

BITScan

Semester Notes

Issue 6



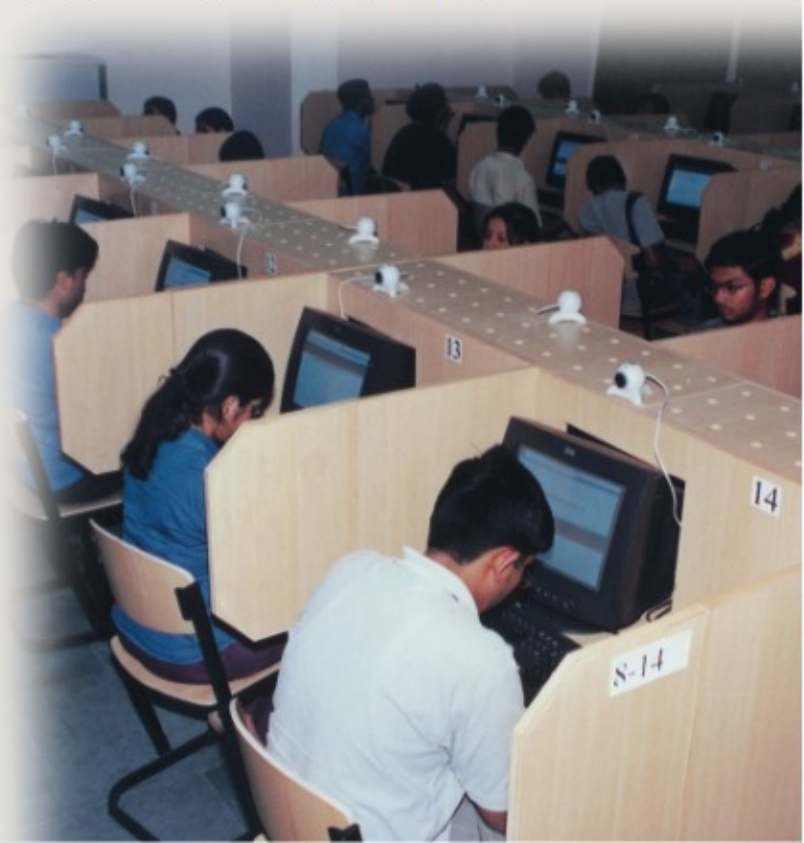
**BIRLA INSTITUTE OF TECHNOLOGY
AND SCIENCE**

Pilani - 333031
Rajasthan

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INSIDE

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A QUANTUM LEAP

For the first time in India, and in the history of BITS, BITS Pilani conducted an all India computer-based online admission test known as BITSAT (BITS Admission Test) for admitting students to all its integrated first degree programmes offered at Pilani and Goa campuses. A total of 48,235 candidates, including 11,611 girls from all over the country took the three- hour test.

BITSAT 2005 Highlights

- Computer-based objective type online test
- For Admission to all First Degree Programmes of Pilani and Goa Campuses
- First time in the history of BITS
- First of its kind in India
- Conducted from April 10 to June 10
- 14 centers across India
- 48,235 Students Competed for 1400 Seats
- Use of Secure High-end Technology
- Choice of Date, Time and Center for Candidates
- Immediate Result on Computer Screen
- Eligibility criteria for admission :
80% aggregate in Maths, Physics and Chemistry with a minimum of 60% in each (in plus 2 exam)
- Direct Admission to Board Toppers irrespective of their BITSAT score

The Second Semester 2004-2005 also witnessed two academic festivals, several seminars and workshops and visits by many dignitaries.

The Institute hosted several seminars and training programmes during the semester. Many faculty members paid visits abroad to

carry out their academic agendas. Students and faculty could enrich their learning experience with the innovative ideas presented by distinguished visitors in their talks.

INTERFACE 2005 the Annual Management Fest with the theme '*Phoenix: Heralding a new era*' was held in February. This festival saw the participation of a lot of outstation candidates and was a great success. With the theme "Inspiring Innovation", the Academic Fest '*APOGEE-2005*' witnessed the spectacular projects presented by the students of various disciplines making the festival an enlightening experience for both BITSians and visitors alike. On the cultural side, SPICMACAY presented several acclaimed artists, and In Bloom, the newly introduced Inter-hostel cultural evening witnessed the enthusiastic participation of a large number of BITSians.

BITSUNAMI, a major initiative taken in the direction of restoring and sustaining two Tsunami affected villages in Tamil Nadu by the BITS Alumni and the Practice School students of BITS deserves special mention.

ACADEMIA

A Confluence of Ideas

International Symposium-cum Workshop on Recent Advances in Drug Design and Drug Delivery Systems

The Pharmacy Group of the institute conducted an *International Workshop and a Symposium on Recent Advances in Drug Design and Drug Delivery System* during 24-27 February 2005.

With the main objective of holding deliberations on the recent trends in drug design, pharmaceuticals, polymer science, cell and molecular biology, medicine and pharmaceutical technology, the events attracted



many expert participants and resource personnel from India , USA and Canada.

International Symposium on Public Health

Biological Sciences and Pharmacy Group of BITS-Pilani in collaboration with Uniformed Services University of Health Science, Bethesda organized *International Symposium on Public Health Education-Indian Scenario and Challenges* during 9-11 April, 2005. The main focus of the symposium was on the need to impart quality education in the area of public health, curriculum design and course development. Some of the key participants were Dr. Altaf Lal, Science Attaché, DHHS Representative for South Asia ,US embassy



and several Professors from USUHS, Bethesda Maryland, USA: Prof. Radha K Maheshwari, Professor of Pathology, Prof. Emanuel Cassimatis, Professor and Associate Dean Col. (Dr) Martha Turner, Dr. Rob Lipnik, Professor Dr. Mylene Huyun, Professor, Dr. Anoop Singh, Research Assistant, Dr. Richard Coran, Professor, and Dr. Thomas Stocker, Professor.

XIII All India Input-Output Research Association (IORA) Conference

Economics & Finance Group jointly with Management Group organized *XIII All India Input-Output Research Association Conference* during 22 - 24 April 2005.



Inaugurated by Dr M.Govinda Rao, Director, National Institute of Public Finance and Theory, the conference covered a wide gamut of issues related to economic development such as structural changes in Indian economy, effects of globalisation and liberalization on trade, forex reserves, foreign direct investment; productivity in banking sector, etc. Dr. R Bhardwaj, President of the Association and several other experts participated and deliberated at the conference.

Management Development Program (MDP)

The Management Group and Economics & Finance Group of BITS, Pilani conducted a



one-week *Management Development program on Managerial Excellence and Effective Branch Management* during 7-12 February 2005 for the Senior Managers from Bank of Rajasthan.

The main objective of the programme was to prepare high –potential branch managers and strategically positioning their branches to effectively serve their customer base. Several important topics such as the changing role of branch managers, achieving excellence through quality, team building skills, conflict management, negotiation skills, creative problem solving, customer relationship management, customer complaint handling etc., were discussed during this programme.

Professional Skills Development Programme

A training programme was conducted for the junior executive trainees of Hindustan Zinc Limited, Udaipur during 21 February- 21 April 2005. BITS, Pilani has already organized two training programmes for the same organization earlier. This third one on *Professional Skills Development* provided its 50 participants the



necessary skills in the areas of Management, Business Communication and Computer Applications. Faculty from the respective groups provided instruction to the participants and also helped them the requisite skills during this 2-month long programme.

Workshop on Energy Saving in Steam Systems

Centre for Renewable Energy and Environmental Development (CREED), BITS Pilani and Thermax Babcock and Wilcox Limited, Pune, BITS Pilani, jointly organized a five-day workshop on *Energy Savings in Steam Systems* during 26-30 April 2005.



Meant for the engineers, consultants, researchers, faculty members from different industries/ institutions, the workshop laid emphasis on showing exactly where and how performance of steam systems can be improved. Discussions were held on *system sizing, pressure, steam quality, system safety, proper trap sizing and application, corrosion, maintenance and testing*. The workshop also included demonstrations on software such as *Steam System Assessment Tool (SSAT), Steam system Scoping Tool (SSST) and 3 E Plus for Insulation*.

Training Program on Earthquake Risk Management

The Ministry of Home Affairs, Government of India in collaboration with the Civil Engineering Group of BITS, Pilani conducted a six-week training program *National Program for capacity Building of Engineers in Earthquake Risk Management (NPCBEERM)* in two batches. Coordinated by Prof. Rajiv Gupta, The II Phase of this training programme for the second batch was completed during 9-21 May 2005.

National Science Day

Continuing its tradition, BITS celebrated *Science Day* on 28 February in honor of Sir C.V. Raman. The various Science Groups organized four popular lectures delivered by Dr. Sandeep Pokharia, Dr. Shibashish Chaudhury, Dr. Subhash Karbelkar and Dr. B.K. Mishra. Two quizzes – oral and written were conducted and prizes were awarded.

Distinguished Lectures at BITS, Pilani

Sl. No.	Guest Speaker	Affiliation	Topic
1	Prof.Miriam E. David	Professor, Keele University, U.K.	A feminist and Critical Perspective on Family-Education Partnerships for Gender Equality and Quality Based Education'
2	Swami Anubhavananda	Erudite Master of Vedanta	Application of Advaita Philosophy in Day-to-day Life
3	Prof Jayant M Modak	Professor & Chairman of Chemical Engineering Sciences, I.I.Sc. Bangalore	Optimal design of Bio-reactors
4	Prof G.L.Asawa	Professor of Civil Engineering, IIT Roorkee	Water Resources Management.
5	Mr. Satish Gupta	Chairman, BPO Frontline and founder Cradle Technologies, California, USA	Lessons from Disruptive Technology Enterprise
6	Mr.Jai Raj Gupta	CEO, World Cast Technologies (P)Ltd., New Delhi	What it Requires to be Successful
7	Ms Anita Sakuru	CEO Ken People , Hyderabad	Emerging Global Trends – Entrepreneurial Opportunities and Threats
8	Mr. K Vijay Rao	Vice Chairman, Epicenter Technologies Pvt. Ltd., Mumbai; Adjunct Professor BITS, Pilani	Corporate Venturing, Networking and Franchising
9	Dr Madhu Mehta	Chief Architect, Nirma labs - founder of Anadem Enterprises, ad	Entrepreneurial Initiatives in Nirma Lab
10	Mr.Venk Krishnan	CEO, Nuware Technology Corporation, New Jersey,USA	How to Lead an Entrepreneurial Venture
11	Mr Ravi Kuchimanchi	AID Jeevan Saathi, an NGO	AID Jeevan Saathi, an NGO Entrepreneurial Challenges in Rural Economy

Visits by Faculty- Enriching the Learning Experience

International Visits

Prof. R. N. Saha presented two research papers *Preparation of Nanoparticles Containing Imatinib Mesylate* and *Studies on Use of Combination of Non-ionic and Anionic Polymers in the Design of Controlled Release Formulations of Rifampicin and Isoniazid*. at the 32nd Controlled Release Society Annual Conference held during 18-22 June at Miami, USA and presented. Further, on invitation from University of Toronto, Toronto, Canada,



Prof.Saha visited the university for four days to discuss collaboration between the two institutes in different areas of pharmacy education and research.

Prof. A. K. Sarkar presented a paper on the *Application of Integrated Rural Accessibility Planning (IRAP) in Rajasthan (India)* at the Workshop on Community Participation in Transport Management organized by ITDG and NFG Latin America, Cajamarca, Peru during 4-7 April, 2005.



Prof. B.V.Babu visited Bahrain during 11-14 February 2005 for discussions on a consultancy project on feasibility study of Jalal Group at Bahrain (Middle East).

Prof S Gurunarayanan on invitation from Microsoft, USA, gave a presentation on the status of the Microsoft sponsored project on *Intelligent Water Management Systems* at the Research Faculty Summit held in Redmond, Washington during 17-20 July, 2005.

Prof. Rahul Banerjee attended the Research Faculty Summit held in Redmond, Washington during 17-20 July, 2005 on invitation from the Microsoft, USA. He had four meetings with the MSR researchers about continuation of the funding for currently operative research initiatives (like Project Grid-One) as well as possible research collaboration on Project BITS-WearComp and a new research initiative in the sphere of social computing involving some of the nearby towns and villages. This initiative is slated to begin after the first phase of Grid-One gets completed.

Dr. Rajneesh Sharma participated and presented research paper entitled *Diamond Like Carbon Films deposited at different substrate biases using a saddle field fast atom beam source at Materials Research*

Society (MRS) Spring Symposium held during 28 March - 1 April 2005 at San Francisco, CA, USA.

Prof. Nirupama Prakash delivered a lecture on *Ethnic, Social and Gender Conflicts in Indian Society* at the International Centre for Ethnic studies, Kandy, Sri Lanka and participated in the field work on post Tsunami



rehabilitation at Trincomalee, Sri Lanka during July 8-15, 2005.

Prof. Meenakshi Raman presented a paper on *Using News Media in ELT Classrooms* at the 39th Annual Convention of TESOL (Teachers of English to Speakers of Other Languages) held at San Antonio, Texas, USA during March 30- April 2, 2005.



She also visited the Centre for International Development and Conflict Management

(CIDCM), University of Maryland at College Park, Maryland, USA and discussed the details of the course on Conflict Management.

Dr. Sanjay Vashishtha worked on a project named *Asia Regional Research on Energy Environment and Climate III (ARRPEEC III)* at the Asian Institute of Technology (AIT), Bangkok, Thailand during 15 May – 15 July, 2005.

Dr. Anantha Naik Nagappa presented a paper on Surface Activity & Novel Drug Delivery Systems for Biotherapeutics at the Scientific Symposium organized by Drug Discovery & Development, Asia Pacific at Shangri-La Hotel, Singapore during 01-03 June 2005.

Dr. Motilal Dash presented a paper on *ICTs in Rajasthan: A Step Towards Reinforcing Rural Communities* at the IV International Rural Conference, Abingdon, VA, USA during 19-24 June, 2005.



He also gave a presentation on *Gyanganga- A Community Development Project by NSS-BITS Pilani* at George Washington University, organised by the Asha Members- Washington Chapter on 25 June, 2005.

Dr. S.B.Misra presented a paper *Consultancy Contours in Training and Development Intervention: Entrepreneurship*

in Orissa, India at the International Conference of Business & Economic Society



International (BESI), held Flagstaff, Arizona, USA, during 22-25 July, 2005.

Three research scholars from the Pharmacy Group presented research papers in the conferences held abroad:

P. Vijayapandi presented a paper on *Biphasic Effects of Losartan Potassium on Immobility in Mice* at Scientific Symposium organized by Drug Discovery & Development, Asia Pacific at Shangri-La Hotel, Singapore during 01-03 June 2005.

M. Snehalatha presented posters titled *Preparation and Characterization of Etoposide Loaded Nanoparticles* and *Design and Studies of Novel Ophthalmic Inserts for Extended Release of Gatifloxacin* at the 32nd Annual Meeting and Exposition conducted by Controlled Release Society in Florida, USA during 18-22 June 2005.



J. Vaigunda Ragavendran presented posters on "Neuropharmacology of new leads" at the 6th EMBL International Predoc Symposium hosted during 12-15 May 2005



by the PhD students of the Monterotondo outstation of the European Molecular Biology Laboratory (EMBL) in Rome, Italy in collaboration with the PhD students of the University of Rome.

Invited Lectures

Prof. Rahul Banerjee delivered Invited Lectures at IIT-Kanpur, during the International Conference on High Performance Computing workshop session on cutting-edge technologies in the areas of *IPv6 based Research Experiments and Wearable Computing Research*.

As a resource person, **Prof. Nirupama Prakash** delivered a talk on *Issues Related to Education of Children Belonging to Scheduled Castes and Scheduled Tribes* at the National Workshop to Evolve Research Designs Leading to Multicentric Studies organized by the Department of Educational Research and Policy Perspective, National Council of Educational Research & Training, New Delhi, during 28 February – 4 March 2005. She was also the resource person at the 12th Induction course at Uttaranchal Academy of Administration, Nanital on 10 June 2005.

As a resource person, **Prof. Meenakshi Raman** delivered a lecture on "Science Communication: An Art of Living" at the CSIR Programme on Faculty Training and Motivation organized during April 11-15, 2005 by CEERI, Pilani,

As the Member, Advisory Committee, **Prof. S.P.Gupta** delivered invited talks at 9th National Conference on Bioactive Heterocycles and Drug Discovery Paradigm held at Saurashtra University, Rajkot, during Jan.8-10, 2005 ; 4th Indo-US Workshop on Mathematical Chemistry, held at University of Pune during Jan. 8-12, 2005; A National Seminar on Biological Chemistry: Advancing Frontiers, Gorakhpur University during March 22-23, 2005.

Prof. Suman Kapur delivered two invited Lectures (i) *Biomarkers Integrated into Diagnosis and Drug Development Process* at DBT Brain Storming Workshop on Biomedical Sensors held at NPL, New Delhi during 27-28 April 2005 (ii) *Biomarkers at National Workshop on polymeric Sensors - 2005*" (NWPS – 2005) during 25 July- 06 August, 2005 sponsored by Department of Science and Technology, Government of India and Biosensor Society of India.

As a resource person **Dr. Sangeeta Sharma** delivered a lecture on *Research Reports* at the four-day National Workshop on Research Methods in Management and to write Research Cases with Special Reference to Agricultural Marketing at NIAAM, Jaipur during 16-19 March 2005. She also delivered a talk on *Rural Revolution through Advertising* in the National Seminar on Designing Strategies for Sustainable Competitive Advantage in Rural

and Agricultural Market at BIT, Jaipur on the 30 March 2005.

Dr. N. N. Sharma delivered a talk at Tata Institute of Fundamental Research, Mumbai on *Need for Experimental Investigation on Relation between Rigid and Non-Rigid Parameters in Nano-Domains* on 17 March 2005.

ACHIEVEMENTS

Ishan Shukla and Mayur Karthik, students of BITS, Pilani have brought laurels to their Institution by securing the second position in a fiercely contested **Microsoft Imagine Cup worldwide competition for computer-based short-film making**.



The final was held at Yokohama in Japan and Ishan and Mayur were awarded a cash prize of USD 4,000. Incidentally, from all over the world, only eight teams could make it to finals and, as a matter of pride, India was represented by BITS-Pilani. This year 17000 students from more than 90 countries competed in imagine cup making it world's largest and most inclusive student technology competition.

Five Pre-final year students of Chemical Engineering Group namely, **Mr. G. Vasu, Ms. Preety Clare Mathew, Mr. Jaspreet Singh N, Ms. Neelima Ch, Ms E. Sandhya** attended the **Industry Academia Interface** held as a part of PETROTECH-2005 (An International Conference) at Pragati Maidan, Delhi during 17-18 January, 2005.

The Honeywell Technology Solutions Labs held a contest **Freedom to Innovate-2004** as a part of its University Relations Programme. The contest was rolled out online, making it easier for colleges to enroll. Ten areas were identified for which solutions from the participating teams were sought.



With Prof.M.S.Dasgupta as the institute focal, a team 'Fracture' from BITS, Pilani with the students **Mr. B. Phani Kumar, Mr. VSSR Sanjay Raja**, under the guidance of **Mr. Pravin S Talan** participated in the contest.

A Database for Antibiotic Resistant Gene Online (ARGO) developed by Dr.Joy Scaria and Prof.S.K.Verma is hosted on the Apache Server, USA. This database (<http://www.argodb.org/>) is widely used by the scientific community and a research paper based on this database has been published

in the inaugural issue of a leading journal in Bioinformatics.

Prof. B.V. Babu is the Program Committee Member for several International Conferences: (GECCO-2005), Washington DC, USA; (MEI-2005), Texas, Austin, USA, (CCCT-2005), Texas, Austin, USA; (CIRAS-2005), National University of Singapore, Singapore; The 2nd Indian International Conference on Artificial Intelligence (IICAI-2005).

Dr. Nilashis Nandi is highly cited, the total current citation being **over 550** according to the ISI citation index.

Dr. N.N. Sharma has been placed on the Technical Advisory Committee of International Conference on Computational Intelligence, Robotics & Autonomous Systems, CIRAS-2005, organized by National University of Singapore.

Dr. S P Gupta is the Editor-in-Chief for the journals 'Current Medicinal Chemistry-Cardiovascular and Hematological Agents', 'Current Enzyme Inhibition', 'Current Computer-Aided Drug Design' and 'Current Bioinformatics' published by the Bentham Science Publishers, The Netherlands and U.S.A. He is the Guest Editor for two journals namely,Combinatorial Chemistry and High Throughput Screening (Bentham Science) and QSAR and Molecular Modeling Studies in Heterocyclic Drugs (Springer-Verlag, Heidelberg, Germany He is also member of the UGC Special Assistance Programme Committee, Chemistry Department, APS University, Rewa (M.P).

Significant Projects

The Pharmacy Group of BITS Pilani received several projects:

Under the project sponsored by IPCA Laboratories, Mumbai, the group has successfully designed **a novel controlled release tablet of Aceclofenac**, a non-steroidal anti-inflammatory drug, which is used for the management of arthritis, joint pains, analgesia and inflammatory diseases. The product has been launched in the market already. The product was **developed by Professor R.N.Saha and his research team**. The tablet is to be taken only once in a day, instead of twice a day for normal tablet, making better patient compliance.



The tablet can also be used as a postoperative analgesic. The product, designed based on bio-erodible matrix technology, will release the drug at constant rate for uniform availability over a period of time. It will maintain a constant and effective drug level with lesser side effects.

Received the Departmental Research Support Grant from the UGC under the Special Assistance Programme and funds for **Improvement of Infrastructure in Science and Technology** from DST for Rs. 35 lakhs

for which **Dr. R. N. Saha and Dr. R. Mahesh** are the coordinators.

Dr. A.N. Nagappa, Dr. D. Sriram and Dr. P. Yogeewari received research grants totaling to approximately Rs. 20 lakhs in the areas of **Pharmacology and New Drug Design and Development**.

Technology has been transferred in another project received by the Pharmacy Group from IPCA Lab. Ltd Mumbai and the **novel controlled release tablet of Nimesulide** will be released soon by the company. The same organization has given two more projects: Formulation of oral tablet of selective combination of drugs and Formulation of aqueous injection of selected analgesic drug.

Dr. Ram Kinkar Roy of Chemistry Group has been sanctioned a research grant of Rs.10.5 lakhs for his project **Development of New Methodology Using Density Functional Theory (DFT) Based Reactivity Descriptors to Predict the Regioselectivity of Large Chemical and Biological Systems** by the Department of Science and Technology, Government of India.

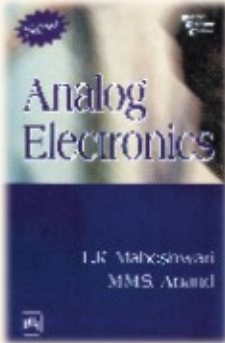
National Rural Roads Development Agency (NRRDA), Ministry of Rural Development, Govt. of India has sanctioned an amount of Rs. 23,00,000 to train 7 batches of 35 engineers working for **PMGSY (Pradhan Mantri Gram Sadak Yojna) programme**. These training programs, each six days long, will be held during August 2005 to March 2006 under the coordination of **Prof A.K.Sarkar**.

The National Rural Roads Development Agency, Ministry of Rural Development, Govt. of India has sanctioned Rs. 20,00,000 for the research project on **Rural Road Performance Study** to be carried out by **Prof A.K.Sarkar and Dr V. R. Vinayaka Rao** of the Civil Engineering Group.

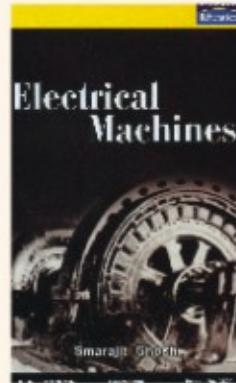
Faculty members from various disciplines acted as reviewers for books/ papers published in journals of national and international repute as listed below:

Sl.No.	Name	Discipline	Journal/Publisher
1	Prof.B.V.Babu	Chemical Engineering	International Journal of Energy Education Science and Technology , Research Journal of Chemistry and Environment.
2	Dr. Kailas L. Wasewar	Chemical Engineering	Chemical Engineering Science, Chemical and Biochemical Engineering Quarterly, Journal of Chemical Technology and Biotechnology.
3	Dr. Amiya Kumar Jana	Chemical Engineering	ISA Transactions, Chemical Engineering Science
4	Mr. H.K.Mohanta	Chemical Engineering	ICFAI Journal of Science and Technology
5	Dr. R. V. Ralegaonkar	Civil Engineering	International Journal of Renewable Energy, Elsevier Science
6	Dr. P.K.Gupta	Civil Engineering	Latin American Journal of Solids and Structures
7	Prof. K.Srinivasa Raju	Civil Engineering	The Water Resources Management Journal
8	Prof. Rajiv Gupta	Civil Engineering	The Journal of Integrated Waste Management, Science and Technology
9	Dr.Shamsher Singh	Civil Engineering	ACI Structural Journal
10	Prof.S.Gurunarayanan	Electrical and Electronics Engineering	Integration, the VLSI Journal
11	Dr.Rajneesh Sharma	Electrical and Electronics Engineering	Two Books by Oxford University Press (India)
12	Dr.R.C.Bansal	Electrical and Electronics Engineering	IEEE Transaction on Energy conversion,. IEEE Transaction on Industrial Electronics, Electric Power System Research
13	Dr. Pohekar S D	Mechanical Engineering	Energy-The International Journal, Elsevier Science
14	Dr. N.N. Sharma	Mechanical Engineering	IEEE Transaction on Systems, Man & Cybernatics, IEEE Transaction on Education
15	Dr.Mukesh Kumar Rohil	Computer Science	The Journal of Indian Society of Remote Sensing
16	Prof. Arya Kumar	Management	The Business Perspectives Journal
17	Prof. Suman kapur	Biological Sciences	Indian Journal of Clinical Biochemistry, Review Panel for Project submitted to DST, New Delhi.
18	Prof.S.P.Gupta	Chemistry	Indian Journal of Chemistry, CSIR, Delhi
19	Dr. N.Rajesh	Chemistry	ICFAI Journal of Science and Technology
20	Dr. Ramanand Rai	Chemistry	The Journal of Materials Research, Materials Research Society, USA
21	Dr.Nilashis Nandi	Chemistry	American Chemical Society Journal, Wiley Interscience Journals, The Israel Science Foundation
22	Dr. Mukesh Kumar	Mathematics	Springer-Verlag, U.S.A
23	Dr. Bimal Kumar Mishra	Mathematics	The ACCST Research Journal, The Mathematics Education
24	Prof. V.K.Chaubey	Physics	Journal of Scientific and Industrial Research

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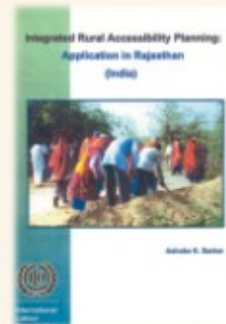
Analog Electronics,
Prentice Hall of India,
New Delhi, 2005,
L.K.Maheshwari and
M.M.S.Anand



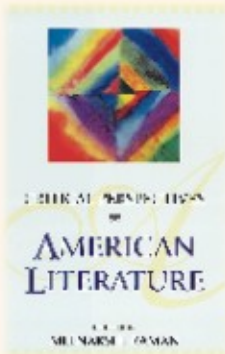
Electrical Machines,
Pearson Education,
Delhi, 2005, Smarajit
Ghosh



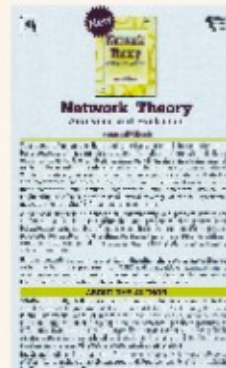
Communicating at Work,
Jain Brothers, New Delhi,
2005, Meenakshi Raman,
Sangeeta Sharma and
Binod Mishra



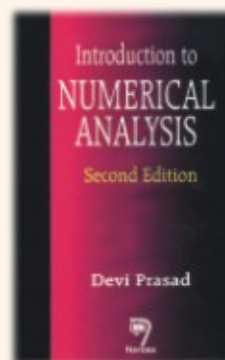
Integrated Rural
Accessibility Planning,
ILO, 2005, Ashoke
K.Sarkar



Critical Perspectives in
American Literature,
Atlantic Publishers, New
Delhi, 2005, Meenakshi
Raman



Network Theory, Prentice
Hall of India, New Delhi,
2005, Smarajit Ghosh



Numerical Analysis, Second Edition,
Narosa Publishing Home, Delhi,
2005, Devi Prasad

JOINING HANDS

Memoranda of Understanding

Sustaining its collaborative efforts, BITS signed several MOUs with Institutions in India and abroad:

- With HP Labs (India), Bangalore on 27 January 2005 to promote academic, educational and research interactions between the two institutions. Accordingly, BITS-Pilani would cooperate with select research activities at HP Labs primarily in the area of ICT for Emerging Markets.
- With HONEYWELL Software Technology Solutions Lab Pvt. Ltd., Bangalore on 03 February 2005 to foster collaboration between the two institutions in order to promote academic and research interactions.
- With CEERI, Pilani on 07 June 2005 regarding mutual cooperation in the field of research and academics in electronics for the benefit of both parties.
- With the Centre for Development and Advanced Computing(CDAC), Noida on 16 May 2005 to participate in the project Digital Library Mega Center sponsored by the Ministry of Communications and Information Technology and executed by CDAC. As per this MOU CDAC will digitize books, journals and magazines provided by BITS.
- With Microsoft Research Lab India Private Limited, New Delhi on 18 May 2005 to attract highly qualified students in India to undertake research work leading to PhD through Microsoft Research India PhD Fellowship Program.
- With the Information Sciences Institute of the University of Southern California on 17 May 2005 according to which the USC/ISI shall provide BITS access to the integrated circuit fabrication services acquired through third-party vendors (a process referred to as MOSIS).
- With the College of Engineering, Iowa State University of Science and Technology on 11 May 2005 to become partners in an educational and scientific cooperation programme that promotes joint research activities and faculty exchange.
- With the Purdue University, USA on 25 April 2005 wherein both universities have agreed to promote the enrichment of their teaching and learning , research and discovery and engagement missions through exchange of faculty and students and other mutual contacts.
- With the University of Maryland , College Park, USA on 24 May 2005 to establish joint activities by the mutual agreement of both parties, through the exchange of students and faculty for research, teaching and study.
- With the Kansas State University (KSU), Manhattan, Kansas, USA on 25 April 2005 for the to explore cooperative activities through the development of degree programs, exchange of faculty, transfer of academic credits and organization of conferences and meetings.

- With the National Council of State Museums , Kolkata, on 07 July 2005 to foster collaboration between the institutions to promote academic and research interactions.
- With Chambal Fertilisers and Chemicals Limited(CFCL), Gadepan, India on 11 July 2005 with the objective of fostering collaboration between the two institutions to promote academic and research interactions by establishing an off-campus center of BITS at CFCL.
- With Philips Software Center India Private Limited, Bangalore on 11 July 2005 to foster cooperation between the two parties through Philips sponsorship for certain number of students for the higher degree program of BITS and the usage of Philips Software to augment the existing VLSI design and embedded system laboratories.
- With Andhra Bank on 22 July 2005 for providing educational loans to students, who have secured a seat in the institute. The loans availed in this regard could go up to the tune of Ten lakh Rupees the repayment period being about five to seven years.



INTERFACE 2005

Phoenix : Heralding a new era

Interface-2005, the 28th three-day All India Management convention portraying a different spirit this time, with the theme “Phoenix: Heralding a new era” was an attempt to emphasize the widely felt need for creativity in the workplace and the entrepreneurial skills required for an organization’s success today. Inaugurated by Dr.Y.S.Rajan, Senior Advisor to the Confederation of Indian Industries and former Scientific Advisor to the President of India on 4 February 2005, it served as a platform for the students to participate in various workshops, games and a plethora of other events.



IIPM (Delhi), IIPM (Pune) and NIILM-CMS (Delhi), were some of the colleges participated. The highlights of the fest included contests like the Young Manager of the Meet, Business Quiz conducted by K-Circle (Hyderabad) and ‘Clutters and Clatters’ amongst others. All the events aimed at testing the creative skills, spontaneity and other requisite skills for a budding manager. The workshops conducted by Mr. S. Balakrishnan on Advertising and Dr. P. K.

Gupta on Stock Exchanges were extremely interactive sessions which enthused the participants. Dr. Y. S. Rajan and Mr. Pooran Pande also enlightened the students with their flamboyant sessions on Technopreneurship and Creativity. All in all, it was a fabulous display of talents and knowledge, a widely appreciated effort by the Management students of BITS-Pilani.

APOGEE -2005

Inspiring Innovations

APOGEE (A Professions Oriented Gathering Over Educational Experience) , the annual All India inter-collegiate academic festival of BITS, Pilani was held during March 2005 with the theme INSPIRING INNOVATIONS. The festival acted as it always has been, a medium to display the serious projects set up by the students.

Lectures, workshops and contests held during APOGEE 2005 made the event very interactive and participative, the cynosure being project-exhibits displayed by the students. These included working, non-working and conceptual models. Following are briefings on some of these exhibits:

Chemical Engineering Association presented exhibits that mirrored the latest developments in the field. The projects pertained to topics varying from environmental engineering to process control, modeling and simulation. The projects roped in this time involved innovation in synchrony with the theme of this APOGEE.

Civil Engineering students displayed projects on topics like earthquakes, airports and bridges with special sections on the

Oresound Bridge in Sweden and the Hoover Dam in California's Imperial Valley.



Electrical and Electronics Engineering models included a robotic pen that recognized speech and solar power related exhibits.

"Sights and Sound" focused on the technical know-how behind movies and special effects.

The Mechanical Engineering models such as a robot that could be used in space exploration. A solar car, a state-of-the-art seeder and a model that presented the best



ways to use the energy of the ocean tides to generate electricity added value to the exhibition.

Pharmacy Association presented projects on drug delivery systems, artificially induced respiration, phase transfer catalysis, Parkinson's disease and mechanism of action of various drugs and medicines.

Computer Science Association exhibited a gamut of projects showcasing handwriting

recognition software, video conferencing, source code protection and a non-working model depicting the BITS-Connect project-NEURON. Various other paper presentations and charts were also showcased.

Electronics and Instrumentation Association presented projects like electronic voting system, LABVIEW, Intelligent Parking System, Cursor using Gage Tracker. Non working models showcased the recent developments in the field, like, Nanotechnology, MEMS/NEMS, RFIDs, GPs and Missile Technology.



Biological Sciences Association displayed several projects and models such as, Hypertension sensor, ECG signal rectifier, etc. A workshop to create awareness about the effect of pollution on DNA was also conducted.

Chemistry Association focused on some of the upcoming fields such as, nanotechnology, green chemistry etc. A photography workshop took the visitors on a behind-the-scenes trip and showed them how a photograph is developed.

Economics and Finance Association dealt with solutions for various problems faced by today's corporate world. A few of them were: Predicting Share prices, technical analysis and a workshop on supply chain management.

Mathematics Association displayed models that explained day-to-day notions using mathematical concepts.

Physics exhibition consisted of a wide spectrum of projects ranging from LCDs , powered radio receivers to magnets and their effect on light. Non-working models on topics like time travel were also presented.

Languages and Humanistic Studies Association organized their exhibition with 'The Persona' as their central theme spotlighting the various aspects of Human Personality. The projects presented were on various topics like Graphology, Ethics, Human Complexes and Telepathy.

Engineering Technology Association presented several application-oriented projects. These models included an Air-Conditioning System, an automated bottling mechanism and others on power generation and upcoming energy efficient technologies.

Information Systems Association presented projects like a P2P System, TP scanner, Grid computing, SAQL, Language translator and also showcased a BITS portal that provided easy access to the vast knowledge which resides in BITS.

CEL, the Center for Entrepreneurial Leadership, conducted two significant events CONQUEST 05 and I4RI competitions during APOGEE 05, to propagate the essence of entrepreneurship. Conquest'05 was a unique Business Plan competition that tested the conceptualization skills of the participants. The four finalists short listed by the expert judges Mr. Jai Raj Gupta, CEO, World Cast Technologies and Mrs. Anita Sakuru, CEO, Kenpeople participated in rounds that were specially formulated to test their business

acumen. *Jan Swasthya Rakshak*, an enterprise in the making, targeting at providing medical treatment to the rural segment, through mobile health care units, conceptualized by students of BITS, Pilani won the first prize. *Habits*, a fresh concept that promotes the culture of reading and organizes team-building activities in companies won the second prize. It is a matter of pride that the first team of the *CONQUEST 2005* also won the first prize in the Business Plan competition organised by Columbia Business School and the second team has already launched its venture. Under I4RI competition judged by Mr. Ravi Kuchimanchi, an AID Jeevan Saathi, an NGO, Mr. Manish from National Innovation Foundation and faculty from BITS witnessed nine prominent rural technology prototype models developed by the students.

Competitions and Contests

Quizzes: BOB, OHT, Jen De Technologie, Byte for Thought, Quintrionics, Stimuli, Math Count
Programming Skill Tests: Code Rash, Smash the Bug, OPCODE, Chaos.

Technical Designing Contests: Chemische Konkurren, Krazy Bridge, Brickage, Embedded Brains, Chimaera, Simulacron

Fun Oriented games: Whodunit, RCSMS, Forex

ONWARD

Centre for Women Studies

A Centre for Women Studies sponsored by the University Grants Commission (UGC) has been established at Birla Institute of Technology & Science, Pilani in 2005. The

aim of this centre is to ensure that women not only benefit from technology, but also participate in the process from the design to the application stage. The technological inputs from faculty and students of a reputed institute like BITS, Pilani would help in the development of gender friendly technology – both in theory and practice and in bringing women into the mainstream of development with the help of technology.



The plans include the setting up of a Women Technology Park with focus on women entrepreneurship, Health Screening and Health Awareness programs related to women and children, GIS Applications and use of ICT for rural management and women upliftment and field studies on gender based conflicts.

To facilitate these efforts, BITS, Pilani has made use of net-working with Women Studies Centres at national and international level, government institutions, UN and international agencies. Collaborations have been initiated with the Department of Gender and Medicine, Linkoping University, Sweden and Centre for International Development and Conflict Management, University of Maryland at College Park, Maryland, USA.

Desert Bloom

The Center for Desert Development has been established by BITS, Pilani with the financial support of US\$ 50,000 donated by Shri. Gyanendra Singh, a BITS alumnus.

The mission of the Desert Bloom Project initiated by this Center is to develop world-class desert development technologies for water and energy conservation in irrigation systems; rain water harvesting and water distribution systems for making the desert to 'Bloom'. The aims of this project are:

- To collaborate with national and international agencies in the areas of efficient use of water, land reclamation and rehabilitation.
- To develop of affordable technologies to efficiently deliver and monitor water for irrigation use by employing sensor network and microcontrollers.
- To use biotechnology: tissue culture, genetic engineering and biofertilization for increased food production, livestock and bio-diversity.
- To integrate new technologies with existing agricultural practices for economic upliftment, employment generation and alleviating social and gender inequalities in the region.

Digitization of Library Books

Under the Digital Library of India project put up by the Ministry of Communication and Information Technology, Government of India, the BITS library has begun the digitization of books and journals . State of the art high speed scanners are being used for the scanning work. About 20,000 books published

before the year 1925 will be digitized in a year or two. This database will be merged with the Digital Library of India which can be accessed online anywhere in the world. At present the library collection is about 2,16,000 volumes and it is estimated that over 20,000 books and back volumes were published prior to year 1925. The rare collection includes about 4000 volumes from the personal collection of Shri G D Birla and another 2000 volumes of personal collection of Shri N C Mehta. Besides, the library also possesses a number of rare manuscripts, paintings and drawings.

RENEWING THE BONDS

BITSAA

BITSAA (BITS Alumni Association) felt extremely proud to announce the World Record created by the first batch of students admitted in 1964 and graduated from BITS in 1969. The 320 graduates from **BITS'69** are spread over various parts of India, USA, UK, Canada, Libya, Bahrain, Germany, Kenya, Nepal, Thailand, Philippines, etc. Many of them are topnotch executives in State Electricity Boards and Irrigation departments and in corporate houses such as Grasim and Exide in India as well as in IBM, Sun Microsystems, Sargent & Lundy and NASA Johnson Space Centre in USA.

In 1985, three musketeers from BITS'69 namely Manohar Baheti, Ashok Sureka and Deepak Khosla prepared a directory by hunting down all their batch mates and started organizing meets sporadically to celebrate friendship. The first meet of BITS'69 happened in 1987 and then the

subsequent meets in 1991, 1994, 1997 and 2003. The American Chapter of BITS'69 meet took place in Washington D C in August 2004 and more such meets are planned for the years to come.

It is for this feat that they have been listed as a **World Record for Alumni Meet of a Single Batch by the Limca Book of Records 2005 (Page 156) released on August 31, 2005 by Coca-Cola India.**

BITSAA also organized the Vice Chancellor's tea party at the VFAST Hostel for the graduating students of 2005.

CARING BEYOND OUR WALLS

BITSUNAMI Trust

A BITS Alumni initiative, **BITSUNAMI Trust** is striving for the rehabilitation of Tsunami affected areas of Tamil Nadu. Two villages, Naaluvadapathy and Pushpavanam of Nagapattinam in Tamil Nadu have been adopted by BITSAA Chennai chapter for rehabilitation. Initiated by a group of BITS alumni that includes Mr. Sudeep Jain, IAS, and ex-collector of Nagapattinam, the district worst affected by the tsunami of 26 December 2004, and with the funding support emerging from the top corporate giants such as Wipro, HP, WeP, Infineon and many others, the government formally approved this lead campaign in the rehabilitation and development effort of the two villages. Prof.S.Venkateswaran, Vice Chancellor, BITS has given a real impetus to the initiative by announcing BITSUNAMI Trust as a Practice School Station of BITS, Pilani. Students are allotted both PS I and PS II at Nagapattinam.

BITSUNAMI Trust is making a steady progress towards accomplishing its goal. Given below are some highlights of BITSUNAMI experience: 125 acres of agricultural land at Pushpavanam, rendered unusable due to the sea muck layer brought in by Tsunami, have been cleaned up in an ingenious de-silting method deploying tractors and special implements.

10 fibre reinforced plastic boats were manufactured by setting up a boat-manufacturing unit at the fishermen's colony itself at Pushpavanam.

The TRUST has already constructed toilet blocks for girl students in each of the 12 schools in both the villages, and is in the process of constructing toilet blocks for boy students in all the schools.

Drinking water supply tanks have been constructed, and linked to water sources in all the 12 schools.

The Trust has already handed over one new school building at Pushpavanam, and 39 more class rooms at the other schools are under construction at this village and at Naluvadapathy. Desks have also been arranged for the approximately 1800 students in the 12 schools.



BITS PS-I batch during summer of 2005 performed creditably, and were a great hit with the villagers. The students also saw rural economy from very close quarters, and were richer by the experience.

BITS PS-II batch is working on important projects related to Village Development Plans, Village Knowledge Centres, and GIS Resource Mapping of the Villages.

National Service Scheme

The annual BLOOD DONATION CAMP, the major activity of NSS was held during 13-14 March was organized with the technical assistance from the RED CROSS (IRC) SOCIETY- New Delhi. More than 700 units of blood were collected for IRC and the Meera Bhawan donated the highest units of blood among all the hostels of BITS, Pilani. The Environmental Camp was conducted in the village Garinda for three days. The activities included visiting a government school, renovation of the school building, and construction of a playground for the children. Another camp was held in the village Raila in which various competitions in drawing, running, and essay writing were organized and prizes were also distributed. Other activities of NSS include collecting clothes from the students and faculty, and conducting classes by the volunteers for the less privileged children of the people working in BITS Campus.

National Maritime Day

R.L. Institute of Nautical Sciences, Madurai, a collaborative off-campus centre of BITS, Pilani for conducting the B.S. Marine Engineering degree programme observed the National Maritime Day Function on April 05,

2005 in memory of "Unknown Sailors". Dr. B R Natarajan, Dean, Distance Learning Programmes Division attended the same as a special invitee.



CREATIVE ZONE

SPICMACAY

The semester witnessed acclaimed artists performing for SPICMACAY. The first programme was a Hindustani Vocal Recital by Smt. Rupan Sarkar on the January 8, 2005. Smt. Sarkar captivated the audience with her mellifluous voice and excellent rendition of the nuances of different ragas. On January 22, 2005, Smt. Rama Vaidyanathan enthralled the audience with her élan and elegance showcased in her exceptionally well crafted pieces "Shiva Parvathi dance", and "Ras Lila of Krishna and the Gopikas". Vidwan



Shashank mesmerized the audience with his Carnatic Flute Recital on the January 23, 2005. A child prodigy and a musical genius, he created magic with his beautiful compositions. Mysore Brothers, Dr. Manjunath and Sri. Nagaraj left the audience spell bound on 24th February 2005 with their Carnatic Violin recital. The wonderful rendition of ragas like Durga, Saraswathi, Amruthavarshini, etc. was highly appreciated by the BITS audience.

INBLOOM

This semester saw the reemergence of BITSian Bhawan Nite after a gap of several years. Contrary to the previous years when the Bhawan Nites were held in the lavishly decorated Q.Ts (Quadrangle Theatre) of respective hostels, **Inbloom**, the first **intrabits cultural festival** bearing the tagline

heralding a revival was held on April 17, 2005 in the elegant Central Auditorium.



Organized by the BITS Students' Union, it was a battle between the bhawans on stage for the title **the cultural portrait of BITS**. The contestants from various hostels showcased innovative and scintillating performances. At the end of the day, Vishwakarma bhawan and Malaviya bhawan were declared winners and the runners up respectively.

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We wish to thank the faculty and students of BITS who have helped us in procuring data and photographs.

Please feel free to send your comments, suggestions or feedback of any kind to mraman@bits-pilani.ac.in

Introducing New Faculty

S.No.	Name	Group	Research Interest
1	B B Gulyani, Ph.D.	Chemical Engineering	Process Integration, Fluid Flow Operations, and Piping Networks.
2	Rajan Agarwal, Ph.D.	Chemical Engineering	Drug development, Nano Technology, Bio-polymers, & Reaction Engineering.
3	Asok Adak, M.E.	Civil Engineering	Environmental Engineering
4	Priyanka Ghosh, Ph.D.	Civil Engineering	Earthquake Geotechnical Engineering
5	Shamsher Bahadur Singh, Ph.D.	Civil Engineering	Structures
6	Anurup Mitra, M.E.	Electrical and Electronics Engineering	Baseband Analog VLSI; 2) RF VLSI; Text to Speech Synthesis
7	Himanshu Agrawal, Ph.D.	Electrical and Electronics Engineering	Cellular automata fluids, complex systems: inter-disciplinary applications, micro array informatics, neural algorithms, and networks.
8	Bhagavatula Vani, Ph.D.	Biological Sciences	Plant physiology and Molecular biology. Expression studies under abiotic stress. Expression (both protein and mRNA) studies in relation to basic carbon and nitrogen metabolism. Signaling mechanism/molecules involved in primary plant metabolism, in higher plants and cyanobacteria.
9	Abhay H Pande, Ph.D.	Biological Sciences	Mechanism of activation of peripheral enzymes. Molecular mechanism of toxin action..Mechanism of action of antimicrobial peptides.
10	Saby John K, Ph.D.	Biological Sciences	Biochemical characterization of bioactive compounds from plant and microbial sources. Applications of enzymes from plant sources. Evolutionary biology of <i>Dictyostelium discoideum</i> . Micropropagation of important arid zone plants.
11	Braja Gopal Mishra, Ph.D.	Chemistry	Heterogeneous Catalysis and Materials Chemistry.
12	P Bhavana, Ph.D.	Chemistry	Bioinorganic Chemistry.
13	Mukesh Kumar, Ph.D.	Mathematics	General Theory of Relativity
14	Rakesh Choubisa, Ph.D.	Physics	Atomic Physics
15	Naresh Kumar, Ph.D.	Physics	Material Science
16	Raj Kumar Gupta, Ph.D.	Physics	Liquid Crystals
17	Rudra Prakash Pradhan, Ph.D.	Economics	Infrastructure, Women Development, Foreign Direct Investment, Rural Employment, Sustainability and Globalization.
18	Arvind Sudarsan, M.E.	Economics	Industrial Organization; Performance Appraisal

