAL REPORTS

College of Sciences

Mathematical Sciences

1. “Gradient Catastrophe in Heat Propagation with Second Sound”, **Salim A. Messaoudi** and **Aicha S. Al-Shehri**, Technical Report # 284, (January 2003).
2. “A Wave Equation with Fractional damping”, **Nasser-eddine Tatar**, Technical Report # 285, (January, 2003).
3. “Blow up for the Wave Equation with a Nonlinear Dissipation of Cubic Type in R^n ”, **Nasser-eddine Tatar**, Technical Report # 286, (January, 2003).
4. “On a Problem Arising in Isothermal Viscoelasticity”, **Nasser-eddine Tatar**, Technical Report # 288, (February, 2003).
5. “Focusing Surfaces”, **Hassan Azad**, **Abdallah Laradji** and **Asghar Qadir**, Technical Report # 289, (February 2003).
6. “New Formulations of the ankle Matrix Approximation Problem”, **M.M. Alshahrani**, **S. Al-Homidan**, Technical Report # 290, (April 2003).
7. “A Generalization of Fermats Last Theorem”, **A. Laradji**, Technical Report # 291, (April 2003).
8. “A Stochastic Version of Fan’s Best Approximation Theorem”, **Abdul Rahim Khan**, **A.B. Thaheem** and **Nawab Hussain**, Technical Report # 292, (June 2003).
9. “Sample Variance and the First Order Differences”, **Anwar H. Joarder**, Technical Report # 293, (April 2003).
10. “A Characterization of the Sterling Number of the Second Kind with the Exponential Function”, **G.K. Beg**, Technical Report # 294, (April 2003).
11. “Statistical Regularization and Optimal Filtering for Numerical Solutions of Ill-posed Problems”, **M. Iqbal**, Technical Report # 295, (May, 2003).
12. “Global Existence of Weak Solutions in Nonlinear Thermoelasticity with Second Sound”, **Salim A. Messaoudi**, Technical Report # 296, (May 2003).
13. “A Comparison and Contrast of Some Methods for Sample Quartiles”, **A.H. Joarder** and **R.M. Latif**, Technical Report # 297, (May 2003).
14. “On Certain Finite Semigroups of Order-Decreasing Transformations I”, **A. Laradji** and **A. Umar**, Technical Report # 298, (May 2003).
15. “A Regularity Result for a Heterogeneous Evolution Dam Problem”, **A. Lyaghfour**, Technical Report # 299, (June 2003).

16. “Shear Velocity Inversion Procedure for Love Waves”, **F.D. Zaman** and **Khalid Masood**, Technical Report # 300, (June 2003).
17. “Initial Inverse Problem in a Two-Layer Heat Conduction Model”, **Khalid Masood** and **F.D. Zaman**, Technical Report # 301, (June 2003).
18. “Recovery and Regularization of the Initial Temperature Distribution in a Cylinder”, **Khalid Masood**, **S. Messaoudi** and **F.D. Zaman** ,Technical Report # 302, (June 2003)
19. “Investigation of the Initial Inverse Problem in the Heat Equation”, **Khalid Masood** and **F.D. Zaman**”, Technical Report # 303, (2003).
20. “Procedural Approach to Sketching One-Dimensional Graphs Using Mathcad”, **Yushau, B.** and **Farhat**, Technical Report # 304, (June 2003).

College of Computer Science & Engineering

Systems Engineering Department

1. “ $(GF(p^m))$ Valued Pseudorandom Sequence and a time invariant mapping $(GF(p^m);n)$ onto $MPRS (GF(p); mn)$ ” by **O. Toker** and **E. Boukas**, Dept. of Mechanical Engineering Technical Report, Polytechnique de Montreal, Les cahiers du Gerad, G2003-38, June 2003, Montreal, Canada

12. LECTURES AND SEMINARS GIVEN BY UNIVERSITY FACULTY

Chemical Engineering Department

1. Speaker: Mr. Mamdouh Al-Harathi
Topic : Influence of Moisture Sorption and Filler Content on the Performance of Aluminium Joints Bonded by Aluminum Filled Epoxy
Date : January 12, 2003
2. Speaker: Mr. Adam Mousa
Topic : Miscibility of LLDPE in HDPEP: Rheological and Molecular Simulation Investigation
Date : January 14, 2003
3. Speaker: Dr. Sulaiman Al-Khattaf
Topic : Catalytic Isomerization of Meta/Ortho-Xylenes to Para-Xylene in a Fluidized Bed Reactor
Date : February 25, 2003
4. Speaker: Mr. Mohammad Mozumder
Topic : Rheology, Interfacial Property and Characterization of Novel Hydrophobically Modified Polyelectrolytes
Date : May 6, 2003
5. Speaker: Mr. Rehan A. Chaudhry
Topic : Investigation of Degradation of NBR & HNBR Rubbers by Light Scattering and Rheological Techniques
Date : May 11, 2003
6. Speaker: Mr. Shaikh Abdur Razzak
Topic : Simulation of Flow in a Partially Packed Vessel
Date : May 20, 2003
7. Speaker: Mr. Iqtedar Ahmed
Topic : Effects of Geometry and Flow Asymmetry on Mixing in a Fluid Jet Agitated Tank
Date : May 27, 2003
8. Speaker: Mr. Salam K. Al-Shammari
Topic : Entropy Generation Analysis in Laminar Viscous Fluid Flow in a Circular Type
Date : May 28, 2003
9. Speaker: Mr. Mohammad Iqbal
Topic : A Study to Improve SABIC Polymers for the Performance Modification of Saudi Asphalt
Date : June 6, 2003
10. Speaker: Mr. Nabeel Abu-Ghander
Topic : Wastewater Treatment Using Integrated Electrolytic-Electrodialytic Process

- Date : June 14, 2003
11. Speaker: Mr. Mubarak Al_Khater
 Topic : Study of Natural Convection from Cylindrical Surfaces Embedded in Porous Media by LDCT
 Date : June 15, 2003

Mechanical Engineering

1. Speaker: Dr. Necar Merah
 Topic : Life Assessment in Safe-Life and Fail-Safe Approaches
 Date : January 07, 2003
2. Speaker: Dr. Shahriar Eftekharzadeh
 Topic : Feasibility of Seawater Cooling Towers for Petrochemical Development in Saudi Arabia
 Date : March 04, 2003
3. Speaker: Dr. Khalid A. Al-Dheyman
 Topic : Composite Materials for Aircraft Structures
 Date : March 11, 2003
4. Speaker: Dr. A.F.M. Arif
 Topic : Nonlinear Finite Element Analysis in Mechanical Engineering
 Date : March 18, 2003
5. Speaker: Mr. Hussain Y. Al-Fadhli & Dr. Zuhair M. Gasem
 Topic : Performance Evaluation of Inconel-625 Powder Coating Thermally Sprayed by High Velocity Oxyfuel (HVOF)
 Date : April 08, 2003
6. Speaker: Mr. Ghulam Murshed Arshed
 Topic : Developing Transient Free and Opposing Jets in Relation to Gas Assisted Laser Evaporative Heat-ing
 Date : April 29, 2003
7. Speaker: Mr. Sohail Anwar
 Topic : Natural Convection Flow in Parallel Plate Vertical Channels
 Date : May 2, 2003
8. Speaker: Dr. B.S. Ylbaz
 Topic : Three-Dimensional Laser Induced Heating Including Impinging Gas Jet Effects
 Date : May 06, 2003
9. Speaker: Dr. Ian Forristal
 Topic : Sci-Finder : A Powerful Tool for Multi-Disciplinary Research
 Date : May 13, 2003
10. Speaker: Mr. Mohammad Faheem
 Topic : A Study of Tensile and Microhardness Properties of LLDPE/LDPE Blends

- Date : May 13, 2003
11. Speaker: Dr. Sead Spuzic
Topic : Multimedia Transfer of Knowledge Related to Processing of Engineering Materials
Date : May 20, 2003
12. Speaker: Mr. Adel M. Al-Nasser
Topic : Optimization of a packaged air conditioning unit performance using an experimentally validated CFD model
Date : May 27, 2003
13. Speaker: Mr. Fahad Al-Sulaiman
Topic : Test Facility Development for a Small Centrifugal Compressor
Date : June 03, 2003
14. Speaker: Dr. M. A. Antar
Topic : Entropy Generation Around a Solid/Liquid Sphere
Date : June 17, 2003.

Aerospace Engineering Department

1. Speaker : Dr. A. Z. Al-Garni
Topic : Aerospace Science and Engineering
Venue : Royal Saudi Air Force
Date : February 2003 (Muharram1424H)
2. Speaker: Mr. Othman S. Al-Saiari, G.A.
Date : April 09, 2002
Title : Design of Digital Circuits Using Evolutionary Algorithms
3. Speaker: Mr. Yahya E. Osais, G.A.
Date : April 23, 2002
Title : Static Test Set Compaction for Combinational Circuits Using Test Relaxation

Information & Computer Science Department

1. Speaker: Mohammed Riyazuddin RA, ICS Department
 Title : Tabu search and its application to data visualization using splines
 Date : 19 - 05 - 2003
2. Speaker: Sohail Khan - RA, ICS Department
 Title : Software Routing on General Purpose Processors

Date : 02 - 06 - 2003

Computer Engineering Department

1. Speaker: Dr. Abdul-Waheed M. Abdul-Sattar
 Topic : Analysis of KFUPM Web Traffic Using Proxy Access Logs
 Date : March 2003
2. Speaker: Mr. Wassim Raad
 Topic : Smart Card
 Date : March 31, 2003
3. Speaker: Dr. Abdul-Waheed M. Abdul-Sattar
 Topic : Memory Access Characteristics of Network Infrastructure Applications
 Date : April 7, 2003
4. Speaker: Mr. Garba I Ya'u
 Topic : A Measurement Based Memory Performance Evaluation of High Throughput Servers
 Date : April 14, 2003
5. Speaker: Dr. Atef Jawad Al-Najjar
 Title : Digital Image Processing
 Date : April 20, 2003
6. Speaker: Dr. Sadiq M. Sait
 Topic : Parallelization of Iterative Heuristics for Performance Driven Low-Power VLSI Standard Cell Placement.
 Date : June 15, 2003

Systems Engineering Department

1. **SPEAKER : DR. MOHAMMAD DARWISH (ASST. PROF.)**
TITLE : "TWO-STAGE IMPERFECT PRODUCTION SYSTEMS WITH INSPECTION ERROR IN PREVENTION MAINTENANCE"
DATE : MARCH 11, 2003
2. **SPEAKER : DR. NASSER RUHHAL (ASST. PROF.)**
TITLE : "HIERARCHICAL CONTROL CHART FOR MULTIPLE STREAM PROCESSING WITH CROSS CO-RELATED MEASUREMENTS"
DATE : MARCH 03, 2003

3. **SPEAKER : DR. OMER DEMIREL (ASST. PROF.)**
TITLE : “PROCESSING DISCRIMINATION AND MODEL
VALIDATION BY USING ZERO CROSSINGS”
DATE : APRIL 01, 2003
4. **SPEAKER : DR. MOHAMMAD SHAFIQ (ASST. PROF.)**
TITLE : “FIR FILTER BASED ADAPTIVE TRACKING”
DATE : APRIL 15, 2003

Chemistry Department

1. Speaker : Prof. M. Sakhawat Hussain
Title : Chemistry via Internet
Date : February 25, 2003
2. Speaker : Prof. Wolfgang Förner
Title : Davydov Solitons in Proteins
Date : March 4, 2003
3. Speaker : Dr. Maung Than Htun
Title : Photodynamics of Daunorubicin and Doxorubicin
Date : April 8, 2003
4. Speaker : Dr. Zaki Shakir Seddigi
Title : Enhancing Chemical Education
Date : April 22, 2003
5. Speaker : Profs. Anvarhusain Isab and Mohammed
I. M. Wazeer
Title : Multinuclear NMR Study of the Interactions of Some Sulfur
containing Biologically Important Ligands with Cd^{2+} and Hg^{2+} Ions
Date : May 13, 2003
6. Speaker : Prof. Abdul Muttaleb Jaber
Title : Studies on Phenol Permeation Through Supported Liquid
Membranes Containing Functionalized Polyorgano-siloxanes
Date : June 3, 2003
7. Speaker : Dr. Zaki Shakir Seddigi
Title : Using Problem Based Learning in Mathematics: A Gray Matter
Date : June 3, 2003
8. Speaker : Dr. Zaki Shakir Seddigi
Title : Who Are Chemists and Why Choose Chemistry? Matter
Date : June 4, 2003
9. Speaker : Dr. Zaki Shakir Seddigi
Title : Molecular Modeling in Catalysis
Date :

Earth Sciences Department

1. Speaker : Dr. Gabor Korvin

- | | | | |
|--|-------|---|--|
| | Title | : | Multiple scattering of waves in fractal aggregates |
| | Date | : | April 06, 2003 (Maths. Dept.) |
- 2.
- | | | |
|---------|---|--|
| Speaker | : | Dr. Gabor Korvin |
| Title | : | What every (geophysics) student should know about logarithms |
| Date | : | Sept. 24, 2003 (Maths. Education Seminar) |

Mathematics Department

- 1.
- | | | |
|-----------|------------------|---|
| Speaker : | Dr. A.H. Siddiqi | |
| Title | : | Mathematical Modeling of Type-II Superconductors and Their Numerical Simulation |
| Date | : | May 11, 2003 |
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|-----------|------------------|--|
| Speaker : | Dr. A.H. Siddiqi | |
| Title | : | Wavelets in Multimedia Current Development |
| Date | : | May 21, 2003 |

13. SEMINARS GIVEN BY OUTSIDE SPEAKERS

Chemical Engineering Department

1. Speaker: Dr. Rashid Al-Othman, Saudi Aramco
Topic : Improving the Selection of Commercial Sieves for Saudi Aramco
Date : November 5, 2002
2. Speaker: Mr. Walid A. Al-Naeem, Saudi Aramco
Topic : Preparation and Catalytic Evaluation of Hydrocracking Catalyst for Heavy Oil Feedstock
Date : May 18, 2003

Electrical Engineering Department

1. Speaker: Dr. A.U.H. Sheikh

Topic : Opportunities and Challenges in Wireless Communication

Date : June 16-18, 2003.
2. Speaker: Dr. A.U.H. Sheikh

Topic : Wideband Wireless Communications: Technology Options

Date : June 16-18, 2003.
3. Speaker: Dr. I.O. Habiballah
Topic : Voltage Dip Problems in the Jubail Industry Area
Date : January 28, 2003.

Petroleum Engineering Department

1. Speaker: Bruno A. Stenger, Saudi Aramco
Title : "Reservoir Management of Ghawwar Arab-D Reservoir, the World-largest Oil Field"
Date & Time : Saturday, May 3, 2003 at 2:00 P.M.
2. Speaker: Ahmed M. Al-Hamad, Saudi Aramco
Title : "Field Applications of Reservoir Simulation in Saudi Aramco"
Date & Time : Saturday, May 10, 2003 at 2:00 P.M.

3. Speaker: Hilal H. Al-Waheed, Saudi Aramco
 Title : "State-of-the-art Formation Evaluation in Saudi Aramco"
 Date & Time : Saturday, May 17, 2003 at 2:00 P.M.
4. Speaker: Mohammed Y. Al-Qahtani, Saudi Aramco
 Title : "Challenges in Saudi Aramco's Gas Development Program"
 Date & Time : Saturday, May 24, 2003 at 2:00 P.M.
5. Speakers : Mirza A. Al-Shammasi and Nasser A. Al-Awadh,
 Saudi Aramco
 Title : "Overview of Production Technology & Offshore Facilities in
 Saudi Aramco"
 Date & Time : Saturday, May 31, 2003 at 2:00 P.M.

Chemistry Department

1. Speaker : Dr. Tarek M. Madkour
 Title : Mesoscopic and Molecular Modelling of
 the Chain Conformation, Morphology and Crystallization of
 Polyolefins
 Date : March 10, 2003
2. Speaker : Dr. Josef Pola
 Title : Laser Induced Deposition of Polythiène
 Films from Carbon Disulfide
 Date : March 16, 2003
3. Speaker : Dr. Khalil A. Zig
 Title : Magnetic Polymers
 Date : March 25, 2003
4. Speaker : Dr. Abdulaziz Jalal
 Title : Polymer Films as Laser-Based Ultrasonic
 Sensors
 Date : May 20, 2003

Earth Sciences Department

1. Speaker : Dr. AbdulFattah Al-Dajani (Saudi Aramco)
 Title : Seismic reflection moveout for azimuthally anisotropic media
 Date : April 15, 2003
2. Speaker : Dr. Ton Loermans (Saudi Aramco)
 Title : The Challenger explosion ... a classical technical failure?
 Date : April 22 (Jointly with RI Ctr. Petr. Mins.)
3. Speaker : Mr. Hassan M. Hassan
 Title : An overview of Probe (Mini-) Permeater
 Date : May 5, 2002 (Jointly with RI Ctr. Petr. Mins. and Dept. Petr.
 Eng.)

Mathematics Department

1. **Speaker** : Dr. Salah-Eddine Kabbaj
Title : Trivial Ring Extensions Defined by Homological Conditions
Date : Sunday, March 9, 2003
2. **Speaker** : Dr. Ashfaque H. Bokhari
Title : Classification of some Riemannian Metrics by their Killing Vectors
Date : Sunday, March 16, 2003
3. **Speaker** : Dr. Salah-Eddine Kabbaj
Title : T-Class Semigroups of Integral Domains
[A KFUPM-Funded Research Project]
Date : Sunday, March 23, 2003
4. **Speaker** : Dr. Hattan Tawfiq
Title : Numerical Modeling of Reactive Infiltration Instability
Date : Sunday, April 20, 2003
5. **Speaker** : Dr. Tahir Mustafa
Title : A Bochner Technique for Harmonic Morphisms
Date : Sunday, May 4, 2003
6. **Speaker** : Dr. Salim Messaoudi
Title : On Heat Propagation and Thermoelasticity by Second Sound
Date : Tuesday, May 6, 2003
7. **Speaker** : Dr. Abdul Rahim Khan
Title : Coincidence Point Theory: Existence and Applications
Date : Sunday, May 11, 2003
8. **Speaker** : Prof. Abul Hasan Siddiqi
Title : Contemporary Mathematics of Multimedia-I
Date : Sunday, May 18, 2003
9. **Speaker** : Dr. Muhmmad A. Bokhari & Dr. Hattan Tawfiq
Title : An Extension of Gauss Quadrature Formula
(Theoretical & Computational Aspects)
Date : Sunday, May 25, 2003
10. **Speaker** : Dr. M.S. Samman and Dr. A.B. Thaheem
Title : Derivations and Related Maps
Date : Tuesday, May 27, 2003
11. **Speaker** : Dr. N. Tatar
Title : The Gronwal Inequality, Applications and Generalizations
Date : Sunday, June 1, 2003
12. **Speaker** : Dr. Bilal Chanane
Title : Computational Spectral Theory
Date : [A KFUPM-Funded Research Project]
Wednesday, June 18, 2003

Math Education Seminars

1. **Speaker** : Dr. Anis A. Siddiqi (*Architecture Department, KFUPM*)
Title : Mathematics in Architecture
Date : Tuesday, March 11, 2003
2. **Speaker** : Prof. Haydar Akca
Title : Hiring Outreach Mathematicians and Duties
Date : Tuesday, March 18, 2003
3. **Speaker** : Prof. Abul Hasan Siddiqi
Title : Teaching of Calculus in Infinite Dimensional Space
Date : Tuesday, March 25, 2003
4. **Speaker** : Dr. Gabor Korvin (*Earth Sciences Department, KFUPM*)
Title : What every (Geophysics) student should know about logarithms
Date : Tuesday, April 8, 2003
5. **Speaker** : Dr. Zaki S. Siddiqi (*Chemistry Department, KFUPM*)
Title : Using Problem Based Learning in Mathematics: A Gray Matter
Date : Tuesday, April 15, 2003
6. **Speaker** : Dr. Joarder, A.
Title : Some Representations of Sample Variance
Date : Tuesday, April 29, 2003
7. **Speaker** : Mr. Balarabe Yushau
Title : On the Philosophy of Mathematics Education
Date : Tuesday, May 20, 2003

Lectures/Seminars by outside speakers

1. **Speaker** : Mr. Said Berrimi (Math. Dept. University of Setif, Algeria)
Title : Elliptic Approximations in the Framework of Gamma-Convergence
Date : **Sunday, March 30, 2003**
2. **Speaker** : **Dr. Gabor Korvin (Earth Sciences Dept., KFUPM)**
Title : Multiple Scattering of Waves in Fractal Aggregates
Date : Sunday, April 6, 2003
3. **Speaker** : **Dr. Mokhtar Kirane (Math. Dept. University of La Rochelle, France)**
Title : Traveling Waves for Reaction Diffusion Systems
Date : Sunday, April 13, 2003
4. **Speaker** : **Dr. Mokhtar Kirane (Math. Dept. University of La Rochelle, France)**
Title : Semi-Linear Systems of Higher Order Evolution Inequalities on the Heisenberg Group
Date : Sunday, April 27, 2003
5. **Speaker** : Dr. A. Bayoumi (K.S.U., Riyadh)

Title : Foundations of Complex Analysis in Non Locally Convex Spaces
 Date : Sunday, 8, 2003

Thesis Defence

1. **Speaker** : Mr. Said Ali Al-Garni
 Title : Volterra Differences Equations (VDE)
 Date : Tuesday, April 29, 2003
2. **Speaker** : Mr. Mohammed Mogib Al-Shahrani
 Title : Solving the Hankel Matrix Approximation Problem Via Path-Following Methods
 Date : Tuesday, April 29, 2003
3. **Speaker** : Mu'azu Ramat Abujiya
 Title : Some Aspects of Statistical Quality Control Using Ranked Set Sampling
 Date : Wednesday, May 28, 2003

Student's Seminar

1. **Speaker** : Mr. Saleh Ahmed Al-Humaidi (**Math 599**)
 Title : The Inverse Scattering Transform and its Applications
 Date : Saturday, May 24, 2003
2. **Speaker** : Mr. Ali Saeed Al-Qahtani (**Math 599**)
 Title : Stability of Perturbed Impulsive Differential Equation
 Date : Sunday, June 1, 2003
3. **Speaker** : Mr. Rayyan Al-Ghamdi (**Math 490**)
 Title : The Simplex Method vs. The Interior-Point Method
 Date : Tuesday, June 3, 2003
4. **Speaker** : Mr. Sutam Agool Al-Shammari (**Math 490**)
 Title : Euclidean Domains
 Date : Tuesday, June 3, 2003
5. **Speaker** : Mr. Aayed Al-Rashidi (**Math 490**)
 Title : Field of Quotients of an Integral Domain and its Localization
 Date : Tuesday, June 3, 2003
6. **Speaker** : Mr. Wael Nughaimish Al-Ahmadi (**Math 490**)
 Title : The Growth of Functions
 Date : Monday, June 16, 2003

Information & Computer Science Department

1. **Speaker:** Prof. Ahmad Nasri, American Univ. of Beirut, Lebanon
 Title : Recursive Subdivision in Computer Graphics
 Date : May 25, 2003

Computer Engineering Department

1. Speaker : Mr. Muhammad M. Abd-El-Barr, MS Baylor College of Medicine, Houston, TX, USA.
 Title : Biomedical Engineering Strengthening the Bridges between Science, Medicine and Engineering
 Date : Sunday, December 29, 2002
2. Speaker : Mr. Zubair Baig, University of Maryland
 Title : Network Security: A general overview
 Date : January 5, 2003
3. Speaker : Mr. Ahmad Al-Yamani
 Title : **Finding**
a Minimal Set of Seeds for BIST Reseeding
 Date : January 11, 2003
4. Speaker : Prof. Harry Nicholls
 Title : **Effective**
Strategic Management; Route to Science Park Success
 Date : February 23, 2003
5. Speaker: Mr. Naser S. Al-Abeedi
 STC/COE Part-Time Graduate Student
 Title : CDMA2000 Channel Capacity Evaluation
 Date : May 26, 2003

Systems Engineering Department

1. SPEAKER : DR. RODERICK BELLAMY (IMAGE SYSTEMS, AL-BASSAM EST.)
 TITLE : "BYTRONIC AUTOMATED CONTROL PRODUCTS"
 DATE : MAY 13, 2003
2. SPEAKER : DR. COURTNEY COFFMAN (SAUDI ARAMCO)
 TITLE : "STRATEGY DEPLOYMENT USING THE BALANCED SCORECARD (BCS) FRAMEWORK"
 DATE : MAY 19, 2003
3. SPEAKER : DR. Y. A. FIAGBEDZI (MATHEMATICAL SCIENCES DEPT., KFUPM)
 TITLE : "FINITE DIMENSIONAL APPROXIMATION OF DELAY SYSTEMS"
 DATE : MAY 20, 2003
4. SPEAKER : ENGR. JAMAL M. OSILAN (SAUDI ELECTRICITY CO.)
 TITLE : "CONDUCTING EXPRESS WORKSHOPS: THE SEC EXPERIENCE"
 DATE : MAY 27, 2003
5. SPEAKER : MR. KHALIL ISSA (ZAMIL AIR-CONDITIONERS)

**TITLE : “BALANCED SCORECARD (BSC) AT ZAMIL AIR-
CONDITIONERS –A BALANCING ACT BETWEEN
DOING THE RIGHT THINGS AND DOING THE THINGS
RIGHT”**

DATE : JUNE 02, 2003