BIT**S**can

Semester Notes

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Semester II   *2003 - 2004*

INSIDE

- Academia
- Joining Hands
- Honours
- Achievements
- APOGEE 2004
- Caring Beyond Our Walls
- New Faculty

A MOMENTOUS SEMESTER

The Second Semester 2003-2004 was marked by several important milestones in BITS, Pilani's long tradition of excellence. BITSConnect, the $1.2 Million project jointly funded and executed by the BITS Alumni and BITS, Pilani, saw the light of the day. The campus was honoured with a visit by Chancellor Dr. K.K. Birla, who inaugurated the BITSConnect network, and also Dr. Sarala Birla, who inaugurated the new library in the presence of Dr. K.K. Birla and Shri B.K. Birla. The Chancellor interacted with faculty and students during this visit.

Dr. K.K. Birla with students

The BITSConnect network, which was christened NEURON (Next generation University Redundant Optical Network), is a further leap in the infrastructure facilities on campus. NEURON provides campus-wide LAN and Internet connectivity, and comes as a major boon for the BITSian community. The inauguration also witnessed several illustrious alumni – instrumental in the project – visiting their Alma Mater - a sort of homecoming experience for them.

The magnificent new library is a splendid building with high ceilings, marble staircases and sunlit atria. The library also has excellent facilities and is user-friendly, making the reading habit a pleasure.

Distinguished Birlas at the Library

Interface, the annual Management fest, combined the efforts of Management Association and the Centre for Entrepreneurial Leadership, with the theme *Inceptum - Building Business @ the Speed of Opportunities*.

Rapid progress was made in the construction of the BITS, Goa campus, making it ready to take in its first batch of students in the First Semester, 2004-2005.

Key features of BITSConnect

❖ Rs. 5.32 crores project jointly accomplished by BITS Alumni and BITS, Pilani

❖ State of art, completely switched, voice enabled LAN

❖ 4000 data port for providing connectivity to all hostel rooms, staff houses, library, guest house, etc. using 25 km of fibre for gigabit backbone connectivity and 250 km of copper cable for 100 MBPS desktop connectivity.

❖ Integrated with the already existing 1000 node network in the Institute Buildings.

❖ Wireless connectivity at select locations such as Library, Sky lawns, VFAST Hostel, etc..

❖ Entire project implemented by WIPRO with hardware from CISCO. BITS alumni in these two organizations were responsible for considerable reduction in overall cost of the project.

APOGEE, the annual All-India inter-college academic fest, was organized in March. Spread over five days, APOGEE bore the theme *Celebrating Technology*, and watched outside projects being showcased along with those developed by BITSians. Several invited lectures, competitions, quizzes and other interactive and educative events were organized.

As always, the academic fraternity brought home several laurels, publishing books and papers, attending conferences, winning grants and organizing training programmes and workshops, thus keeping alive the vibrant academic atmosphere.

ACADEMIA

A CONFLUENCE OF IDEAS

An International seminar and a number of training programmes and workshops were held during the semester.

International Seminar on Technologies of 21st Century

The inaugural ceremony of the BITSConnect attracted a large number of distinguished alumni to their Alma Mater. Convened by Prof. J.P. Misra and coordinated by the BITSAA, Prof. S. Gurunarayanan, Dr. Rahul Banerjee, Prof. A.K. Sarkar, Prof. Arya Kumar, and the Alumni Group, the two-day seminar was successfully held during March 20 -21, 2004 at BITS. Besides the special session on BITSConnect, the seminar included deliberations on the Technological Challenges in India, VLSI Design, Networking, Intelligent Transportation Systems and Technology Driven Entrepreneurship. The participants included several alumni and senior scientists from India and abroad and senior faculty members from BITS.

Mario Mazzola, Senior VP(Chief Development Officer) CISCO Sys, USA; Mukul Chawla, Senior Software Engg., CISCO Sys; Raj Khare, Managing Director, BROADCOM, Bangalore; Satish Gupta, Cofounder & Senior VP, Cradle Tech, USA; Prem Jain, SVP, CISCO Sys Inc. USA; Mukesh Chatter, Founder,

President & CEO, Axiowave, USA; Ramesh Grover, Managing Director, CMS Computer Ltd, USA; Gulu Mirchandani, Founder, MIRC ONIDA, Vinod Agarwal, Founder & Chairman, Logicvision, USA; Jayan Ramankutty, Senior VP, Cypress Semiconductors; Dr.Harsh Verma, Director R&D, Glocol Inc, USA were the alumni participated in the seminar. Senior scientists and academicians included, Dr. Chandrashekhar, Director, CEERI, Pilani; Prof P.K. Sikdar, Director, CRRI, New Delhi; Dr. H. Vyas, Director, Solid State Physics Laboratory, New Delhi; Prof. B.N. Jain, IIT Delhi; Prof Bhaskar Raman, IIT, Kanpur; Dr. Govind, Director, MCIT; Jean-Luc Ygnace, Research Scientist, French Institute of Transportation Research; Prof. K.R. Rao, IIT Delhi and Dr. T.S. Reddy, Scientist G, CRRI, New Delhi.

Management Development Programme

The Management Group conducted a special programme on *Managerial Excellence* and *Effective Branch Management* for a week during 9-14 February 2004 for the Senior Managers from Bank of Rajasthan (BOR). In his inaugural address, Prof. S. Venkateswaran, Vice Chancellor, BITS, highlighted the need and importance of such programmes in today's fast changing environment. Prof. L.K. Maheshwari, Director, BITS, Pilani and Shri K.C. Sharma, General Manager, Bank of Rajasthan also addressed the participants. Thirty four senior managers from major Urban/Metropolitan Branches of BOR attended this programme. Its main objective was to prepare high-potential branch managers and strategically positioning their

branches for achieving results. The participants were also fortunate to undergo a session on *Conflict Management for Business Growth* conducted by Swami Anubhavananda.

Inauguration of Management Development Program

Training Programme on Access to Chemical Abstracts through STN

The institute hosted the Inflibnet (Ahemdabad) sponsored training programme on *Accessing Chemical Abstracts through STN* on 6 April 2004. Twenty eight participants comprising faculty members, research scientists and library professionals representing Guru

Director addressing the participants

Nanak Dev University, Amritsar, Thapar Institute of Engineering and Technology, Patiala; Punjabi University, Patiala; Rajasthan University, Jaipur; Jiwaji University, Gwalior and BITS Pilani attended the workshop. Conducted by

Miss Jyoti Singh of Sci Edge Information, Pune, the programme aimed at providing adequate knowledge to the participants on the use of Chemical Abstracts online.

e-Journals User Awareness Programme

A one-day user awareness programme on the use of e-journals was organized exclusively for BITS faculty on 26 March 2004. Thirty one faculty members from various Groups of the institute attended this programme. With Mr. S.K. Sharma of Inflibnet as the resource person, the programme attempted to introduce the features of various e-journal portals offered by Inflibnet. Inaugurated by Prof. L K Maheshwari and coordinated by Dr. Ishwara Bhat, the programme included both presentations and practice sessions.

Hindustan Zinc Refresher Course Programme

The Practice School Division organized a 45-day Academic Refresher Course Programme for the employees of Hindustan Zinc Limited (HZL), Udaipur during 10 June- 24 July 2004 at BITS.

Vice-Chancellor addressing the trainees

Coordinated by Prof. G. Sundar and Dr. Meenakshi Raman, this programme was initiated by the HR division of HZL with a view to enhance the academic and soft skills of its employees. Lectures and Practice sessions were organized in the areas of Chemistry, Chemical Engineering, Physics, Management, Statistics, Computers and English Communication.

Distinguished Lectures

The scholarly lectures delivered by eminent professors from various academic institutions provided an enriching learning experience for the faculty and students.

Dr. D.N. De, Professor Emeritus, from IIT Kharagpur presented a lecture on *Macromolecular Architecture of Eukaryotic Chromosome* on 2 March 2004.

The Chemical Engineering Group organized three lectures this semester. *Nirupam Chakraborti from IIT Kharagpur* on *Genetic Algorithms* and *Objective Optimization using Genetic Algorithms* presented two of these on 22 February 2004. The third lecture was delivered on 24 March 2004 by Dr. Ramasamy, Director, CLRI, Chennai on the topic *Living with Leather: Cross-boundary learning.*

Prof. S. Venkateswaran with Dr. Samarasinghe

Dr. Stanley Samarasinghe, Director, International Centre for Ethnic Studies,

Kandy, Sri Lanka visited the campus on 26 July 2004. He delivered a talk on *Sri Lanka's Conflict & Peace Process: Current Problems and Challenges in Governance & Development.*

Professional Lecture Series

With a view to providing a learning opportunity to all those who wish to sharpen their managerial skills, the Faculty Division I organized a series of lectures delivered by selected faculty members and students drawn from different disciplines. To name a few, Mr. R. Raghunathan of the Management Group presented on *How to Interview* and Chitra Raghunath, a student of Management studies enlightened the audience on *Process of Induction.*

Visits by Faculty- Enriching the Learning Experience

Many faculty members of the institute were invited to deliver lectures by institutions outside Pilani.

On the invitation of the European Commision, Dr. Rahul Banerjee delivered an Invited Research Lecture on **IPv6-Aware Grid Computing** at Euro-India 2004 Summit held at New Delhi in March, 2004, apart from chairing the session. He also presented another Invited Research Paper on an innovative Digital Library Architecture being developed at BITS, at the International Conference on Digital Libraries – "ICDL – 2004" in New Delhi during 24-27 February, besides chairing a technical session in the event.

Prof. B.V. Babu was invited as the Guest Speaker at the Curriculum Development Cell Workshop on Heat Exchangers: Design and Optimization, held at IIT-Delhi on 26 March 2004. He delivered a lecture on *Optimal Design of Heat Exchangers using Evolutionary Computational Techniques.*

Dr. S.C. Sivasubramanian and Dr. G. Sundar delivered two invited **UGC extension lectures** each at the Applied Chemistry Group of Guru Jambheswar University, Hissar (Haryana) on 27-March-2004.

Prof. S. P. Gupta, delivered an invited lecture on *Rational Approaches to Drug Discovery* in UGC National Seminar on Recent Trends in Chemistry, organized by Department of Chemistry, A.P.S University, Rewa (M.P.) from March 29 to 31, 2004.

Professor Ravi Prakash, Dean, Research and Consultancy Division delivered a lecture on 1 April 2004 on *Acoustic and Ultrasonic Testing Methods for FRP and Carbon Fibre Structures* at Master Control Facility, ISRO, Hassan, Karnataka.

Dr. S.K. Verma chaired a technical session in the *National Symposium on Recent Trends in Algal Biology* held at Punjabi University Patiala and also presented his research paper entitled *Use of Biocompatible Silica Gel Immobilized Cyanobacterial Cells for Biotechnological Applications.*

Dr. Parvati Sahu attended an international conference on *Mathematics and its Applications* held at Kuwait University, Kuwait during April 5-7, 2004 and presented a paper on *Geometric*

Properties of Certain Integral Transformation.

On the invitation of the Ethiopian Roads Authority and the Transport research Laboratory Ltd., Prof. A.K. Sarkar visited Addis Ababa, Ethiopia during 19-20 May

Meeting the local community at Gedeshend

2004 to participate in a workshop organized to evaluate the outcome of the project entitled *Framework for the Inclusion of Social Benefits in Transport Planning* funded by Department for International Development (DFID), UK. He also had discussions with the local community in Gedeshend village, Degam Wereda on their perception of social benefits of roads.

Prof. V.S. Rao visited Trollhattan (Sweden), France and Italy during June 13-22, 2004. At Trollhattan, he participated in the International Symposium on Work-Integrated Learning organized by World Association of Cooperative Education (WACE) and presented a paper on *University-Industry Linkage programmes at BITS Pilani – A Successful Model of Work Integrated Education* jointly authored by him and Prof. S. Venkateswaran. Prof. Rao also

visited University of Boras in Sweden and met the Director of International Department and Heads of School of Engineering and School of Business Administration & Informatics regarding faculty and student exchange. In order to review the Practice School Operations, Prof. Rao visited INSEAD Business School and met Prof. Arnoud De Meyer, Prof. of Technology Management and Dean of Admn. & Operations, Prof. Eric Daguet, IT Director, Yves Preneau and Ms. Briggitte Avignon. He also visited the University of Trento, Italy and reviewed Practice School operations and discussed future collaborations.

Prakash Singh, Management Group presented a paper titled *Assessment of India's Banking Sector Reforms from the Perspective of the Governance of the Banking System* at Emerging Financial Markets and Services in Asia Pacific Conference organized by University of Western Sydney, Macquerie University and RMIT Business in Sydney, Australia on 27 and 28 May, 2004.

Prof. Nirupama Prakash was invited to teach a Summer course on *Culture, Caste & Status of Women in Indian Society* at the University of Maryland at College Park, U.S.A. from 1 June to 8 July 2004. She also presented a paper on *Women Empowerment* at the Hawaii International Conference on Social Sciences held at Sheraton Waikiki, Honolulu, Hawaii during 16-19 June 2004.

Neeru Maheshwari, Management Group, presented a paper entitled *An Analytical framework for evaluating e-business models for selected trade sectors*, at

Global Business & Economics Review-Anthology 2004 Conference organized by Business & Economics Society International, U.S.A on 19-22 July 2004 in Islands of Rhodes, Greece, Europe.

Science Day

28 February was celebrated as Science Day in honor of Sir C.V. Raman. The various Science Groups organized a series of popular lectures. Two quizzes were conducted, one for the students from the various schools in Pilani and the second exclusively for BITSians.

Prof. T.C. Goel on Science Day

The events ended with a talk on the Nobel Prize winners of the year 2003. Prof. L.K. Maheshwari later distributed prizes to the winners of the quizzes.

JOINING HANDS

Memoranda of Understanding

BITS, Pilani has **signed MoUs** to promote academic and research interactions by operating off-campus centers. BITS has collaborated with Patni Computer Systems Ltd., Mumbai, DSL Software Ltd, Bangalore, Strides Arcolab Ltd., Bangalore and Bharat Forge Ltd., Pune for running Off-Campus Distance Learning & Collaborative Programs.

Collaborative Projects

A Technology Business Incubator (TBI) has been established in the area of Embedded Systems and VLSI Design in collaboration with Department of Science and Technology (DST), Government of India.

TBI Lab

TBI jointly with CEL (Centre for Entrepreneurial Leadership) shall promote entrepreneurial leadership across all disciplines, facilitate entrepreneurial activity amongst students, and invite entrepreneurs to use TBI services so as to develop end products for commercialization. A large number of Industries are already participating in the activities of the TBI in terms of supporting the infrastructural facilities and providing technical help in the areas chosen. Notable among them are BROADCOM India Ltd, LOGIC VISION, OPEN SILICON, TENSILICA, MOTOROLA India Ltd, ST Microelectronics etc. BITS is already having a very strong collaboration with CEERI, Pilani in conducting programmes in the area of Microelectronics on campus and also off campus programmes with TEXAS Instruments, WIPRO, TATA ELXI, IBM, Analog Devices.

The Director, Deputy Director (Off-Campus Programs) and the Dean Distance Learning Division visited Tolani Maritime Institute, Pune on February 19,2004 in connection with the collaborative programme in B.S.Marine Engineering. On 20 February 2004 the Vice-Chancellor along with the Director, Deputy Director and the Dean, Distance Learning visited Mahindra British Telecom, met Mr. Helleur, CEO and discussed the progress of the collaborative programme.

Vice-Chancellor awarding diplomas

A function was organized at Grand Hotel, Mumbai where the Vice-Chancellor awarded first level diplomas in Nautical Sciences. There was also a meeting with the faculty of Tata Maritime Institute (Nautical Division) on 21 February 2004 at Mumbai.

BITS has joined hands with IBM Corporation for extending support on Object Oriented Analysis and Design Tools provided through the Rational Wing of IBM.

CSD (Centre for Software Development) has initiated another research collaboration with Massachussets Institute of Technology, Cambridge, U.S.A. in the era of e-learning Research and Development. Initially BITS and MIT will share each others, research results obtained through I^2L initiative of BITS and I-Campus initiative of MIT. The project will be co-ordinated by Dr. Phillip Long and Dr. Vijay Singh at MIT and Dr. Rahul Banerjee at BITS.

An informal arrangement has been made with the Virginia Tech. Professor Dr. Scott F. Midkiff. He is on the IEEE Pervasive Computing Board for delivering select live lectures in the frontier areas of Pervasive Computing using the facility of IP based video-conferencing hosted at the CSD. Faculty and students will now be able to attend and interact with them right from their residences and rooms.

HONOURS

Visit by Distinguished Birlas

The institute played host to several dignitaries and witnessed significant developments during the last week of March. Notable among these were the

Dr. Sarala Birla inaugurating the Library

inaugurations of the new library building by Dr. Sarala Birla and the project BITSConnect by Dr. K.K. Birla. In her brief talk, Dr. Sarala Birla urged students to use

the library regularly in order to keep their knowledge updated.

Key features of Library

❖ Total area 65000 sqft

❖ Seating for 750

❖ Fully computerized

❖ 2000 e-journals and many important data bases

❖ Accessibility from anywhere in the campus

❖ 17 public access terminals and provision for wireless connectivity for Internet.

❖ 2 lakh books and bound volumes

❖ Current periodicals : 501

❖ Books added : About 3000 every year

❖ Educational videos : 150

❖ CD ROMs : 490

❖ Unique features: Palatial ambience, plenty of natural light, greenery both inside and outside the library, wireless LAN everywhere in the library, highly energy efficient, a good blend of aesthetics and technology.

BITSConnect, was inaugurated by Dr. K.K. Birla, the Chancellor, on 20 March, 2004. In his inaugural address to the alumni, students and faculty members, Dr. Birla stressed the need to be net savvy in this fast-changing world. He appreciated the efforts of BITS Alumni in making their Alma Mater a platform for progress and perfection.

Dr. K.K. Birla at the inauguration of BITSConnect

Amongst the prominent alumni who attended this historic event, two famous dignitaries presiding over the occasion were Mr. Satish Gupta, the Co-founder & Sr. Vice-President of CRADLE Technologies, USA. and Mr. Vikram Shah, the MD, Boyden, Global. Reminiscing their memories, both the alumni remarked that, to them, it was a homecoming. The event ended with a cultural presentation by the dance club.

The Languages Group considered itself fortunate to have had Dr. Birla at its newly setup 40-booth Language Laboratory. The Laboratory is actively used for providing practice to the students in the area of phonetics, vocabulary building, grammatical

Chancellor at the Language Lab.

patterns, etc. Many students use the Lab for self-practice and assessment, GRE,

TOEFL and for enhancing their communication skills. Dr. K.K. Birla appreciated the efforts and advised the group to continue providing practice in the language lab.

ACHIEVEMENTS

Student Achievements

Mr. Joy Scaria, working as Senior Research Fellow under Dr. S.K. Verma, has won the citation for the **best research work** for a paper entitled *Development of Bacterial biosensors for the detection of residual antibiotics in field samples* at a conference conducted by School of Medical Science & Technology, IIT Kharagpur.

Ms. Nirmala Hariharan, a student of Biological Sciences presented a Paper entitled *Genomewide codon usage analysis of Bacillus anthracis as tool for probable tool for heterologous gene expression studies* at Biohorizon 2004, organized by IIT, Delhi from February 25-28, 2004.

BBC University Challenge

A four-member team comprising **Chitra Raghunath, Sansaptak Dasgupta, Aparajith Ramnath and Ganesh Ramachandran** represented BITS in the

BITS participants with Quiz Master

All-India University Challenge quiz contest telecast on BBC. The team triumphed in their first round match against the Xavier Institute of Management (XIM), Bhubaneshwar. The quiz was conducted by renowned quizmaster Siddhartha Basu.

Significant Projects

CSD has initiated the **Grid-One Project** in the area of IPv6 QoS – Aware Grid Computing in January, 2004. Microsoft Research, Redmond, U.S.A. has provided a research grant of USD $20,000 for the first phase of this two year long research initiative under the supervision of Dr. Rahul Banerjee.

Prof. Sundar Balasubramaniam of the CS-IS Group *received a funding of USD $10,000* from Microsoft Research, U.S.A. **for his proposal on embedded systems.**

Dr. Pinaki Sar has received the Young Scientist Major Research Project entitled *Bioremediation of Nuclear Wastes: Removal of radionuclides / metals and degradation of organic contaminants* from Board of Research in Nuclear Sciences, Department of Atomic Energy, Govt. of India. He has also been awarded a DST Young Scientist project on *Microbial Removal of Heavy Metals and Radionuclides from Industrial Wastes.*

The Young Scientist project entitled *Single Crystal and Crystal Cored Fiber Growth of Unary and Binary Organic NLO and Electro Optic Materials* funded by DST, Govt. of India, was awarded to Dr. Rama Nand Rai. The *Crystal Growth Laboratory* is almost at the verge of completion. The new equipment added to the laboratory include, a Eurotherm programmable

microprocessor controlled water bath, temperature controlled vacuum oven with vacuum pump, refrigerated water bath, electronic balance, etc.

Dr. Nilashish Nandi has been sanctioned around Rs. 6 lakhs from CSIR, New Delhi for his project entitled *Theoretical Study of The Chirality Driven Morphology and Recognition Phenomena in Biomimetic Monolayers.*

As the Principal Coordinator Prof. B.V. Babu received a sanction of Rs. 23 Lakhs for the **DST-FIST project on** *Improvement of Chemical Engineering Laboratories.*

Professor Ravi Prakash received a sanction of Rs. 2.5 Lakh each for creating **Intellectual Property Rights (IPR) Depository** and for organizing a National Seminar on Challenges posed by IPR Regimes, under the scheme of IPR Education Research and Public Outreach programme of the Ministry of Human Resource Development, Government of India.

Faculty Achievements

At the invitation of the Department of Science and Technology, Ministry of Science and Technology, Government of India, Prof. Ravi Prakash acted as an **Expert Member** for the meeting of National Expert Committee on Biomedical Engineering held at New Delhi on 7 April 2004.

Prof. S.P. Gupta was appointed as a **member of advisory committee** of Special Assistance Programme of UGC sanctioned to Chemistry Department, A. P. S. University, Rewa (M.P.).

Prof. B.V. Babu and Mr. Ashish Chaurasia **published four papers in International Journals of Elsevier Publications.** Two of these papers belonged to the Chemical Engineering Science and the other two about Energy Conversion and Management.

Dr. Rahul Banerjee **visited** the headquarters of **Microsoft Research at Redmond, U.S.A.** on specific invitation during 31 July to 6 August. Several collaborations evolved during this visit besides a local alumini meet held at Redmond in which select BITS Alumini from batches of the years 1981 – 1996 participated. Dr.Banerjee also received the honour of being **a member of the National IPv6 Intra-Agency Workgroup** setup by the Government of India.

Prof. B V Babu had also several honours to his credit: the **Program Committee Member** for the Genetic and Evolutionary Computation Conference (GECCO-2004), held at Seattle, Washington, USA during June 26-30, 2004, and a **Panel Expert** for www.chemicalhouse.com the most vibrant and active site for the Chemical Industry on the net. Prof. Babu also acted as the **reviewer for several international journals** such as IEEE Transactions on Evolutionary Computation, Chemical Engineering Science and International Journal of Systems Science for three books namely, 'McCabe Smith's Unit Operations for Chemical Engineers, 7th Edition for McGraw Hill, New York, *Heat Transfer* for Oxford University Press, India, and *Chemical Technology & Engineering* for Tata McGraw Hill, India. Further, he **reviewed** the **Technical Papers** submitted for presentation at the

Genetic Algorithms track of Genetic and Evolutionary Computation Conference (GECCO – 2004), June 26-30, 2004, Seattle, Washington, USA.

Dr. Meenakshi Raman acted as an **additional reviewer for two papers** presented at the session on *Applications of Information and Communication technologies in Education and Training* at EISTA 2004 (International Conference on Education and Information Systems: Technologies and Applications) July 21-25 held in Orlando, Florida, USA

Prof. R. C. Srivastava and Dr. Subit Kumar Saha have published the following papers **jointly with some students:**

A simple method for the estimation of insulin using changes in membrane permeability. S. K. Saha, P. Gaytree, U. Roy and R. C. Srivastava, **Indian J. Biotechnol**. 2, (2003) 236.

Quantifying taste using hydrodynamic oscillator U. Roy, S. K. Saha, C. R. Krishnapriya V. Jayshree and R. C. Srivastava, **Instrumentation Sci. Technol.** 31(4), (2003) 425.

Single capillary Teorell oscillator-Studies with nonelectrolytes. K. Bala, K. Kumar, S. K. Saha and R. C. Srivastava, **J. Colloid. Interface Sci.** 273(1) (2004) 324.

Prof. R.C. Srivastava also coauthored a **research monograph** entitled *Transport mediated by electrified interfaces,* published by Elsevier, Amsterdam (2003).

Prof. T.N.S. Mathur acted for Tata McGraw Hill, India as **the reviewer** for a book on *Thermodynamics: An Engineering Approach.*

Pharma Health Magazine

With the primary objective of creating awareness about the various aspects of health among the campus residents, the
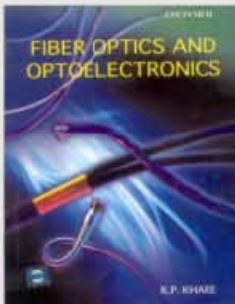

Pharmacy Group has started a newsletter entitled Pharma Health magazine. This monthly newsletter highlights the various health issues relating to drug use and abuse, poison hazards, infectious diseases - their mode of spread and prevention, health tips and latest information on drugs. The response from faculty and students has been quite encouraging.
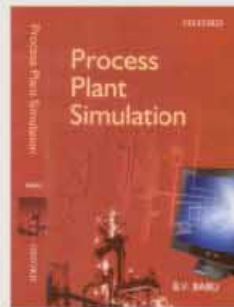
IN PRINT

Control Systems – Theory and Applications, Pearson Education. 2004.

Smarjit Ghosh.

Fiber Optics & Optoelectronics. Oxford, 2004.

RP Khare.

Grassroots Entrepreneurship Strategy for Development, Jain Brothers, New Delhi. Umesh Dhyani, Motilal Dash and Arya Kumar.
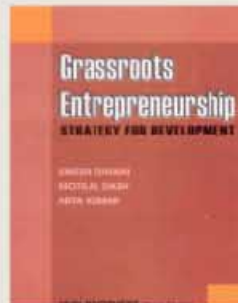
Small Hydro Power Systems, Dhanpat Rai & Co., 2004. T.S. Bhatti, R.C. Bansal, D.P. Kothari .

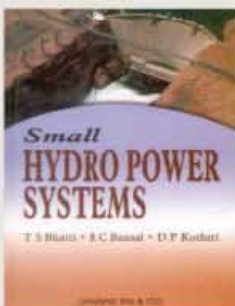International Journal of Communication – January-June 2004, New Delhi: Bahri Publications, Guest Editors. Sangeeta Sharma and Raghuvir Singh.

Process Plant Simulation, Oxford. 2004. B.V. Babu.

RENEWING BONDS

A brain storming session "Vision for BITS" was held on 21 February 2004 during the meeting of Prof. S Venkateswaran, Prof. L.K. Maheshwari, Prof. V.S Rao and Prof. B.R. Natarajan with Mumbai Alumni. This was followed by a get-together in which around 400 BITS Alumni were present. Popular among them were Vikram Shah, Managing Director Talisma, famous for Micro Credit Policy; Ramesh Ramnathan, Campaign Coordinator, Janaagraha; K. Ram Chandra, Vice President and Managing Director of Philips; Rajesh Hubbu of Iflex, and many others.

INTERFACE 2004

Inceptum - Building Business @ the Speed of Opportunities

Inauguration of Interface '04

INTERFACE 2004, The XXVII All India Management Convention, was held during 6-8 February. The convention, for the first time ever, marked the joint efforts of the Management Association with the Center for Entrepreneurial Leadership (CEL). With the theme, *inceptum: Building Businesses @ the Speed of Opportunities*, INTERFACE 2004 aimed at cultivating and promoting entrepreneurial thinking among the student community.

Dr. K. Vijay Rao, Vice-Chairman of Epicenter Technologies Ltd. and Mr. Anand Pillai, President, Center for Leadership, Intrapreneurship and Managerial Excellence (CLIME) inaugurated this three-day Convention.

The guest profile was very diverse and elite, with impressive lectures such as *Basics of Entrepreneurship* by Mr. Vivek Pandita, a Venture Capitalist from USA and *Why most Entrepreneurs fail* by Dr. Bhaskar Bose, an Adjunct Professor of BITS, Pilani. The Convention lived up to

its name by bridging the gap between the student community and the corporate world through interactive workshops like *Intrapreneurs: Creating the Corporate Enterprise* by Mr. Anand Pillai, *The Dream Employee* by Mr. Abhishek Panthri, an alumnus representing Satyam Computers Ltd. and an award-winning study on *HR in the software industry* by Mr. Nandkishore Rathi, Placement Officer at IIT Bombay.

The various interactive and informative events like BizQuiz, Paper Presentations, Panel Discussion, Diagnostic CAT and GRE, IQ-EQ tests, etc. and management games such as Young Manager of the Meet, Wealth of Nations, Clutters and Clatters, Business Potpourri and others attracted an overwhelming participation from the students. The CEL also organized certain events like the *Billionaire and BizConnect*, a contest for developing business models based on the prestigious NEURON network.

APOGEE 2K4

Celebrating Technology

APOGEE (A Professions Oriented Gathering over Educational Experience) is the annual All-India inter-collegiate academic festival of BITS, Pilani. APOGEE 2004 carried the theme *Celebrating Technology* and acted as a medium to display the various projects set up by the students.

This APOGEE was again designed to be different from the previous ones. The changes included online registration for events and paper presentations. Various new lectures, workshops and contests

were introduced. This made the whole event very interactive and participative.

Inauguration ceremony of APOGEE '04

The fest started off with the inaugural ceremony presided over by Vice-chancellor Prof S. Venkateswaran. The chief guest Dr. Y.S. Rajan, Principal Advisor, Confederation of Indian

Thematic structure at APOGEE

Industry inaugurated the festival and also unveiled the thematic structure created by the department of Art and Decoration.

Project-Exhibits

The main attraction of this APOGEE was the project-exhibits displayed by students. These consisted of working, non-working and conceptual models. Following are some of these major exhibits.

Chemical Engineering Association presented solutions to problems pertaining to the environment. Projects from various fields like Environmental Pollution Control, Process Plant Safety, Chemical Reaction Engineering, Kinetics and Reactor Design were displayed.

Civil Engineering students displayed replicas of the Kansai International

Airport and The Roman Colosseum. Other models consisted of Electro-

Osmotic Pulse Technology, Gravity Head Recharge Tube Well and Cable Stayed Roofs.

Electrical and Electronics Engineering models included a Hindi Speech Recognition Software, Robotic Arm, and Virtual Keyboard. A separate section focused on Cell Phones and Mobile Communication Technology.

Mechanical Engineering Association showcased Driverless Car Simulation, Multi-crop Seed Planter, Roller AGV,

Steam Engine Governor and others. The Automatic Shoe Buffer was everyone's favourite.

Pharmacy students presented a number of models depicting the effects of diseases like hypertension and asthma on the human body. They also suggested remedial measures for these ailments.

Their other exhibits included Controlled Drug Delivery System and Use of Steroids.

Computer Science students displayed models relating to various fields like gaming, fractals and networking. Encryption and Decryption Software, Auto C-code Generator, MP3 Stego, Iris Recognition Software and 2-D AutoCAD were some of the projects that the students put up.

Electronics and Instrumentation application-oriented models included an Automatic Infra Red Visitor Counter, Sign Language Interpreter and Speech Recognition Software developed in JAVA.

Some of the projects and models put up by the **Biological Sciences** Association were Urea Sensor, PRIMGEN – Primer Designing Software, Biodiesel and Stem Cell Technology. DNA Music displayed the patterns of music that DNA structures may signify.

Chemistry Association focused on displaying the role of chemistry in future electronics. Their exhibits included Weather Forecasting using Chemicals, Light Emission from Single Crystal Silicon and Nanotubes and Deflouridation of Water

The main attractions at the **Economics and Finance** Association were COSMICS, a customer management concept and Fortune Challenger, which proposed derivative prices based on various forecasting techniques. Final Destination and SATURN were the other displays. The students also presented a coin and currency exhibition.

Mathematics models attempted explaining day-to-day notions using mathematical concepts. Their projects included a Sundial and Wavelets Transformations

Physics exhibition consisted of a wide spectrum of projects ranging from Laser Eavesdropping to Optical Illusions.

Some of the exhibits were Chaotic Signal Masking, Physics in Medicine, Seismograph, Harmonics in Indian Drums and a comprehensive simulation of Laser Cooling.

Languages and Humanistic Studies Association projects were based on the theme *Psycho-social coliseum*. The displays focused on issues like Internet Addiction, Spam, Harry Lorrayne's Memory Techniques and Optical Illusions.

Most of the projects by the **Engineering Technology** were application oriented. These models consisted of Room-Cooler, Refrigerator, Vacuum Brake System and the Multi Criterion Decision Making concept.

The spotlight at the **Information Systems** Association was on Software Development. The exhibits by the students consisted of Computer Vision: Human activity recognition, Software

service provider, Virtual web server and GAN tool.

Competitions and Contests

A number of quizzes, games and contests were conducted during the festival. A few of them are:

Quizzes: Brain of BITS, Over-Head Transmission, Auto Quiz, Byte for Thought, Biome, Kim Katham Kimartham, Audio-Visual Quiz

Programming Skill Tests: Smash the bug, Code Rash, Chaos, Swordfizz,

Technical Designing Contests: Hot Wheels – Reloaded, Chimaera, Kalpayitavya, Krazy Bridge, ProE, Virtuosity,

Fun-Oriented Games: Whodunit, Real Money, Forex,

Workshops

BITS (Broker Investor Transaction Simulation) and ERP (Enterprise Resource Planning), the workshops organized by the economics and finance association gave a fair idea of the stock market and integrating an organization using software technology respectively. **Techno Tides** by the Instrumentation students gave an insight into emerging technologies and equipment. The Computer Science students conducted **build UR PC and Game Programming.**

Cytogenetics (Karotyping) and Forensic Science, by the Biological Sciences and the Chemistry students aimed at explaining the intricacies of forensic techniques. The Physics and EEE Association collaborated to present **The Science of Music,** which explained the

physics behind music and the electronic processing of sound. **HSYS and CAPTCHA** were the other workshops held during APOGEE.

Invited Lectures

Distinguished experts were invited to deliver lectures at APOGEE. Computer Vision - *Seeing is believing* by Professor Narayanan, faculty, IIIT, Hyderabad; *Living into Leather* by Padma Shri Dr. T Ramasami, Director, Central Leather Research Institute, Chennai; *The back end of the nuclear fuel cycle – the challenges and opportunities* by Dr. VK Manchanda, BARC; and *MEMS* by Dr. Navakanta Bhat from IISC, Bangalore attracted a large audience.

ONWARD

BITS, Pilani – Dubai Campus

Since its inception, BITS, Pilani-Dubai Campus has grown from strength to strength. The growth has not only been in terms of the number of students but also in terms of establishing the name and image of BITS, Dubai as an institute of excellence in Middle East.

During Feb-Aug 2004, the most notable events have been the Campus Placement Program and the Graduation Ceremony for the first batch [Batch of 2000 and class of 2004] of graduating students.

The Campus Placement Program organized by BITS, Pilani-Dubai for its first graduating batch in April-May 2004 was very successful with all graduating students securing placements of their choice in top rated organizations with an average salary of AED 4000 per month and perks and a peak salary of AED. 11000/ per month and perks. 3 students got admission in prestigeous US universities with fellowships.

The graduation Ceremony took place on 5th August, 2004. It's a matter of pride to put on record the excellent performance of the first batch of graduating students. Of the 54 students, 14 students graduated with distinction. One student Ms. Shilpa Bhoj, scored 10 CGPA thus becoming eligible for Gold medal. The Convocation address was delivered by Prof. V. N. Rajashekaran Pillai, Vice Chairman, University Grants Commission, India. Vice-Chancellor, BITS, Pilani, addressed the graduating students inspiring them to shine in their lives.

In addition to this, during the period ranging from February through August 2004, the Campus witnessed several cultural, sports and academic activities. The students of BITS, Dubai participated in various intra- and inter-university tournaments, contests and competitions and won accolades for the Institute.

CARING BEYOND OUR WALLS

NSS

Keeping up its tradition of dedication and commitment, NSS, was active in its activities pertaining to the societal development. The first activity began on 25 January, 2004 with the inauguration of the Vocational Training Centre, at Garinda by the Director Prof. L.K. Maheshwari. Two Sewing Machines were put in the Centre, so as to enable the women to utilize the facility and motivate them towards generating income on their own.

Director inaugurating Garinda Vocational Training Centre

The Blood Donation Camp on 13-14 March was inaugurated by Smt. Vandana Jena IAS, Joint Secretary, Youth and Sports Ministry. The camp witnessed

1018 students across the Institute donating blood totaling up to 818 Units.

More than 200 villagers were benefited by the Health Awareness Camp during 27-29 March, 2004, at Garinda. In his address, Dr. R.P. Pareek raised the issues of AIDS along with other medical issues. Free medical checkups and several pathological tests were also offered at the camp.

CREATIVE ZONE

Ragamalika

Ragamalika paid homage to Saint Thyagaraja at the Thyagaraja Aradhana celebrated on the Founder's day. The forum also organized its reputed music

and dance festival **Sangamam** during 20-22 February. Attracted by a huge audience, the inauguration presented two dances performed by Ragamalika.

Shri Pakala Ramdas at BITS

The captivating violin rendition by Shri Pakala Ramdas, the spell-bounding carnatic Hindustani- "jugalbandhi" by Shri Sriram Parshuram, and the scintillating dance performance by Shrimathi Priyadarshini Govind mesmerized the audience. Ragamalika also had the honour of performing before the distinguished Birlas at the inaugural ceremony of BITS Library.

SPICMACAY

SPICMACAY enthralled the BITS audience with two programmes: one in music and the other in dance. The VEENA recital by Smt. Jayanthi Kumaresh was a perfect mix of talent and clarity along

Smt. Vanashree at BITS

with zest and commitment. Shri Jayaram Rao and Smt. Vanashree presented a Kuchipudi performance attracting large and enthusiastic audience. The artists performed various pieces relating to the epics like Mahabharata.

NURTURING ENTREPRENEURS – CEL

CEL, with its vision of *creating business leaders in all spheres of life with entrepreneurial thinking* marched ahead with a spate of its innovative ventures. In-house learning sessions were organized for the benefit of students during January-February 2004. Interactions among professionals, entrepreneurs and students during these sessions on topical themes like PS2 Demystified, and Success Beach enormously benefited the participants.

Leveraging BITSConnect programme to create a feasible Revenue Model, CEL announced its business plan competition during the INTERFACE 2004, where executive summaries were invited from students based on any commercially viable idea. A panel discussion on *Entrepreneurship Challenges in the Global, Knowledge Economy:* was also organized at INTERFACE 2004.

CEL also participated in APOGEE 2004 through its event *Ideas for Rural Entrepreneurship* where projects were invited from teams of students and judged on the idea, application, techno-economic viability and marketability in the context of the rural Indian economy.

An innovative **Internship program** was conducted in selected industries located in Ambatur Industrial Estate Chennai during n December, 2003 to provide an opportunity to the budding entrepreneurs to learn and equip themselves with entrepreneurial traits and business management techniques by directly getting exposed to real life business situation.

Entrepreneurship Awareness Programme (EAP) conducted by CEL on 3rd and 4th April 2004 for the faculty members and students from various institutions located in Pilani and the Northern Region, aimed at spreading entrepreneurial awareness and encouraging selected institutions to initiate steps for forming e-cell in their institutions.

Ms. Laura Parkin, Executive Director, Wadhwani Foundation visited the institute during March-April 2004 and was enthusiastic in her support and guidance to the various activities of CEL. The **4th meeting of NEN** partners on 26 March 2004 hosted by BITS, was inaugurated by Dr. S. Venkateswaran, and attended by the representatives of all the five institutions of NEN and the

Ms. Laura Parkin addressing NEN partners

representatives from the Wadhwani Foundations. The participants wholeheartedly applauded the efforts put in by the CEL BITS.

INTRODUCING NEW FACULTY

S.No.	Faculty	Group	Research Areas
1.	Madhushree Kundu, Ph.D	Chemical Engg.	Separation Processes, Thermodynamics, Simulation
2.	Kailash L. Wasewar, Ph.D.	Chemical Engg.	Computational Fluid Dynamics and Process Intensification
3.	Akil Ahmed, Ph.D.	Civil Engg.	Smart Structures, Finite elements Method and Ferrocement
4.	Sushanta Chakraborty, Ph.D.	Civil Engg.	Structural Dynamics, Inverse Problem, Model Updating and Fibre Reinforced Composites
5.	Arun C, Ph.D.	Civil Engg.	GIS Applications in Construction Management, Application of Artificial Intelligence in Construction Management, Construction Risk Management
6.	Sanjay Roy, Ph.D.	Electrical & Electronics Engg.	Power and energy systems, AC drives, Renewable energy engineering, HVDC and FACTS, System-human interactions and Cybernetics in power engineering and policy
7.	Anil K. Bhat, Ph.D.	Mechanical Engg.	Multivariate Statistical Analytic Techniques used in Marketing Research. Post Modern Consumer Research
8.	Suman Kapur, Ph.D.	Biological Sciences	Molecular Genetics of Human Diseases
9.	Shibasish Chowdhury, Ph.D.	Biological Sciences	Computational structural Biology with special reference to protein folding
10.	Anshuman Dalvi, Ph.D.	Physics	Super ionic conductors and their applications in solid-state ionic devices
11.	Neelima G. Kelkar, Ph.D.	Physics	Borderline of theoretical particle and nuclear physics
12.	Souri Banerjee, Ph.D.	Physics	Nanoelectronics and Single Electron Devices
13.	Suryakant Maharana, Ph.D.	Humanistic Studies	Consciousness and Mind, Indian Philosophy and Phenomenology
14.	R. Swarnalatha, Ph.D.	Languages	Creative writing, Religion & Spirituality, Twentieth century literature and theatre
15.	Santhosh Kumar Pandey, Ph.D.	Languages	Modern Literary Theory and Criticism, Theory and Practice of Indian Classical Music
16.	Sanjiv Kumar Choudhary, Ph.D.	Languages	Applied Linguistics, Social Linguistics and Systemic Functional Linguistics

Networked
INSIGHTS INTO THE IT WORLD

Redoing the road to innovation

Subramanyam takes a first-hand look at how BITS-Pilani, one of the first technology institutions in India, is going hi-tech

BITS to set up des...
THE HINDU BUSINESS LINE

BANGALORE: The Birla Institute of Technology & Science (BITS), Pilani, has the plans to set up design...

The Times of India, New Delhi

BITS sets up virtual university

TIMES NEWS NETWORK

Pilani: Birla Institute of Technology and Science (BITS) announced completion of "NEURON", "interconnecting minds" project on Thursday here.

Under NEURON project, BITS has set up a Cisco gigabit backbone network across its 328 acre campus to provide information and communication services to its students and faculty, according to vice-chancellor S Venkateshwaran.

BITS now provides broadband access, IP telephony, streaming media and video conferencing facilities in students' rooms, hostels, staff quarters and guest house as well as wireless access in select areas on campus.

"Further, having nation's ...est captive backbone in ...structure will offer ...h content to over ... Our DLPD is ... India and ... forward ...ansion of ...concept."

Alumni launch Rs 200-cr tech makeover for BITS

Our Bureau
New Delhi, March 19

THE Birla Institute of Technology & Science (BITS), Pilani...

BITS completes NEURON project

NEW DELHI: The Birla Institute of Technology & Science (BITS) on Monday announced the completion of the NEURON "interconnecting Minds" project. Under the project, BITS has set up a Cisco gigabit backbone network across its 328-acre campus to enable it to provide next generation information and communication services to its students and faculty. BITS now provides broadband access, IP telephony, streaming media and video conferencing facilities in student rooms, hostels, staff quarters and the guest house, as well as wireless access in select areas on the campus.

THE HINDU, Tuesday, March 23, 2004

The Indian EXPRESS
NEW DELHI ■ SATURDAY ■ MARCH 20, 2004

BITS Pilani's Rs 200 cr semi-conductor lab

■ NEW DELHI: BITS connect, a global 'movement' of Birla Institute of Technology and science (BITS) alumni and the industry, on Friday announced a Rs 200 crore initiative to conduct semi-conductor R&D in India. "The oyster lab at BITS or Olab is a Rs 200 crore initiative to embark on pioneering semi-conductor research and development work in the country," Satish Gupta, senior vice-president, Cradle Technologies, said. Olab, India's first campus-based VLSI design facility...

BITS, Pilani – Goa : Another Leap Ahead

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