

RESEARCH NEWSLETTER

A RESEARCH COMMITTEE PUBLICATION

January, 2004

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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. ICS/ADV. MODEL/259 Investigator: Dr. Mohammad Sarfraz (ICS)

TITLE: Advanced Model (Book-writing Project)

Abstract:

Advances in Geometric Modeling illustrates the significance of Geometric Modeling in construction, design and manufacture, in not only the traditional industries such as automobile and aircraft manufacturing, but also in modern industry. This includes CAD/CAM, Computer Art, Entertainment, Education and Training, Visualization, robotics, medical imaging, visualization, painting and media, and others.

This volume will

- Provide a valuable source focusing on interdisciplinary methods and affiliate research in the area.
- Provide the user community with a variety of Advanced Geometric Modeling Techniques and their applications.
- Collate and disseminate information from various disciplines such as; Curve and Surface Fitting, Geometric Algorithms, Visualization, Computational Geometry, Solid Modeling, Computer Graphics, Computer Aided Geometric Design, CAD/CAM, Splines, Deformation of Objects, Virtual Reality, Mesh Simplification, Multi-resolution, Texture Mapping, Reverse Engineering, etc.
- Provide a source for researchers and practitioners who are looking for the latest developments in the field of geometric modeling.

This in depth and well-illustrated book is an excellent reference for researchers, computer scientists, practicing engineers and those who seek state of the art techniques and applications in geometric modeling.

2. Project No. MS/HANKEL.MATRIX/260 Investigator: Dr. Soliman Al-Homidan

**TITLE: Solving the Hankel Matrix Approximation Problem via Interior-Point
Methods of Semi-Definite Programming**

Abstract:

In this one year sabbatical leave, we consider the problem of finding the nearest positive semidefinite Hankel matrix of a given rank to an arbitrary matrix. Then it will be cast as semidefinite program. The advantage of declaring the Hankel matrix approximation problem as a semidefinite program is the great achievement which semidefinite programming has accomplished during the last decade in terms of theory and practice. More efficient algorithms were introduced to solve this class of problems. One of these algorithms is the primal-dual path-following algorithm which will be surveyed and employed to solve our

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TITLE: Entropy Generation Around a Solid/Liquid Sphere in a Gas Stream

The problem of entropy generation calculation for the case of flow and forced/mixed convection around a solid/liquid sphere subjected to different boundary conditions will be studied numerically using a finite-difference technique. The governing momentum, energy and entropy generation equations will be numerically solved for a wide range of the governing parameters; Reynolds number, interior-to-exterior viscosity ratio, Grashof number and spin parameter. The liquid spheres surface rotation resulting from the shear stress exerted on the surface by the external flow will also be considered so that the surface velocity will be calculated.

The research proposal is aimed at the development of a software that calculates the local and average entropy generation rate around the sphere. This software will be utilized to conduct a parametric study indicating the factors that influence entropy generation around a sphere under forced/mixed convection conditions to obtain the values of the controlling parameters and the suitable boundary conditions that result in minimum entropy generation.

5. Project No. CHE/TAYLOR-FLOW/262 Investigator: Dr. Usamah Al-Mubaiyedh

TITLE: The Stability and Dynamics of Non-Isothermal Taylor-Couette Flow: Influence of Viscous Heating, Buoyancy and Fluid Thermal Sensitivity

Abstract:

The processing of fluids in modern rotating machinery is often influenced by the onset of hydrodynamic instabilities that could lead to a degradation of the product quality and hence limiting the process throughput. The characterization of the instability boundaries and mechanisms in idealized flow geometries, such as Taylor-Couette flow, can help in understanding the essential physics behind the cause of these instabilities and provide guidelines to predict the operability of processes involving shear-dominated deformations. The presence of temperature gradients within the flow field could play a significant role in either enhancing or suppressing these instabilities depending on the flow conditions. Therefore, we propose in this project a theoretical study that enables the exploration of the stability and dynamics of non-isothermal Taylor-Couette flow. We consider viscous heating effects that generate temperature non-uniformities leading to modification of the fluid properties, namely the density and viscosity, within the flow field. The interaction between the energy and momentum conservation laws for thermally sensitive fluids will modify the centrifugal acceleration of the fluid, reduce the ability of the fluid to dissipate flow disturbances and will generate imbedded buoyancy forces. A study that incorporates these combined effects is lacking in the literature and it is expected to have a significant impact. This study will be undertaken for two years, during which both linear and nonlinear stability analyses of the non-isothermal Taylor-Couette flow will be perused.

**6. Project No. COE/CELL PLACE/263 Investigators: Dr. M. Sadiq Sait
Dr. A.S. Abdul Waheed (COE)
Mr. Mahmood R. Minhas (ICS)**

TITLE: Parallel Iterative Heuristics for Performance-Driven Low-Power VLSI Standard Cell Placement

Abstract:

The inherent complexity involved in VLSI design and its subproblems has always made them ideal application areas for iterative heuristics. However, the major drawback has been the large runtime involved in reaching acceptable solutions especially in the case of multi-objective optimization problems. Among the acceleration techniques proposed, parallelization of these heuristics is the most promising. In this project, we develop parallel algorithms, techniques and tools for these heuristics, namely Simulated Annealing, Tabu Search, Genetic Algorithms Stochastic Evolution, and Simulated Evolution applied on multiobjective VLSI cell-placement problem. These placement objectives are to reduce power dissipation and wire-length while improving performance (delay). This parallelization is to be achieved on a cluster of PCs interconnected by a low-latency network.

Keywords: VLSI physical design, Iterative Algorithms, Optimization, Low-Power, Performance, Placement, Parallel Heuristics, Parallelization, Multi-objective, Metaheuristics, Cluster

Computing.

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 Thermo- dynamic 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-PROTEC- TION/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. 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 Convection Flow in Parallel and Converging-Plate Vertical Channels (ME/TURBULENT/246)
Mechanical Engineering	Dr. Ameen El-Sinawi	Two-Dimensional Vibration Suppression in Machining Using a Kalman-Estimator-Based Feed-Forward Active Controller (ME/KALMAN/247)
Mechanical Engineering	Dr. Zaki Ahmad (ME)	Principles of Corrosion Engineering and Corrosion Control (Bookwriting Project) (ME/CORROSION ENG./258)
College of Computer Science & Engineering		
ICS Department	Dr. M. Sarfraz	Geometric Modeling: Techniques, Applications, Systems and Tools (Bookwriting Project) (ICS/GEOMETRIC/256)
Systems Engineering	Dr. Umar Al-Turki Dr. Shokri Z. Selim Dr. Abdulbasit Andijani	On Stochastic Single Machine 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 / Department -----	Principal Investigator / Co-Investigator(s) -----	Title of the Project and its Code -----
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)
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)
<u>College/Department</u>	<u>Principal Investigator and the Co-Investigators</u>	<u>Title of the Project and the Code Number</u>
Mathematical Sciences	Dr. 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. 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)	Photoxidation 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.	Dr. Fouad M. Al-Sunni Dr. Samir Al-Amer (SE)	Identification of a class of nonlinear systems
15.	Dr. Salah M. Sultan (Chemistry)	Sequential Injection Analysis Technique for Automated Titrations (Release time) (proposal)

		recd. on 26.1.2003)
16	Dr. Bilal Chanane (Mathematics)	Computational Spectral Theory (Release time proposal)
17	Dr. Mohammad Sadiq Sait & Dr. Mostafa Abd-El-Barr (COE)	Iterative Heuristics for the Design of Combinational Logic Circuits
18	Dr. Omar Abdullah Zaid (Accounting & MIS)	Accounting Foundations and Principles: The Islamic Perspective”
19	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
20	Dr. Selim Messaoudi (Math) Mr. Said Berrimi (Math)	On the long time behavior of some viscoelastic problems
21	Dr. Mohammad Abido (EE) Dr. Youssef Abdel Magid (EE)	Power Systems Stability Enhancement Using Unified Power Flow Controllers
22	Dr. Zulfiqar Ahmed (Geol) Dr. Abdulwahab Abokhodair	Regional Geology of Al-Quwayiyah Area of the Eastern Arabian Shield
23.	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
24.	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.
25.	Dr. H. Bahlouli (Phys) Dr. A. Alsunaidi (Phys) Dr. S. Al-Amoudi (Phys)	Transport Properties of Nano-Structure Devices
26.	Dr. Abdullah Alsunaidi (Phys) Dr. Basel Abusharkh (Che)	Self-Assembly in Confined Semiflexible Copolymers
27.	Dr. Malick M. Ndiaye and Mr. Shaikh Arifusalam, Systems Engineering Dept.	Integrating Retailing Location Models with GIS in a Sitting Support System
28.	Dr. Wolfgang Forner (Chem) Dr. Hassan M. Badawi (Chem)	Potential Surfaces and Vibrational Analyses of Some Halopropanols
29.	Dr. Basel Abu Sharkh (Che) Dr. Mazen Khaled (Chem) Dr. Raafat Alnaizy (Che) Dr. Shaikh Asrof Ali (Chem)	Influence of Hydrophobe Characteristics on Amphiphilic Polyelectrolyte Performance as Primary Coagulants/Flocculants in Groundwater and Wastewater Treatment
30	Dr. Muhammad Al-Arfaj (Che) Dr. Hussain Al-Duwaish (EE)	Development and Application of State Estimators in Control of Reactive Distillation
31	Dr. Abdullah Alsunaidi (Phys) Dr. Hocine Bahlouli (Phys)	Mesoscale Simulation of the Response of Liquid Crystal Molecules to External Aligning Fields
32	Dr. M. Aslam Chaudhry (Math)	Formulation, Properties and Evaluation of the Extended Bessel Functions (Release Time

		proposal)
33	Dr. N. Tabet (Physics) Dr. A. Mekki (Physics) Dr. K. Mezghani (ME)	DC-Magnetron Sputtering Synthesis and Characterization of the Physical Properties of Zinc Oxide Thin Films
34	Dr. Abul Hasan Siddiqi (Math) Dr. Khaled Furati (Math) Mr. Shafiqur Rehman (RI) Dr. M. N. Siddiqui (Chemistry) Mr. Kamran Arshad (EE)	Wavelet and Fractal Methods for the Analysis of Meteorological Data of Saudi Arabia

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
4.	Dr. Khedair S. Al-Khedaire, IAS Department	Industrial Sociology: Saudi Industrial Model
5.	Dr. Mohammad Sarfraz, ICS	Computer Aided Intelligent Recognition Techniques and Applications

6. SABBATICAL LEAVE PROPOSALS RECEIVED FOR 2003/2004

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

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

Updated as of 12.1.2004

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

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

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

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

8. PUBLICATIONS IN REFEREED JOURNALS REPORTED AFTER JULY, 2003

College of Engineering

Chemical Engineering

1. "The effect of pH and salt concentration on the coexistence curves of aqueous two phase systems containing a pH responsive copolymer and polyethylene glycol", **S. Waziri, B. Abu-Sharkh, Sk. A. Ali**, *Fluid Phase Equilibria*, 205, No (2), 195-365 (2003).
2. "Miscibility of hexene-LLDPE and LDPE Blends: Rheological Study of the Influence of Branch Content and Composition Distribution", **Ibnelwaleed A. Hussein, Tayyab Hameed, Basel F. Abu Sharkh, Khaled Mezghani**, *Polymer* 2003, 44(16), 4665-4672
3. "Viscosity behavior and surface and interfacial activities of hydrophobically modified water-soluble acrylamide/N-phenyl acrylamide block copolymers", **B. F. Abu-Sharkh, G. O. Yahaya, S. A. Ali, E. Z. Hamad, I. M. Abu-Reesh**, *Journal of Applied Polymer Science*, 89(8), August 2003, 2290-2300.
4. "Influence of hydrophobe content on phase coexistence curves of aqueous two-phase solutions of associative polyacrylamide copolymers and poly(ethylene glycol)", **B. F. Abu-Sharkh, E. Z. Hamad, S. A. Ali**, *Journal of Applied Polymer Science*, 89 (5) August 2003, 1351-1355.
5. "Influence of copolymer structure on microstructure and equation of state of nonadditive hard copolymer chains", **A. Sunaidi, B. Abu-Sharkh**, *Journal of Chemical Physics*, **119**, No. 18, 8 November, 2003, p 9894-9902.
6. "Comparison of Axial Dispersion and Tanks-in-Series Models for Simulating the Performance of Enzyme Reactors", **Ibrahim M. Abu-Reesh and Basel F. Abu-Sharkh**, *Industrial and Engineering Chemistry Research*, **42**, 2003, pp5495-5505.
7. "Protein partitioning in aqueous two-phase systems composed of a pH-responsive copolymer and polyethylene glycol", **Waziri, B. Abu-Sharkh, Asrof Ali**, *Biotechnology Progress*, Feb 2004. p231
8. "Effect of Inhibitor Treatment on Corrosion of Steel in a Salt Solution", **Kahraman, R., Saricimen, H., Al-Zahrani, M. and Al-Dulaijan, S.**, *ASM Journal of Materials Engineering and Performance*, **12**:5, 524-528 (2003).
9. "Influence of Epolene G-3003 as a Coupling Agent on the Mechanical Behavior of Palm Fiber-Polypropylene Composites", **Kahraman, R., Abbasi, S. and Abu-Sharkh, B.**, *International Journal of Polymeric Materials*, (Accepted).

Civil Engineering

1. "e-Learning (Distance Education) and Its Role in Higher Education" (in Arabic language), **Abduljawwad, S.N.**, Al-Mohandis, Vol. 04, 1424, pp. 55-57.
2. "Effectiveness of Corrosion Inhibitors in Contaminated Concrete", **Al-Amoudi, O.S.B., Maslehuddin, M., Lashari, A.N. and Almusallam, A.A.**, Cement and Concrete Composites, Theme Issue on: Concrete Durability, Vol. 25, Nos. 4-5, May-July 2003, pp. 439-449.
3. "Effectiveness of Surface Coatings in Improving Concrete Durability", **Almusallam, A.A., Khan, F.M., Al-Dulaijan, S.U. and Al-Amoudi, O.S.B.**, Cement and Concrete Composites, Theme Issue on: Concrete Durability, Vol. 25, Nos. 4-5, May-July 2003, pp. 473-481.
4. "Determination of Parameters for Hyperbolic Model of Soils", **Al-Shayea, N., Abduljawwad, S.N., Bashir, R., Al-Ghamedy, H. and Asi, I.**, Geotechnical Engineering Journal, 156, Issue 2, 2003, pp. 105-117.
5. "Volume Change Behavior of Arid Calcareous Soils", **Azam, S., Abduljawwad, S.N. and Al-Amoudi, O.S.B.**, ASCE Journal of Environmental Engineering, 2003, pp. 90-94.
6. "CDM Model for Residual Strength of Concrete Under Cyclic Compression", **Baluch, M.H., Al-Gadhib, A.H., Khan, A.R. and Shaalan, A.**, Cement & Concrete Composites, Vol. 25, No. 415, May/July 2003, pp. 503-512.
7. "Properties of Sabkha Soils and the Construction Problems on Them", **Al-Amoudi, O. S. B.**, Vol. 1, No. 2, 2003, pp.57-65 (in Arabic).
8. "Reinforcement Corrosion in Concrete Structures, Its Monitoring and Service Life Prediction – A Review", **Ahmad, S.**, Journal of Cement and Concrete Composites, Vol. 25/4-5, May-July 2003, pp. 459-471.
9. "Sulfate Resistance of Plain and Blended Cements Exposed to Varying Concentration of Sodium Sulfate", **Al-Dulaijan et al.**, Cement and Concrete Composites Journal, Vol. 25, Issue 4-5, 2003, pp. 429-437.

Electrical Engineering

1. "Tracking Analysis of the NLMS Algorithm in the presence of both Random and Cyclic Nonstationarities," **M. Moinuddin and A. Zerguine**, IEEE Signal Processing Letters, Volume 10, No. 9, pp. 256-258, September 2003.
2. "Coordinated design of a PSS and an SVC-based controller to enhance power system stability," **M.A. Abido and Y.L. Abdel-Magid**, International Journal of Electrical Powers and Energy Systems, Vol. 25, No. 9, November, 2003, pp. 695-704.

3. "Environmental/Economic Power Dispatch Using Multiobjective Evolutionary Algorithms", **M.A. Abido**, IEEE Transactions on Power Systems, Vol. 18, No. 4, November 2003, pp. 1529-1537.
4. "A CMOS fully balanced second-generation current conveyor," **H. Alzahr, H. Elwan and M. Ismail**, IEEE Transactions on Circuits and Systems II: Analog and Digital Signal Processing, Vol. 50, pp. 278-287, June, 2003.
5. "Transmission-expansion planning based on a non-linear programming algorithm," **Al-Hamouz Z. and Al-Farj A.**, Journal of Applied Energy, 2003, pp. 169-177.
6. Proton microprobe analysis of water trees in underground high Voltage cables," **M. Ahmed, M.A. Garwan, M.A. Al-Ohali, Z. Al-Hamouz, K. Soufi, R. Minqin, I. Rajta and F. Watt**, Journal of Nuclear Instruments and Methods, B210, 2003, pp. 548-553.
7. "Imaging and Elemental Analysis of Water Trees in HV Cable Insulation using Scanning Electron Microscopy," **M. Ahmed, A. Ul-Hamid, M.A. Garwan, M.A. Al-Ohali, Z. Al-Hamouz and K.Y. Al-Soufi**, Journal of Microscopy and Analysis, Vol. 35, 2003., pp.
8. "Design of Space-Time Trellis Codes for Rapid Rayleigh Fading Channels," **S. Zummo and S. Al-Semari**, Journal on Communications and Networking, Vol. 5, No. 2, June 2003, pp. 174-183.
9. "A Novel Mixed-work Current-Controlled Current-Conveyor-Based Filters," **M.T. Abuelma'atti**, Active Passive Electronic Components, Vol. 26, September, 2003, pp. 185-191.
10. "Large Signal Analysis of Dual-Parallel Electroabsorption Modulator," **M.T. Abuelma'atti**, Fiber and Integrated Optics, Vol. 22, September-October, 2003, pp. 333-342.
11. "Synthesis of a Novel Low-Component Programmable Sinusoidal Oscillator," **M.T. Abuelma'atti and S.M. Al-Shahrani**, Active and Passive Electronic Components, Vol. 26, No. 1, March 2003, pp. 31-36.
12. "Studies of Field Coupling between stacked microstrip patch resonators and design of broadband Radiators," **D. Guha, J.Y. Siddiqui and Sheikh Sharif Iqbal**, Scientific Journal of FACTS UNIVERSITATIS, Mechanics, Automated Control and Robotics, Vol. 3, No. 15, 2003, pp. 1121-1125.
13. "A Global ANN Algorithm for Induction Motor Based on Optimal Preview Control Theory," **M.M. Negm, A.H. Mantawy, and M.H. Shwehdi**, Iranian Journal of Electrical and Computer Engineering, Vol. 2, No. 1, Winter-Spring, 2003.
14. "The Long-term Hydro-scheduling Problem: A New Algorithm," **A.H. Mantawy, S.A. Soliman and M.E. El-Hawary**, Journal of Electric Power Systems Research, 64(1) 2003, pp. 67-72.
15. "Park's Transformation Application for Power System Harmonics Identification and Measurement," **S.A. Soliman, A.H. Mantawy and M. E. El-Hawary**, Journal of Electric Power Components and Systems, Vol. 31, No. 8, pp. 777-789, 2003.

16. "An Innovative Simulated Annealing Approach to The Long-Term Hydro Scheduling Problem," **A.H. Manatwy, S.A. Soliman and M.E. El-Hawary**, Journal of Electrical Power and Energy Systems, 25 (2003), pp. 41-46.

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1. "Estimation of the effective interfacial area in packed-bed liquid desiccant Contactors," **Gandhidasan, P.**, Industrial & Engineering Chemistry Research, Vol. 42, July 2003, pp. 3420-3425.
2. "Three-to-one internal resonances in a general cubic nonlinear continuous system", **M. Pakdermili and E. Ozkaya**, Journal of Sound and Vibration, Vol. 268, 2003, 543-553
3. "Nonlinear vibrations of a simple-simple beam with a non-ideal support in between", **M. Pakdermili and H. Boyaci**, Journal of Sound and Vibration, Vol. 268, 2003, 331-341
4. "Laser pulse heating: a formulation of desired temperature at the surface", **Kalyon M. and Yilbas B.S.**, Optics and Lasers in Engineering, Vol. 39, pp. 109-119, 2003.
5. "Wear properties of punch with shared edge", **Yilbas B.S., Abdul Aleem B.J. and S. Zainullabdeen**, Industrial Lubrication and Tribology, Vol. 55, pp. 116-120, 2003.
6. "Laser Pulse Heating and Flexural Wave Generation", **Yilbas B.S. and Hyder J. J.**, Materials Processing Technology, Vol. 141, pp. 1-8, 2003.
7. "Formulation of laser induced thermal stresses: stress boundary at the surface", **Yilbas B.S. and Ageeli A.**, Proc Instn Mech Engrs Part C: J. Mechanical Engineering Science, Vol. 217, pp. 423-434, 2003.
8. "Investigation into laser produced evaporating front characteristics in relation to laser drilling", **Yilbas B.S., Arshad G.M., Acar H.I.**, Lasers in Engineering, Vol.13 (1), pp. 65-74, 2003.
9. "Laser shortpulse heating of gold: variable properties case", **Yilbas B.S.**, Int. J. Heat and Mass Transfer, Vol. 46, pp. 3511-3520, 2003.
10. "Confined swirling jet impingement onto an adiabatic wall", **Shuja S.Z., Yilbas B.S. and Rashid M.**, Int. J. Heat and Mass Transfer, Vol. 46, pp. 2947-2955, 2003.
11. "Laser heating including phase change process and thermal stress generation in relation to drilling", **Yilbas B.S. and Naqavi I.Z.**, Proc Instn Mech Engrs Part B: J. Engineering Manufacture, Vol. 217, pp. 977-991, 2003.

12. "Laser shortpulse heating of gold-chromium-gold multi-layer assembly", **B.S. Yilbas and Arif A.F.M.**, IMechE Part C: J. Mechanical Engineering Science, Vol. 217, pp. 797-809, 2003.
13. "Influence of Layers on Flexural Motion of Multilayer Assembly due to Laser Ablation Process", **Yilbas B.S. and Hyder J.**, IMechE Part C: J. Mechanical Engineering Science, Vol. 217, pp. 945-954, 2003.
14. "Laser cutting of brush bristles and composite plates", **Yilbas B.S.**, Lasers in Engineering, Vol. 13, pp. 155-165, 2003.
15. "Entropy analysis in relation to laser shortpulse heating of silver", **Yilbas B.S.**, IMechE Part C: J. Mechanical Engineering Science, Vol. 217, pp. 1049-1065, 2003.
16. "Laser non-conduction limited heating and prediction of surface recession velocity in relation to drilling", **Yilbas B.S. and Shuja S.Z.**, IMechE Part C: J. Mechanical Engineering Science, Vol. 217, pp.1067-1076, 2003.
17. "Laser Hole Drilling Quality and Efficiency Assessment", **Yilbas B.S. and Aleem B.J.**, IMechE Part C: J. Mechanical Engineering Science, Vol. 217, pp.1067-1076, 2003.
18. "Jet impingement onto a hole with constant wall temperature", **Yilbas B.S., Shuja S.Z. and M.O. Budair**, Numerical Heat Transfer, Vol. 43, pp. 1-23, 2003.

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1. "Environmental Impact of Hydrogen Energy Use", **A. Z. Sahin and A. Z. Al-Garni**, Renewable Energy-UNESCO, pp, 93-95, 2003G (1424 H),

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1. "Environmental, safety, Efficiency, Versatility and economic aspects of hydrogen energy utilization" **A. Z. Sahin and A. Al-Garni**, Invited paper for publication on a book by renewable energy 2003, UK Dec. 2003 (1423 H).
2. "Technical translation of the book *Aerodynamique Subsonique*", by I. Paraschivoiu, 575 pages including 307 technical illustrations, **Dr. F. Saeed**, being published by Polytechnique International Press, Montreal, QC, Canada, Forth quarter 2003.

3. "Technical translation of the book *Recueil D'exercices D'Aerodynamique Subsonique*," by I. Paraschivoiu, 360 pages including 55 technical illustrations, **Dr. F. Saeed**, to be published by Polytechnique International Press, Montreal, QC, Canada, Forth quarter 2003.
4. "55 technical illustrations in *Recueil D'exercices D'Aerodynamique Subsonique*," by I. Paraschivoiu, **Dr. F. Saeed**, to be published by Polytechnique International Press, Montreal, QC, Canada, Forth quarter 2003.

College of Sciences

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1. "Structural Stability and Vibrational Assignments of Halosulfonylazides", **H. M. Badawi, W. Forner and K. S. Al-Ghamdi**, *Journal of Molecular Structure (Theochem)*, 624 (2003), p. 225-232.
2. "How Students Perceive Group Problem Solving: The Case of a Non-specialist Chemistry Class", **Zaki S. Seddigi** and Tina L. Overton, *Chemistry Education: Research & Practice*, 4(3), (2003), 387-395.
3. "Conformational and Vibrational Analyses for 2,2-Dihalovinyl Azides $CX_2=CH-NNN$ (X is F and Cl)", **H. M. Badawi, W. Forner and K. S. Al-Ghamdi**, *Journal of Molecular Structure (Theochem)*, 638 (2003), p. 147-156.
4. "Reactions of 2- Amino-1,4- Naphthoquinone with Aldehydes" **A. J. Hamdan and S. Al-Jaroudi**, *AJSE*, 28 (2003) pp. 51-60.
5. "Sequential Injection Spectrophotometric Method for the Assay of Paracetamol in Drug Formulations" **Dr. Salah M. Sultan**, *Journal of Flow Injection Analysis (JFIA)*, accepted, 2003.
6. "Differential Electrolytic Potentiometric Method for the Determination of Ciprofloxacin in drug formulations" **A.M. Abulkibash, S.M. Sultan, A.M. Al-Olyan and S. M. Al-Ghannam**, *Talanta* (2003), 61, 239.
7. "Mixed Ligand Gold(I) Complexes with Phosphines and Selenourea" S. Ahmad and **A. A. Isab**, *Transition Metal Chem.*, 28, (2003) pp 540-543.
8. "Synthesis and Spectroscopic Characterization of Silver(I) Complexes of Selenones" S. Ahmad, **A. A. Isab**, and A. P. Arnold, *J. Coord. Chem.*, 56, (2003) pp 539-544.
9. "Solid-state NMR study of 1,3 -imidazolidine-2-selenone and some related compounds" M. I. M. Wazeer, **A. A. Isab**, and **H. P. Perzanowski**, *Magn. Res. Spectroscopy*, 41, (2003) pp 1026-29.
10. "Anamalous Viscosity Behavior of a Bicelle System with Various Molar Ratios Short- and Long-Chain Phospholipids", **J. S. Hwang and G. A. Oweimreen**,

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11. "The Solubility Product of PbCl_2 from Electrochemical Measurements", **J. S. Hwang and G. A. Oweimreen**, *J. Chemical Education* 80 (9), (2003) P. 1051.
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18. "Alkylation and Oxidation Reactions of Arabian Asphaltenes", **Siddiqui, M. N.**: *Fuel*, Vol.ume 82, No. 11, (2003), p. 1323.
19. "Infrared Study of Hydrogen Bond Types in Asphaltenes", **Siddiqui, M. N.**, *Petroleum Science & Technology*, Vol.ume 21, No. 9 & 10, (2003) p. 1601.
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- "Using Ground-Penetrating Radar to delineate fractures from the Rus Formation, Dammam Dome, Eastern Saudi Arabia", **Al-Shuhail, A.A., M.M. Hariri and M.H. Makkawi**, International Geology Review (In Press)
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49. "Utilization of Wind-Diesel Systems to provide power requirements of remote settlements in Saudi Arabia," **S. Rahman, I. El-Amin, A. Al-Shehri, J. Bakhashwain, F. Ahmed, S.M. Shahid**, 4th International Workshop on Large-Scale Integration of Wind Power and Transmission Networks for Offshore Wind Farms, Billund, Denmark, October 20-21, 2003.
49. "Electrical Safety in Projects" **I. El-Amin and J. Bakhashwain**, presented to the Symposium on Industrial Safety, Dammam, December, 15-17, October 2003.

Mechanical Engineering

1. "HVOF coating of Inconel 625 onto stainless and carbon steel surfaces: corrosion and bonding testing", **Boudi A., Hashmi M.S.J. and Yilbas B.S.** AMPT 2003, Dublin, Ireland, July 8 -11 2003.
2. "Laser heating of sheet metal and thermal stress development", **Khan O. Yilbas B.S.** , AMPT 2003, Dublin, Ireland, July 8 -11 2003.
3. "Rejuvenation of Inconel alloy used in gas turbines", **Thabit T.B., Hashmi M.S.J., and Yilbas B.S.**, AMPT 2003, Dublin, Ireland, July 8 -11 2003.
4. "Jet impingement onto a conical hole in relation to laser machining", **Yilbas B.S., Shuja S.Z. and M.O. Budair**, AMPT 2003, Dublin, Ireland, July 8 -11 2003.
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Aerospace Engineering

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College of Sciences

Chemistry Department

1. "Chemistry Class Students Impressions About Open-ended Problem Solving" **Zaki S. Seddigi** and T. Overton, Second International Conference in Chemistry, 6-9 December 2003, Doha, Qatar.
2. "Sequential Injection Kinetic Method for the Assay of Aspirin in Drug Formulations" **Dr. Salah M. Sultan**, has been accepted for oral presentation in the International Conference of Flow Injection Analysis to be held in Merida, Venezuela on 7th to 13th December 2003.
3. "Anisotropy of Rotation of 2,2,6,6-tetramethyl piperidine 1-oxide in the Vicinity of the Nematic-to-isotropic Phase Transition of 4-n-pentyl-4'-cyanobiphenyl", **J. S. Hwang and G. A. Oweimreen**, *Proceedings of the 26th International EPR Symposium*, Denver, USA, July 27-31, 2003, P. 62.
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Earth Sciences Department

1. "Faculty and post-graduate research in Carbonate Geology at KFUPM", **Hussain, M.**, KFUPM- Schlumberger Exchange Mtg, KFUPM, Dhahran, December 9-10, 2003.
2. "Direct inversion of hydraulic and electric transport properties into an equivalent rock model", **Korvin, G., N. Akbar, and A. Abdulraheem**, KFUPM-Schlumberger Exchange Mtg, KFUPM, Dhahran, December 9-10, 2003.

3. "Estimating porosity and lithofacies from log data using abductive networks machine learning", **Abdel-Aal, R.E. and A.M. Al-Ghamdi**, KFUPM-Schlumberger Exchange Mtg, KFUPM, Dhahran, December 9-10, 2003.
4. "Thin section and SEM characterization of the effects of water flooding on the porosity in carbonate rocks: Ghawar Field, Saudi Arabia", **Osman Abdullatif, M. Hussain and M. Qasim**, KFUPM- Schlumberger Exchange Mtg, KFUPM, Dhahran, December 9-10, 2003.
5. "A proposed field experiment to evaluate the impact of velocity-depth profiles in sand dunes on the seismic data", **Al-Shuhail, A.**, KFUPM- Schlumberger Exchange Mtg, KFUPM, Dhahran, December 9-10, 2003.
6. "Estimation of near surface time delays using H_{∞} spatial deconVolution", **Khene, F.M. and A.M. Al-Ghamdi**, KFUPM- Schlumberger Exchange Mtg, KFUPM, Dhahran, December 9-10, 2003.
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8. "Environmental impacts of engineering and quarrying works, Eastern Region, Saudi Arabia", **Osman Abdullatif and M. Hariri**, Geo-Environmental Engineering Conference, Singapore, December 9-10, 2003.
9. "Sedimentary processes, facies and eVolution of the White Nile in central Sudan". **Osman Abdullatif and A.R. Sir Alkhatim**, Braided Rivers International Conference, University of Birmingham, 2003 (Abstract).
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4. "ACOUSTIC WAVES IN AN INHOMOGENEOUS OCEAN", F.D. ZAMAN AND AHMED AL-MARZOUQ, THE 6TH INTERNATIONAL CONGRESS ON INDUSTRIAL AND APPLIED MATH. SYDNEY, AUSTRALIA JULY 7-11, 2003.
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1. "Study of GeO_2 thin layers using synchrotron radiation" oral communication. **N. Tabet, M. Faiz**, N. M. Hamdan and Z. Hussain, Beam Injection Assessment of Microstructure in Semiconductors (BIAMS2003), Lille, France, May, 25-29, 2003.
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 5. M.A. Gondal, A. Hameed, **Zain H. Yamani** and A. Suwaiyan, "Photocatalytic Splitting of Water into Hydrogen and Oxygen Using Laser", Petrotech-Bahrain, Oct. 2003.
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17. **A.M. Aljalal**, "Thin Transparent Films as Laser-Based Ultrasound Detectors", Second Middle east Nondestructive Testing Conference and Exhibition, Jubail, Saudi Arabia (2003).
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19. Y.N. Al-Nassar, **A. M. Al-Jalal**, M. A. Khan and S. A. Al-Kaabi, Functional Dependence of Ultrasonic Speed on Salinity and Temperature, Second Middle East Nondestructive Testing Conference and Exhibition, Jubail, Saudi Arabia (2003).

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College of Computer Science & Engineering

Information & Computer Science

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6. "A Modified Ant Colony Algorithm for EVolutionary Design of Digital Circuits". **Mostafa Abd-El-Barr, Sadiq M. Sait, Bambang A.B. Sarif, Uthman Al-Saiari,** IEEE Congress on Evolutionary Computation, Canberra, December 2003, pp. 708-715.
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Dither-Quantized Input Channel”, **Cheded L.**, International Symposium on Signal processing and Its Applications (ISSPA'03), (IEEE-Sponsored), July 1-4, 2003, Paris, France.

11. "Adaptive Differential Pulse-Coded Modulation with Exponential Tracking," **Aldajani, M. A. and Sayed, A. H.**, Proc. International Conference on Image and Signal Processing and Analysis (ISPA), Rome, Italy, Vol. 1, Page(s) 532-535, Sep. 21, 2003
12. “H-infinity Error Bounds in Approximating Time-Delay Systems”, **Al-Amer S. and Al-Sunni F.**, Proc. Instn Mech. Engin. Vol. 217, Part I: Systems and Control Engineering, pp. 421-426, 2003
13. “Maximum Capture Analysis for Petrol Stations Location”, **Arifusalam S., Ndiaye, M. and Ruhhal, N.**, EURO/INFORMS Joint International Meeting, July 6-10, 2003, Istanbul, Turkey

College of Industrial Management

Department of Management & Marketing

1. “An Evaluation of Malaysian Consumers’ Perceptions Towards Products Made in Korea: An Asia Pacific Marketing Perspective”, **Sohail, Sadiq M. and Ahmed, Zafar. U.**, the 5th Asian Academy of Management Conference (AAMC) 2003, 10-13 September 2003. Hyatt Regency Kuantan, Malaysia.
2. “Husband-Wife Influence on Consumer Decision Making in a Multicultural Society”, **Khan, Ghazala and Sohail, Sadiq M.**, The Global Business & Economics Research Conference, Istanbul, August 7 - 13, 2003, Hyatt Regency, Istanbul, Turkey.
3. “Organizational Culture and Performance” **Dr. Mustafa Achoui** Middle East/North Africa Regional Conference of Psychology, Dubai, December 2003.

College of Environmental Design

Architectural Engineering Department

1. “Air-conditioning System Operation Strategies for Intermittent Occupancy Buildings in a Hot-Humid Climate”, **Ismail M. Budaiwi**, Eight International IBPSA Conference, Eindhoven, Netherlands, August 11-14, 2003.
2. “Comparison of the Acoustical Performance of Mosque Geometry Using Computer Model Studies”, **Adel A. Abdou**, Eight International IBPSA Conference, Eindhoven, Netherlands, August 11-14, 2003

Construction Engineering & Management

1. "Public Private Partnership (PPP) in Water Sector in Saudi Arabia", **Jalaluddin, M. and Almohawis, S.**, The 2nd International Water Conference in the Arab Countries (ARWATEX 2), Beirut, Lebanon, 7-10 July 2003.

City & Regional Planning Department

1. "Power Distribution Network Information Management System: The Internet Based (Arc IMS) GIS System", **Dr. Adel Aldosary**, The 3rd Annual Power Transmission and Distribution Forum, Institute of International Research (IIR), Dubai, United Arab Emirates, May 18-21, 2003. (Invited by Organizing Committee).
2. "The First Planning Symposium for the Development of Academic Planning Programs and Professional Practice in Saudi Arabia", **Dr. Adel Aldosary**, First Day Open Discussion Forum Chairman, October 14-15, 2003, Conference Center, KFUPM, Dhahran, Saudi Arabia.
3. "A Unified National Strategic Training Plan for Saudi Arabian", **Dr. Adel Aldosary**, Presented to The Second Applied Symposium for National Labor force, Kuwait Chamber of Commerce and Industry, Kuwait City, December 8-10, 2003, Kuwait, (Invited by Organizing Committee).
4. "The spatial dimension of shopping behaviour in the inner shopping area of the city of Jeddah, Saudi Arabia", **Dr. Abdulgader Al-Amir** 4th international space syntax conference, 17-19 June, 2003, London, 2003
5. "The First Planning Symposium for the Development of Academic Planning Programs and Professional Practices in Saudi Arabia" **Dr. Abdulgader Amir**, Chairman of the Urban Planning Department, Discussion Session, October 14-15, 2003, Conference Center, KFUPM, Dhahran 31261.

Library Affairs

1. "Electronic Tools for Cataloging", **Zahiruddin Khurshid**, OCLC Systems & Services, **19(1)** (2003), pp 23-27.
2. "The Impact of Information Technology on Job Requirements and Qualifications for Catalogers", **Zahiruddin Khurshid**, Information Technology and Libraries, **22(1)** (2003), pp 18-21.
3. "Adoption of Internet for Resource Sharing by the Gulf Academic Libraries", **Moid A. Siddiqui**, The Electronic Library, **21(1)** (2003), pp 56-62.
4. "Management for Change in Acquisitions in Academic Libraries", **Moid A. Siddiqui**, The Electronic Library, **21(4)** (2003), pp 352-357.

10. BOOKS PUBLISHED AND CONTRIBUTIONS

Electrical Engineering Department

1. “Performance of the Multilayer Perception-based DFE with Lattice Structure in Non-Linear Channels, **A. Zerguine and A. Shafi**, Soft Computing in Communications, by Lipo Wang, Physica Verlag, a Springer-Verlag Company, January 2004, pp. 31-53.
2. “Wireless Mobile Communications: Theory and Techniques”, **A.U. Sheikh**, Kluwer Academic Publishers, November 2003.

Aerospace Engineering Department

1. “Environmental, safety, Efficiency, Versatility and economic aspects of hydrogen energy utilization” **A. Z. Sahin and A. Al-Garni**, Invited paper for publication on a book by renewable energy 2003, UK Dec. 2003 (1423 H).
2. “Technical translation of the book *Aerodynamique Subsonique*”, by I. Paraschivoiu, 575 pages including 307 technical illustrations, **Dr. F. Saeed**, being published by Polytechnique International Press, Montreal, QC, Canada, Forth quarter 2003.
3. “Technical translation of the book *Recueil D’exercices D’Aerodynamique Subsonique*,” by I. Paraschivoiu, 360 pages including 55 technical illustrations, **Dr. F. Saeed**, to be published by Polytechnique International Press, Montreal, QC, Canada, Forth quarter 2003.
4. “55 technical illustrations in *Recueil D’exercices D’Aerodynamique Subsonique*,” by I. Paraschivoiu, **Dr. F. Saeed**, to be published by Polytechnique International Press, Montreal, QC, Canada, Forth quarter 2003.

Mathematics Department

1. “On the Number of Nilpotents in the Partial Symmetric Semigroup”, **A. Laradji and A. Umar**, Technical Report # 305, (June 2003).
2. “Combinatorial Results for Semigroups of Order-Decreasing Partial Transformations”, **A. Laradji and A. Umar**, Technical Report # 306, (June 2003).
3. “Techniques for a Priori Choice of Regularizing Parameters in Tikhonov Regularization,” **M. Iqbal**, Technical Report # 307, (June 2003).

Physics Department

1. “First Course in Quantum Mechanics ”, **Ibraheem Nasser and Afaf E. Abd El-Hady** in Arabic and Published by AL-Nahda Al-Masria, Cairo, 2003.

2. “An Introduction to Radiation Protection”, (written by Alan Martin and Samuel A. Harbison; 4th Edition 1996) Translated into Arabic by **M.I.Al Jarallah, and A.F. Salem** (2003).

Department of Management & Marketing

1. “Price sensitivity of Malay Consumers: An International Consumer Behavior Perspective”, Myers, C, **Sohail, Sadiq M.**, Ahmed, Z.U and Fauzi, W., Business Research Yearbook: Global Business Perspectives, Vol. X, 2003, pp 560- 565 (International Academy of Business Development, USA).
2. “Masalih Al-Abdan Wa Al-Anfuss (Arabic Text): Abou Zaid Al-Balkhi: A Pioneer Psychologist” **Dr. Mustafa Achoui and Malik Badri** (King Faisal Center for Research and Islamic Studies, Riyadh, 2003).
3. “Introduction to Modern Psychology, 2nd Edition, by **Dr. Mustafa Achoui**, University Publications Office, Algeria.

Information & Computer Science

1. “Outline Representation of Fonts using Genetic Approach, *Advances in Soft Computing: Engineering Design and Manufacturing*”, **Sarfraz, M.** Eds.: Benitez, J. M., Cordon, O., Hoffmann, F., and Roy, R., Springer, 109 - 118., (ISBN: 1-85233-755-9).
2. “Special Issue on Internet Computing”, **Sarfraz, M., Salah, K., and Ahmed, M. (Guest Editors)** International Journal of Information Sciences, Elsevier Science Inc., Vol. 150(3-4), 2003.
3. “The Proceedings of IEEE International Conference on Geometric Modeling and Graphics – GMAG’2003-UK, Editor: **M. Sarfraz**, IEEE Computer Society, USA (2003).

11. TECHNICAL REPORTS

College of Engineering Sciences

Civil Engineering

1. “Diagnostic Evaluation and Repair of Deteriorated Concrete Structures in Saudi Arabia”, 3rd Progress Report, PI, KACST, AR-9-066 – Part-II.
2. “Corrosion Resistance of Fusion-Bonded Epoxy-coated Bars in Chloride-Contaminated Concrete”, **Al-Amoudi, O.S.B., et al.**, Final Report, Project No. SABIC/99-12, Deanship of Scientific Research, KFUPM, 2003.
3. “Geological Hazards and Soil Stabilization of the Sabkhas in Yanbu, Rabigh and Al-Qunfudhah”, **Sabtain, A.A., Al-Amoudi, O.S.B. and Ghazal, M.M.**, 4th Progress Report, Project No. 207/419, Scientific Research Council, King Abdulaziz University, Jeddah, 2003.
4. “Corrosion Research”, Project No. CER 2209, submitted to the Royal Commission for Jubail and Yanbu, Jubail, September, 2003.
5. “A Study to Improve SABIC Polymers for the Performance Modification of Saudi-Asphalt Binders”, **Al-Abdul Wahhab, H.I. et al.**, Progress Report No. 1, Saudi Basic Industries Corporation (SABIC), November 2003.
6. “Development of an Improved Protection System for CCP Construction”, (CER2264) submitted to Ameron, October 15, 2003.

Electrical Engineering

1. “System and Apparatus for Designing and Producing Signaling Waveforms for DS-CDMA Communication, **M.A. Landolsi**, U.S. Patent Number 6,570,842, issued May 27, 2003.
2. “Automatic Text Recognition: A Need in Arabization,” **A. Zidouri and M. Sarfraz**, Technical Report for a Research Project, December 2003.
3. “Multiobjective Environmental/Economic Power Dispatch Using EVolutionary Algorithms,” **M.A. Abido**, Final Report, KFUPM Project FT/2001-19, October, 2003.
4. “Environmental Effect on Polymer Insulator Properties,” **I.O. Habiballah**, 1st Progress Report, CER 2254 Saudi Electric Company (SEC), Riyadh, July 2003.

5. “Unbalance: Power Quality Issues, Related Standard and Mitigation Techniques: Effect of Unbalanced Voltage on End Use Equipment Performance,” **I.O. Habiballah**, 1st Progress Report, CER 2256, SEC, Riyadh, July 2003.
6. “Electric and magnetic Field Guidelines Evaluation and Magnetic Field Exposure for Live-Line Workers,” **I.O. Habiballah**, 1st Progress Report, CER 2260, SEC, Riyadh, July 2003.
7. “Voltage Dip Compatibility Levels of ESKOM Criterion: New Perspectives,” **I.O. Habiballah**, Final Report, Research Committee, KFUPM, September 2003.
8. “Design of an Analog Signal Processor in CMOS Technology,” **M.T. Abuelma’atti and M.K. Al-Absi**, KACST Project No. 06-21-AT, December, 2003.

Aerospace Engineering Department

1. “Velocity Field Measurements in a Pickup Truck Model”, **Abdullah M. Al-Garni and L. P. Bernal**, *Report no. N002139-03*, Department of Aerospace Engineering, University of Michigan, 2003.
2. “Measurements of Cross-Flow Velocity Field in the Near Wake of a Pickup Truck”, **Abdullah M. Al-Garni and L. P. Bernal**, *PIV. Report no. N002139-04*, Department of Aerospace Engineering, University of Michigan, 2003.
3. “Experimental Investigation of the Near Wake of a Sport Utility Vehicle”, **Abdullah M. Al-Garni and L. P. Bernal**, *Report no. N002139-05*, Department of Aerospace Engineering, University of Michigan, 2003.

College of Sciences

Chemistry Department

1. “Waste Plastics-Recovery and Depolymerization With Petroleum Residue”, **Mohammad Farhat Ali**, Syed H. H. Redhwi, and **Mohammad Nahid Siddiqui**, Final Report KACST AR-18-22, September 2003.
2. “The Catalytic Conversion Of Alkenes Into Aldehydes And Acetals Via Hydroformylation And Acetalization Reactions Using Heteropolyacids As Catalysts”, **Dr. B. El Ali, Prof. M. El-Faer, Prof. A. Al-Arfaj, Dr. M. Fettouhi**, Final Report for KACST Project AR-18-15.
3. CHEM331, Modern Inorganic Chemistry (A required course for BS in Chemistry and Industrial Chemistry).
4. CHEM331, Inorganic Laboratory (A required course for BS in Chemistry and Industrial Chemistry).
5. Lab Safety (A short course covering General Lab Safety).

Earth Sciences Department

1. Mapping Groundwater Surface Using GPR and Geostatistical Methods", **Makkawi, M. and A. Al-Shuhail**, Final Report for Grant # ARI-017, Office of the Vice Rector for Applied Research, KFUPM, 2003. 77p.

Mathematics Department

1. "Applied Functional Analysis: Numerical Methods, Wavelet Methods, Image Processing", **A.H. Siddiqi**, Marcel Dekker, New York, 2003.

12. LECTURES AND SEMINARS GIVEN BY UNIVERSITY FACULTY

Civil Engineering Department

1. Speaker : Dr. O.S.B. Al-Amoudi
Topic : Long-Term Monitoring of FBE Coated Rebars in Contaminated concrete
Date : October 2003
(presented at the 2003 Materials Engineering and Corrosion Control Technical Exchange Meeting, Saudi ARAMCO, Dhahran).
2. Speaker : Dr. A. H. Al-Gadhib
Topic : Simulation of the EVol.ved Physio-Chemical Damage in Concrete Structures
Date : 30.09.2003
3. Speaker : Dr. M. H. Baluch
Topic : Influence of Environmental Variables & Mix Design on Moisture Transport in Concrete
Date : 28.10.2003
4. Speaker : Mr. Juned Laiq Syed
Topic : Risk and Hydraulic Reliability analysis of Water Distribution System (MS Thesis Defense)
Date : 04.11.2003
5. **Speaker : Dr. Mohammad Ali Al-Sughaiyer**
Topic : Effectiveness of Road Safety Education in Reducing Traffic Accidents
Date : 02.12.2003
6. Speaker : Mr. Salman Zafar
Topic : Influence of Temperature & Wind on Moisture in Cementitious Materials (MS Thesis Defense)
Date : 09.12.2003
7. **Speaker : Mr. Syed Asif Raza**
Topic : Hot Weather Concreting – Problems, Effect and Precaution (MS Thesis Defense)
Date: 16.12.2003
8. Speaker: : Mr. Sayed Imran Quadri
Topic : Soil and Site Improvement Technique
Date : 16.12.2003
9. Speaker : Mr. Adel Wannanah
Topic : Effect of Micro Silica on durability of Concrete

Date : 23.12.2003

10. Speaker: : Mr. Jaffer Mohiuddin

Topic : Silica Fume and Effect on Concrete

Date : 23.12.2003

11. Speaker : Mr. Gazi Abdul Muqtadir
Topic : Self-Compacting Concrete and Its Advantages
Date : 30.12.2003

12. Speaker : Mr. Sajeed Farouqi
Topic : Electrochemical Treatment of Waste Water
Date : 30.12.2003

Electrical Engineering

1. Speaker : M. Kousa
Title : ADSL: WHAT? WHY? HOW? and WHEN? at KFUPM?
Date : September, 23, 2003

2. Speaker : Representative from RTDS Technology
Title : Real-time Digital Simulator
Date : September 30, 2003

3. Speaker : Ali Al-Muqaibel
Title : UWB Communications...Does it work?...Of course it works!
Date : October 7, 2003

4. Speaker : I.O. Habiballah
Title : Voltage Dip Compatibility Levels of ESKOM
Criterion: New Perspectives
Date : October 14, 2003

5. Speaker : Representative from Abdel Hadi Abdullah Al Qahtani and Sons Co.
Title : Presentation/Demo for the GE-Multi-line Brand Portable Power Quality Meter (PPQM).
Date : October 18, 2003

6. Speaker : Zeini J. Saati
Title : The Computer Performance Equation Framework for a Deep Understanding of Computer Concepts and Design
Date : October 28, 2003

7. Speaker : I. El-Amin
Title : Detection of High Impedance Faults Using Artificial Neural Networks

- | | | | |
|-----|---------|---|--------------------------------------------------------------------------|
| | Date | : | November 4, 2003 |
| 8. | Speaker | : | M. T. Abuelma'atti |
| | Title | : | Is analog circuit design dead? |
| | Date | : | December 9, 2003 |
| 9. | Speaker | : | I. Sheikh |
| | Title | : | Microstrip Stacked Patch Antenna |
| | Date | : | Dec. 30, 2003 |
| 10. | Speaker | : | Salah Al-Buraiky |
| | Title | : | Automated Arabic Sign Language Recognition
Using An Instrument Glove. |
| | Date | : | Jan. 06, 2004 |

Mechanical Engineering

- | | | | |
|----|---------|---|----------------------------------------------------------------------------------------------------|
| 1. | Speaker | : | Prof. Bekir Yilbas |
| | Topic | : | Laser Machining Applications |
| | Date | : | Oct. 07, 2003 |
| 2. | Speaker | : | Dr. M.A. Antar |
| | Topic | : | Some Experience with Developing Online Heat Transfer
Course |
| | Date | : | Oct. 14, 2003 |
| 3. | Speaker | : | Mr. Ali al-Shurafa |
| | Topic | : | Influence of Rotor Location and Unbalance on Flow-
Induced Vibrations for a Rotating System |
| | Date | : | Oct. 21, 2003 |
| 4. | Speaker | : | Mr. Mousa Al-Saidi |
| | Topic | : | Effect of Lubricating Oil Pressure of Fluid-Film Bearings
on the Stability of a Rotating System |
| | Date | : | October 28, 03 |
| 5. | Speaker | : | Mr. Syed Abid Hussain |
| | Topic | : | Cooling Load Estimation Procedure : Basic Concepts and
Introduction to Carrier Software Package |
| | Date | : | November 11, 03 |
| 6. | Speaker | : | Mr. Sayyad Zahid Qamar |
| | Topic | : | Modeling and analysis of Extrusion Pressure and Die Life
for Complex Aluminum Profiles |
| | Date | : | Dec. 02, 03 |
| 7. | Speaker | : | Mr. Hassan Khurshid |
| | Topic | : | Bolted joint analysis using three-dimensional finite |

element modeling
Date : Dec. 09, 03

Aerospace Engineering

1. Speaker : Dr. Ahmed Z. Al-Garni
Topic : Aerospace Plane Cooling
Date : 21.10.2003
2. Speaker : Dr. F. Saeed
Topic : Multi-Point Inverse Airfoil Design
Date : 09.12.2003
3. Speaker : Dr. Ahmed Z. Al-Garni
Topic : Space Sciences
Date : 10-12-2003
(presented at American University in Sharjah, UAE)
4. Speaker : Mr. Mueyyet Tozan
Topic : Management of Corrosion in Military Environment
Date : 30.12.2003

College of Sciences

Chemistry Department

1. Speaker : Dr. Zaki S. Seddigi
Title : Fact or Myth? The Ideal Work Environment
Date : September 2003
2. Speaker : Dr. Ian Forristal
Title : An Overview of Sci-Finder: A Powerful tool for Multi-Disciplinary Research
Date : 13 October 2003
3. Speaker : Dr. Ian Forristal
Title : Promoting Use of the Library: A Faculty Perspective
Date : October 14 2003

Earth Sciences Department

1. Speaker : Dr. G. Korvin
Title : Ibn Khaldun's Concept of *asabiya* and its Role in the Mathematical Theory of History
Date : September 20, 2003 (Physics Tea Seminar)
2. Speaker : Dr. A. Abu-Khodair
Title : Gravity and Magnetic Methods: Re-emergence of Old

- | | | | |
|----|---------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | Date | : | Technologies
September 30, 2003 |
| 3. | Speaker | : | Dr. Z. Ahmed |
| | Title | : | The Yanbu Suture |
| | Date | : | October 14, 2003 |
| 4. | Speaker | : | Dr. G. Korvin |
| | Title | : | Units, Dimensions, Order of Magnitudes, Scaling, Π -Theorem |
| | Date | : | October 28, 2003 (Math. Education Seminar) |
| 5. | Speaker | : | Dr. Z. Ahmed |
| | Title | : | Chemistry of the Ophiolitic Rocks of Saudi Arabia |
| | Date | : | November 11, 2003 (Chemistry Dept.) |
| 6. | Speaker | : | Dr. M. Makkawi |
| | Title | : | Utilization of new technologies for the right environmental decision-making (In Arabic). Presented to the President, Presidency of Meteorology and Environmental Protection (PME) |
| | Date | : | April 14, 2003 |
| 7. | Speaker | : | Dr. A. Abu-Khudair |
| | Title | : | The Environment: An Issue We Cannot Delay |
| | Date | : | December 29, 2003. |

Mathematics Department

Invited Lectures/Seminars:

1. "Acoustic Waves in a Perturbed Ocean", **F.D. Zaman**, KAU, November, 2003.
2. "Extended Beta Distribution with Applications at Probability and Partial Differential Equations in Applied Mathematics", **M. Aslam Chaudhry**, University of Minnesota, Minneapolis, USA, July 21 – August 1, 2003.
3. "Fast Algorithm for Variational Inequalities Arising from High Temperature Super Conductors" International Silk Road Conference, **A.H. Siddiqi**, Tashkent, Uzbekistan, September 30-October 3, 2003.
4. "Variational Inequalities Arising in Superconductivity", **A.H. Siddiqi**, 4th International Congress of International Soc. Of Anal., its Appl. & Comp. (ISSAC), Toronto, Canada. August 11-16, 2003.

5. "Numerical Simulation of Variational and Quasi-Variational Inequalities Modeling Type-II superconductors." Conference Ulm University, Germany, **A.H. Siddiqi**, July 15-15, 2003.
6. "Mathematical Modeling of High Temperature Super Conductors ICTP", Trieste, Italy, **A.H. Siddiqi**, July 28-28, 2003.
7. "Numerical Simulation of Bean and Kim Model of Superconductivity, **A.H. Siddiqi**, 5th International Congress of Industrial and Applied of Mathematics, Sydney, Australia, July 7-11, 2003.
8. "Applications of Wavelets in Real World problems", **A.H. Siddiqi**, at Physics Department (KFUPM), December 21, 2003.

Lecturers/Seminars by Math Faculty:

1.	Speaker Title Date	: Dr. M. Tahir Mustafa : Defect Detection Using Smoothing Splines : Sunday, October 5, 2003
2.	Speaker Title Date	: Prof. Haydar Akca : Mathematical Modeling, Neural Networks and Applications : Sunday, October 12, 2003
3.	Speaker Title Date	: Prof. Abul Hasan Siddiqi : Relevance of Wavelet and Fractal Methods in Real World Problems : Sunday, October 19, 2003
4.	Speaker Title Date	: Prof. Haydar Akca : Discrete Counterparts of Continuous-time Additive Hopfield-type Neural Networks with Impulses : Sunday, October 26, 2003
5.	Speaker Title Date	: Dr. A.B. Thaheem : Completely Positive Maps on von Neumann Algebras : Sunday, November 2, 2003
6.	Speaker Title Date	: Dr. M. El-Gebeily : A Weak Formulation of Singular Differential Operators in Spaces with Minimal Differentiability : Sunday, December 07, 2003
7.	Speaker Title Date	: Prof. F.D. Zaman : Perturbation Technique in Wave Propagation Problem : Sunday, December 14, 2003

Math Education Seminars

1.	Speaker Title Date	: Dr. A. Shawky Ibrahim : Math 001 Then Plain Sailing : Tuesday, September 30, 2003
2.	Speaker Title Date	: Dr. Mohamed El-Gebeily : Grafix with Excel II : Tuesday, October 14, 2003
3.	Speaker	: Dr. Hasan Azad

	Title	:	Some Issues in Calculus
	Date	:	Tuesday, October 21, 2003
4	Speaker		Dr. Gabor Korvin (Earth Sciences Dept.)
	Title		Units, Dimensions, Order of Magnitudes, Scaling, Pi-Theorem
	Date		Tuesday, October 28, 2003
5.	Speaker	:	Dr. Adnan A. Al-Shakhs
	Title	:	Math Education in School (Experience & Observations)
	Date	:	Tuesday, November 11, 2003

Physics Department

1. Speaker : Harry Mavromatis
 Topic : “Some New Mathematical Results Obtained Measuring Closure”
 Date : Sept. 21 2003

2. Speaker : Nabil Maalej
 Topic : “Quality Assurance in X-ray Imaging”
 Date : Sept. 28, 2003

3. Speaker : Salim Messoudi (Math Dept.)
 Topic : “On wave propagation”
 Date : 5 Oct.2003

4. Speaker : Mohammad Al-Kuhaili
 Topic : “Thin Film Gas Sensors”
 Date : 12 Oct. 2003

5. Speaker : Faouzi Khene (RI, Center for Petroleum & Minerals)
 Topic : “Wavelets in Engineering”
 Date : 26 Oct. 03

6. Speaker : Abdulaziz Al-Jalal
 Topic : “Coherent light and vibrating films”
 Date : 4 Nov. 2003

7. Speaker : Mohammad Al Jarallah
 Topic : “Indoor radon survey in Nine Saudi Arabian Cities”
 Date : Sunday, 9 November 2003.

8. Speaker : Abdelmonem/Al Haidari* (* on Deputation to R & D Ministry of Defense)
 Topic : “J-Matrix Method of scattering”
 Date : 30 Nov. 2003

9. Speaker : Mahmoud Nagadi
 Topic : “New Methods for Teaching Physics”
 Date : 9-10 Dec. 2003 (at King Khaled University in Abha during 1st meeting of Saudi Physical Society.)

10. Speaker : Zain Yamani
 Topic : “Industry Oriented Laser Research at KFUPM”
 Date : 9-10 Dec. 2003 (at King Khaled University in Abha during 1st meeting of Saudi Physical Society.)

10. Speaker : Abul Hassan Siddiqui
 Topic : “Application of wavelets in real world problems”

- Date : 21 Dec. 2003
11. Speaker : Akhtar Abbas Naqvi
 Topic : "Search for more efficient neutron sources for the KFUPM PGNA setup"
 Date : 28 Dec. 2003
12. Speaker : Mohammad Al Jarallah
 Topic : "Nuclei and the Hidden Nuclear Energy" Public Lecture at KFUPM
 Date : Sunday, 28 Dec. 2003.

Architecture Department

1. Mechanical Engineering at KFUPM: Safety Day Talk on lab safety an Open Forum at Bldg # 24 on May 15,2003.
2. Laboratory Safety Seminar with ARAMCO at Bldg # 22 Auditorium, Lead Speaker June 8, 2003.
3. Designing Buildings for Safety of Occupants at CED Seminar Bldg # 19 Forum December 15, 2003.

ICS 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
3. Speaker : Mr. Syed Nazim Nawaz
 Title : Offline Arabic Character Recognition System
 Date : 02 - 06 - 2003
4. Speaker : Mr. Mohammed Jameel Ahmed
 Title : License Plate Recognition System
 Date : 03 - 06 - 2003
5. Speaker : Dr. K. Salah
 Title : Analysis of the Internet Worm of August 2003
 Date : 30 - 09 - 2003
6. Speaker : Syed Adnan Yusuf
 Title : Offline Unconstrained Arabic Handwritten Numeral Recognition

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|-----|---------|---|----------------------------------------------------------------------|
| | Date | : | 21 - 10 - 2003 |
| 7. | Speaker | : | Awes Ahmed |
| | Title | : | Software Architecture and Stability |
| | Date | : | 2 - 12 - 2003 |
| 8. | Speaker | : | A. A. Mujeeb |
| | Title | : | Object Representation and recognition in Shape Space |
| | Date | : | 16 - 12 - 2003 |
| 9. | Speaker | : | Humayun Baig Meerja |
| | Title | : | Offline Arabic Character Recognition |
| | Date | : | 23 - 12 - 2003 |
| 10. | Speaker | : | Mr. Khaled Adas, Intel Corporation, Saudi Arabia, GM |
| | Title | : | Latest Technology from Intel Corporation |
| | Date | : | 28 - 12 - 2003 |
| 11. | Speaker | : | Rahman, Quazi Abidur |
| | Title | : | Performance Analysis of some Coloring Algorithms on Trapezoid Graphs |
| | Date | : | 30 - 12 - 2003 |

Systems Engineering

- OFFERED BY OUTSIDE/INVITED SPEAKERS:

- | | | |
|----|----------|------------------------------------------------------------------------|
| 1. | Speaker: | Dr. Aymen Kayal
(Saudi Org. for Industrial Estates and Tech. Zones) |
| | Topic: | SE-100 Course: "Introduction to Technology" |
| | Date: | November 01, 2003 |

- OFFERED BY DEPT. FACULTY:

- | | | |
|----|----------|-------------------------------------------------------------------------------------------------------------------------|
| 1. | Speaker: | Dr. Hesham L. Alfares |
| | Topic: | "Compressed Workweek Scheduling with Days-Off
Consecutivity, Weekend-Off Frequency, and Work Stretch
Constraints" |
| | Date: | September 23, 2003 |

2. Speaker: Prof. Mohamed Ben-Daya
Topic: "Integrated Manufacturer-Retailer Supply Chain Models"
Date: September 30, 2003
3. Speaker: Prof. Abdul Raouf S. I.
Topic: "Physical Assets, Safety Management: An Integrated Approach"
Date: October 01, 2003
4. Speaker: Mohammed Haseebuddin (SE Research Asst.)
Topic: 'Internal Model Control for Non-Linear Dynamics Plants Using U-Model'
Date: October 21, 2003
5. Speaker: Wael Ibrahim Hajailan (Grad. Student / Part-Time)
Topic: "An Optimal Production Run For An Imperfect Production With Allowable Shortages and Time-Varying Percentage Defective Rate"
Date: December 23, 2003

13. SEMINARS GIVEN BY OUTSIDE SPEAKERS

Invited Presentations by Electrical Engineering Department Faculty

1. "Wireless Communications: A ReVol.ution on the Horizon," **Dr. A.U. Sheikh**, Guest Speaker, at INMIC 2003, December 2003, Islamabad, Pakistan.
2. "Academic Perspectives in Wireless Communications and R&D Initiatives, **Dr. A.U. Sheikh**, Panel Discussion, Aramco 2003, October 2003.

College of Sciences

Chemistry Department

1. Speaker : Dr. Abdullah Al-Sunaidi
Title :Simulation of phase transitions in polymer liquidcrystals
Date : 21 October 2003
2. Speaker : Dr. Maan Kausa
Title : The ABC of ADSL
Date : 28 October 2003
3. Speaker : Dr. Mohammed Atiquallah
Title :Hydrogen Responsiveness and Surface Chemistry of Supported Metallocene Catalyst and the related Polyolefin Application
Date : 4 November 2003
4. Speaker : Dr. Zulfiqar Ahmed
Title :Chemistry of the Ophiolitic Rocks of Saudi Arabia
Date : 11 November 2003
5. Speaker :Dr. Mohammad Aslam Khan
Title :Decoking of Coked Catalysts in a Glow Discharge
Date : 16 December 2003

Earth Sciences Department

1. Speaker : Dr. Z.S. Seddigi (Chem. Dept.)
Title : The Ideal Work Environment: Fact or Myth?"
Date : September 23, 2003
2. Speaker : Dr. Ahmed Badruzzaman
(Chevron Texaco Energy Techn., San Ramon, CA, USA)
Title : Geologic Application of Nuclear logging Technology
(Jointly with RI Ctr. Petr. Mins. and Dept. Petr. Eng.)
Date : December 16, 2003

Mathematics Department

Lectures/Seminars by outside speakers

1.	Speaker	:	Dr. Riazuddin (National Center for Physics, Quid-I-Azam, Univ, Pakistan.
	Title	:	The Method of Characteristics in Fluid Dynamics and in the Renormalization Group Equation in Quantum Fluid Theory.
	Date	:	Sunday, September 28, 2003

Lecture Series in Mathematics during the Term (031)

Speaker	:	Prof. A.H. Siddiqi
Title	:	On Wavelets and Applications

Lecture Series in Mathematics (November 22 – December 23, 2003)

by: Prof. Jan Pieter Hogendijk alongwith Mr. Eelco Nederkorn, Mathematical Institute (University of Utrecht, Utrecht, The Netherlands) on
“TREASURES OF THE ISLAMIC SCIENTIFIC TRADITION”

1.	Speaker	:	Prof. Jan Pieter Hogendijk
	Title	:	Conic Sections and their Applications in the Medieval Islamic Tradition
	Date	:	Tuesday, December 02, 2003
2.	Speaker	:	Prof. Jan Pieter Hogendijk
	Title	:	The Development of Islamic Astronomy in its Historical Context
	Date	:	Sunday, December 07, 2003
3.	Speaker	:	Prof. Jan Pieter Hogendijk
	Title	:	The Determination of and the sine of 1 Degrees to 16 Decimal by Jamshjid Al-Kashi
	Date	:	Tuesday, December 9, 2003
4.	Speaker	:	Prof. Jan Pieter Hogendijk
	Title	:	The Mathematical Methodology of Medieval Islamic Astronomy
	Date	:	Sunday, December 14, 2004
5.	Speaker	:	Prof. Jan Pieter Hogendijk
	Title	:	The Influence of Medieval Islamic Mathematics and Astronomy on the Development of European Science
	Date	:	Tuesday, December 16, 2003
6.	Speaker	:	Prof. Jan Pieter Hogendijk
	Title	:	A Recently Discovered Islamic Mathematical Instrument for the Determination of the Qibla
	Date	:	Sunday, December 21, 2003
7.	Speaker	:	Mr. Eelco Nederkorn
	Title	:	Mysteries of Medieval Islamic Mosaics
	Date	:	Sunday, December 07, 2003 (<i>Group 1 & 2</i>)
9.	Speaker	:	Mr. Eelco Nederkorn
	Title	:	The Astrolabe
	Date	:	Sunday, December 14, 2003 (<i>Group 1 & 2</i>)

10.	Speaker	:	Mr. Eelco Nederkorn
	Title	:	The Astrolabe
	Date	:	Sunday, December 14, 2003 (<i>Group 2</i>)
11.	Speaker	:	Mr. Eelco Nederkorn
	Title	:	The Astrolabe
	Date	:	Sunday, December 21, 2003 (<i>Group 3 & 4</i>)

Physics Department

1. Speaker : Riazuddin, (National Center for Physics, Pakistan)
Topic : "New questions about matter, space, time and universe"
Date : 30 Sept. 2003
2. Speaker : W. Greiner, (The Institute of Theoretical Physics, Germany)
Topic : "Hot & Dense Elementary Matter: The search for the quark-gluon plasma"
Date : 21 Oct. 2003
3. Speaker : J.P. Hogendijk, (University UTRECHT, Holland)
Topic : "The mathematical methodology of medieval Islamic astronomy"
Date : 14 Dec. 2003
4. Speaker : J.P. Hogendijk, (University UTRECHT, Holland)
Topic : "The development of Islamic astronomy in its historical context"
Date : 7 Dec. 2003
5. Speaker : A. A. Bahgat, (Al-Azhar University, Egypt)
Topic : "From Superconductivity to Ferroelectricity"
Date : 30 Dec. 2003

Computer Engineering

1. Speaker : Itrat Rasool Quadri
Title : Voice over MPLS
Date : 14/10/2003
2. Speaker : Mohammad Abdur Razzaque
Title : Study of Different Downlink Scheduling Algorithms for the CDMA Data Networks
Date : 9/12/2003