BIT**S**can

Semester Notes

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE

Pilani - 333031
Rajasthan

Semester II   2002 - 2003

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FULL STEAM AHEAD

The Second Semester, 2002-03 witnessed BITS, Pilani march ahead with a myriad of developments on every front. If January glimpsed the Institute host an International Symposium dealing with Genomics and Proteomics, it also saw BITSians spellbound by a Kathak performance by acclaimed danseuse Padmashree Shovana Narayan. Throughout the semester, a number of delegations, including one from Victoria University, Australia, visited the Institute. Workshops, Seminars and Invited Lectures on topics as diverse as Management, Semiconductor Nanostructures, Publishing, and Patent Awareness nourished the intellectually stimulating atmosphere. The faculty members were involved in a number of conferences and workshops, some of them publishing books in the area of their expertise.

Students of BITS receiving the top prize at the IBM Challenge

Students of Management organised an all-India inter-collegiate Management festival called **Interface.** March witnessed **APOGEE**, another student-organised event. APOGEE, the institute's annual All-India inter-collegiate Academic Festival, had several colleges participate in a plethora of events over five days. Students of the various disciplines of learning showcased their projects, put up exhibitions and participated in competitions, while distinguished invitees delivered lectures on various topics. Added to these efforts, a five member team won the top honours in the IBM Great Minds Challenge organised in Bangalore.

As always, the institute marched ahead fulfilling its social responsibility. Under the Project Gyanganga, hundreds of residents of a nearby village benefited from a free medical camp. The blood donation camp organised on campus in March received an overwhelming response.

Taking another stride forward on the infrastructure front, the Institute launched BITSConnect, a massive project jointly funded by BITS and its Alumni and aiming to link the entire campus electronically.

ACADEMIA

The semester saw a number of seminars, workshops and conferences, some of which are described below.

Genomics and Proteomics

Perpetuating the path of innovation the **Biological Sciences Group** and the

Pharmacy Group organised the *International Symposium on* **Emerging Trends in Genomics and Proteomics Education and Research** in collaboration with **Uniformed Services University of Health Sciences, Bethesda, Maryland, USA**, on 12-13, January.

The symposium was divided into four technical sessions with discussions on *Research in Molecular Mechanism of Viral Growth, Cancer and Wound Healing, Bioremediation of Toxicants, Recent Advances in Genomics and Proteomics Research* and *Intellectual Property Rights Related Issues in*
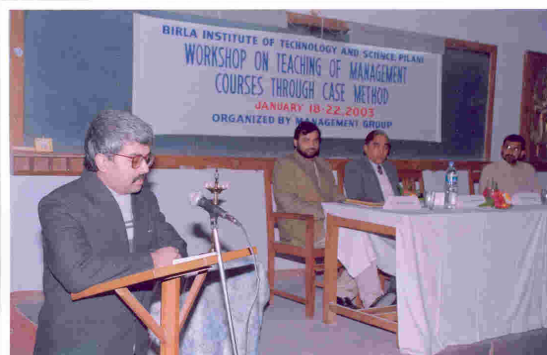

Biotechnology & Pharmacy.

In the *Poster Session*, posters made by faculty and student members were exhibited, displaying the ongoing research activities. Some of the fields highlighted consisted of *PCR Primer Designing, Cloning and Expression of Human Cytokines, Process Development for the Lab-scale manufacture of a Neutraceutical* and *Oral Controlled delivery of Celecoxib design.*

The Director, Prof. S. Venkateswaran, chaired the *Panel Discussion* held on the topic **Opportunities in Education and Research in India and US**. The symposium

ended with a short valedictory ceremony wherein the efforts of the participants were appreciated.

Workshop on Management

A ***Workshop on the Study of Management using the Case Study Approach*** was conducted by Dr. A. Vedpuriswar, Dean, Knowledge Centre, ICFAI Hyderabad.

The workshop was organised by the Management Association in the third week of January to explore the method of teaching management using Case Study, a method quite popular in some of the leading B –Schools of the world.

Prof. L.K. Maheshwari, Deputy Director, was the Chief Guest at the inaugural ceremony of the five-day workshop. Dr. Vedpuriswar took several sessions with the students as well as faculty members. Cases used at the Harvard Business School were discussed. The approach to the discussion was a novel experience for the students. The entire class was made to participate, stimulating all students to think. He encouraged lateral thinking and posed several intriguing questions.

Workshop on Patent Awareness

On 12, March, a *Workshop on Patent Awareness* was jointly organised by BITS, Pilani and the Patent Information Centre, Department of Science and Technology, Government of Rajasthan, Jaipur. Knowledge of patents is critical to

innovative students and Science and Technology administrators. Sponsored by the Patent Facilitating Centre, TIFAC, Department of Science and Technology, Government of India, the workshop aimed, through lectures delivered by experts, to create awareness about patents, copyrights and Intellectual Property Rights (IPR) among Indian scientists and technologists.

Invited Lectures

The Staff association organised several talks during the semester. Among these was an elegant talk on the *Science of Writing and the Art of Publishing* on 13, February. The chief speaker for the same was Mr. Sridhar Balan, a senior consultant with Oxford University Press and a noted media person. Another talk in the series was on *The*

Principles of Effective Teaching on 12, April by Dr. P.V Krishnan, Associate Professor at the Department of Applied Mechanics at IIT, Delhi.

In connection with the 121st birth anniversary of the Mother, the Staff Association organised on 23, January a talk on *Personal Development and Aurobindo Philosophy.* The speaker, Prof. R.K. Joshi, is a renowned scholar of Aurobindo philosophy and former Dean and Head of the Department of Education, Gorakhpur University.

On the Home Front

Keeping up the tradition of sharing individual human experiences and practising the motto of BITS, "*Knowledge is Power Supreme*", the faculty at various departments visit other institutes while their counterparts from elsewhere are invited to the campus. Thus there is a healthy interflow of ideas enabling the faculty members to keep themselves abreast of the recent developments in their respective fields. Described below are a few such efforts:

Chemical Engineering Group
On 16, January, Prof. B. V. Babu, the Group Leader, spoke on *A Different Evolution Approach for Global Optimization of MINLP Problems*, extracts from the *Fourth Asia-Pacific Conference on Simulated Evolution and Learning (SEAL'02),*

Singapore, held during 18-22, November. This was followed by Mr. Rakesh Angira and Mr. A.S. Chaurasia, who spoke on the *Optimisation of Non-Linear Chemical Processes using Evolutionary Algorithm* and *Modelling and Simulation of Pyrolysis: Effect of Convective Heat Transfer and Order of Reactions.* The talk was an outcome of their discussion at the experience at the **Indian Chemical Engineering Conference-2002**. This was the 55th Annual Session of Indian Institute of Chemical Engineering held at Hyderabad, during 19-22, December, 2002.

Mechanical Engineering Group

Mr. D.M. Kulkarni expressed his views on *Experimental Analysis of Fracture Criterion on General Yielding Fracture Mechanics,* based on the **Annual Paper Meeting of Indian Institute of Engineers** held at REC, Rourkela during 9 - 10, November. Dr. B. S. N. Parashar next commented on *Organisational and Behavioural Issues in the Implementation of Cellular Manufacturing Systems* and *A Review and Comparison of Different Methods for Determining Goodness of Solution in Group Technology,* presented at *The* **18th National Convention of Mechanical Engineers**, held at REC, Rourkela. Mr. S. P. Harsha attended the **2nd International Conference on Vibrational Engineering And Technology Of Machinery**, held at the Bhabha Atomic Research Centre (BARC), Mumbai, between 16-18, December, and delivered a lecture on *Non-linear Dynamic Response in*

Roller Element Bearing due to Surface Waviness under Radial Load. Based on his experience of the **47th Congress of Indian Society of Theoretical and Applied Mechanics** held at IIT Guwahati, 23-26, December, Mr. B. K. Rout held a seminar on *Parametric Robot Manipulator Design Optimisation using Taguchi Method.*

Biological Science Group

The group leader Dr. S.K. Verma gave a talk on *Biosorption of Radionuclides by Spirulina platensis.* This was followed by a short lecture on *Polymerism in MSP-1, a Leading Vaccine Candidate of P. falciparum* by Dr. A.K. Das and a lecture on *Bioremediation of Radionuclides* by Dr. Pinaki Sar.

Management Studies Group

The group actively organised many lectures on topics of current interest and relevance. Some of them include *Mall-Looking into shopping Mall development in India, The Model of the Demand for Medical and Health Services in Rural India, The Securitization Act and Industry Policy Reform, Emotional Intelligence and FDI in Retailing.*

Science Day

28, February is observed nationwide as Science Day at educational institutes to commemorate the discovery of the Raman Effect by Sir C. V. Raman. The Groups – Physics, Chemistry, Biological Sciences and Mathematics organised a series of popular

talks to mark this occasion. They also conducted an online Science Quiz, which received enthusiastic participation from students of all years and disciplines.

JOINING HANDS…

Two MoU's were signed by BITS – one with I²IT, Pune and another with the University of New South Wales, Sydney fostering bilateral collaboration and to promote academic and research interactions between both the parties.

Microsoft Research has agreed to set up the BITS – MS Centre for Mobile Computing at BITS as a part of their Indian programme. IBM Corporation has agreed to establish a new centre at BITS in the area of open source based computing including Eclipse – over – Linux platform.

A team of faculty and students at CSD (Centre for Software Development) in collaboration with the Oxford University's Trinity College, Sayeed School of Business and a team of researchers from Norway, Italy, UK and USA, launched a locally designed and implemented Metadata Search Engine for the Journal Server Freeware Digital Library project.

Visit of UGC Team

During 11-14, March, a UGC Expert Committee visited the Institute to review the progress during the Ninth Plan and discuss the allocation of grant during the Tenth Plan. Dr. C.R. Khetrapal, former Vice

Chancellor of Allahabad University, headed the committee. Others members of the committee were Dr. A.W. Joshi, retired Professor at Hyderabad University, Professor Nazim Ali, Professor of Economics, Aligarh Muslim University and Dr. Urmila Devi, Deputy Secretary, UGC as Member Secretary.

The team visited the various Divisions, Units, Centres and Groups as well as the Library building, hostels, Medical Centre and Akshay (BITS Cooperative Store). They appreciated the progress made during the Ninth Plan period.

As the visit was held during APOGEE, the annual academic fest, the team members

also visited exhibitions presented by different Discipline Associations.

Visit of Australian Delegation

A delegation from Victoria University, Australia, visited the institute during 7-8, April in view of collaboration in the area of Information Technology, a joint programme in research areas and a student-exchange scheme. Prof. Akhtar Khan, Deputy Dean, Faculty of Science, Engineering and Technology, Asst. Prof. Michelle Towstolles, Head of School, School of Biomedical Sciences, Dr. Danh Tran, Senior Lecturer, School of Architectural, Civil and Mechanical Engineering, and Dr. Swati Baindur-Hudson, Senior Lecturer, School of Molecular Sciences (DNA Finger-printing, Food) were the members of the team.

The team visited the Biology, Robotics, Pharmacy, EEE and Mechanical Engineering Laboratories, the workshop, the Information Processing Centre, and the new buildings. They expressed interest in research in the areas of Bio-Sciences, Pharmacy, Power Systems and Robotics.

Major Projects

ILO-ASIST AP (Advisory Support, Information Service, and Training – Asia Pacific) has funded a pilot project on the *Application of Integrated Rural Accessibility Planning (IRAP)* in Rajasthan. IRAP is a participatory planning tool for the use of officials and representatives of local government for rural infrastructure planning.

The National Rural Development Agency (NRDA), Ministry of Rural Development, Government of India has chosen BITS as one of its seven Principal Technical Agencies (PTA) in India. The main task of a PTA is in advising the Ministry on technical and operational matters concerning *Prime Minister Gram Sadak Yojana* (PMGSY) and will be coordinated by Dr. A.K. Sarkar.

A major research project entitled "*Development of Bacterial Biosensor for the Detection of Antibiotics*" has been granted to Dr. S. K. Verma, Group Leader, Biological Sciences Group. This project is aimed at developing a novel bacterial strain, which will work as biosensor for accurate and faster detection of antibiotics by using modern recombinant DNA technology.

ACHIEVEMENTS

IBM Great Minds Challenge

A five-member team from BITS, Pilani emerged victorious in the IBM Great Minds Challenge, a nationwide contest announced by the IBM university program in November 2002. Over a hundred universities in India vied for the top honours, with various stages of screening at institutional, zonal and national levels. In an award ceremony at the Hyatt Regency, Mumbai on 27, March, the

BITS- Pilani team, comprising Anshuman Dimri, Harshavardhan Jegadeesan, Shaik Shahid, Sreedhar Racherla and Venkatesan

V., was awarded ceritificates, mementos, a Palmtop each and a trip to the IBM India Research Centre. The winning project, *Panchayat Information System*, was an e-governance initiative aimed at empowering the panchayats.

Microsoft Research Internship

A team of two students (Gaurav Mathur and Saurabh Deshpande) belonging to CS-IS group has been selected by the researchers at Microsoft Research(MSR) from amongst 20 students from select Indian Universities (including IITs, BITS, IIITs etc) for continuing a two month research internship at Redmond USA. A total of five students were selected from India.

ACROSS THE SEAS

During the month of June 2003, Prof. S. Venkateswaran, Director and Prof. V.S. Rao, Deputy Director (Off – Campus Programmes) visited Germany and France.

They visited Siemens Automation & Drives Division of Karlsruhe, Berufsakademie, Karlsruhe and Infineon Technologies, AG in Germany and held discussions regarding the Practice School Programme, related operations and Student Exchange Programme.

Prof. V.S. Rao visited University of Trento, Italy and reviewed Practice School operations and discussed future collaborations. During his visit to the USA, Prof. Rao attended the core group meeting of BITSConnect, San Jose, CA, USA. At Stanford University, he held discussions with Prof. Krishna C. Saraswat about the career options for BITS students at Stanford. He also visited Cypress Semiconductors, San Jose, USA and held discussions with the senior executives regarding Practice School in California and in India. Further, Prof. Rao also held discussions at Sierra Atlantic, Ensim Corporation, Pinnacle Systems, Fabric7 Systems, Cisco Systems, LogicVision, Iowa State University, Western Michigan University, Binghamton University, University of Central Florida on collaborative programmes, Practice School programmes and students/faculty exchange programmes.

In July, 2003, Prof. L. K. Maheshwari, Deputy Director (Academic) visited Rajasthan Association of North America (RANA), New York to present a project on *Drinking Water Management* in

Rajasthan which was attended by a delegation led by the Chief Minister of Rajasthan, Shri Ashok Gehlot along with his three Cabinet Ministers and many officers. Further, Shri Lalit Mansingh, Indian Ambassador in USA, Maharaja of Jaipur, Shri Gaj Singh and 1300 delegates, many of them NRIs attended the conference. RANA has committed a fund support of Rupees One Crore for this project which the Chief Minister suggested be given directly to BITS for taking up *Water Harvesting* schemes in and around Pilani.

Later he visited the Uniformed Services University of Health Sciences (USUHS), Bethesda, Maryland to enhance the collaborative *educational opportunities* between USUHS and BITS. Also a visit to National Institute of Health and the National Cancer Institute at Frederick helped in enhancing the cooperation between the two parties in research and student programmes.

His visit to Carleton University, Ottawa (Canada) further strengthened the technical exchange between BITS and Carleton University.

He also visited the Center for International Development and Conflict Management (CIDCM) at the University of Maryland, College Park and discussed details about International Conference and Workshop on Conflict Management to be held in BITS in October, 2003. It is expected that a course on Conflict Management can be started with cooperation with CIDCM.
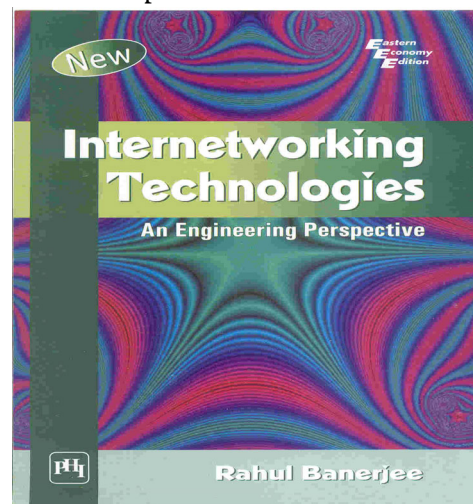
At the invitation of the Transport Research Laboratory Ltd., UK, Dr. A.K. Sarkar attended a thematic workshop on *Framework for the Inclusion of Social Benefits in Transport Planning* in Barknell, UK during 21-22, March.

At the invitation of the International Labour Organization (ILO), Dr. A.K. Sarkar attended the 3rd Regional Integrated Rural Accessibility Planning (IRAP) workshop in Bangkok, Thailand during 27-28, March. He presented a paper on *Application of IRAP in Rajasthan.*

In July, Prof. Rahul Banerjee visited MSR (Microsoft Research) at Redmond, Washington for a discussion on collaborative research projects between MSR and BITS.
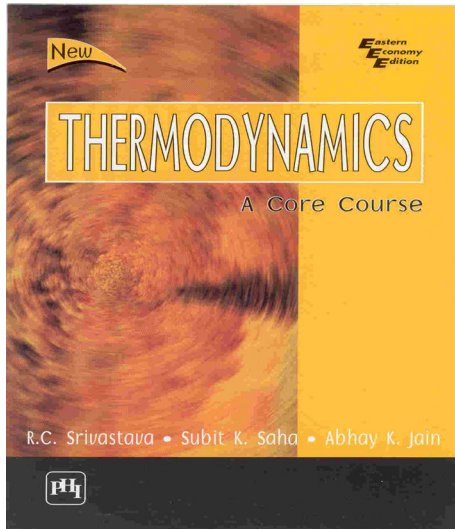
In Print

The following books by BITS faculty members were published:
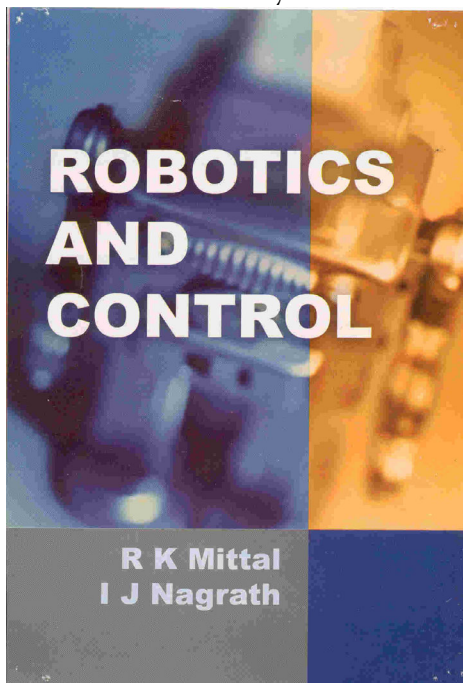

Internetworking Technologies – An

Engineering Perspective by Prof. Rahul Banerjee.

Thermodynamics – A Core Course by Dr.

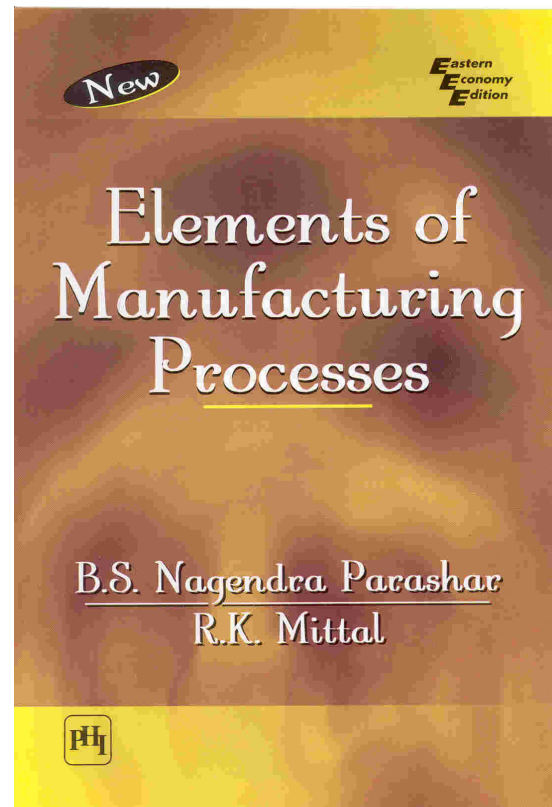Subit K. Saha with Prof. R.C. Srivastava and Prof. Abhay K. Jain.

Robotics and Control by Prof. R. K Mittal

and Prof. I. J. Nagrath.

Elements of Manufacturing Processes by

Prof. R. K. Mittal and Dr. B. S. Nagendra Parashar.

INTERFACE 2003

A Conclave of Budding Managers

The Management Association organised the

26th All India Management Convention during 7-9, February. This year's **Interface**, with the theme "DHRUV – Leadership

Forever" witnessed several changes as compared to the conventions of previous years. The convention aimed at providing a platform for learning and sharing for the students, who found the entire exercise extremely beneficial.

Dr. P.L. Sanjeeva Reddy, Director, Indian Institute of Public Administration was the Chief Guest of the Inaugural Function of the three day convention which saw a lot of activity in the form of Workshops, Invited Lectures and Management Games.

Dr. Raghuvir Singh, Ex – Group Leader, Management, conducted an excellent workshop on " *Optimism *". Mr. Arvind Kalia from the Poddar Institute of Management, Jaipur regaled the audience with anecdotes in his extremely enjoyable workshop on "*Creative Thinking*". Dr. Sai Ramachandran, Ex – GM Dabur India Ltd., delivered an interesting lecture on

"*Leadership in the Mahabharata*".

Interface 2003 also witnessed several exciting management-oriented events and games that attracted participants not only from BITS but also outstation participants from Pune, Jaipur, Delhi and Noida. The convention also witnessed lectures on some

basic issues in Management, conducted by the students themselves.

Mr. Manoj Agarwal, the convenor of the first ever Interface, the Chief Guest for the Valedictory Function spoke about "*Entrepreneurship and Leadership Development*"

APOGEE 2003

The Quest for Knowledge

APOGEE (A Professions Oriented Gathering over Educational Experience) is the annual All-India inter-collegiate academic festival of BITS, Pilani. Begun 21 years ago as a forum for the display of students' project work, APOGEE has gone from strength to strength over the years to become the prestigious annual event it is today.

Reinventing ourselves

One of the factors behind success is the willingness to change, to evolve. APOGEE 2003 was structured around this desire to

evolve. A number of new application-based

contests, lectures, and workshops were introduced in addition to the existing exhibitions of the various disciplines of learning, making the event extremely interactive and participative, while focusing on overall learning.

A fitting beginning

An elegant, streamlined inaugural ceremony marked the beginning of APOGEE 2003. The ceremony started with a compact CCTV (Close Cable Television Network)/Flash presentation, displaying the major endeavours to be undertaken by the various Discipline Associations. The members of the Council of Students for Academic Activities (the CoStAA body) were then introduced. The inauguration was presided over by the Director, Prof. S. Venkateswaran. In his inaugural address, the Director recounted the birth and growth of APOGEE.

Exhibitions, Projects

The various discipline associations – belonging to the Sciences, Engineering and Humanities – put up exhibitions where the students displayed projects they had worked on. These included working and non – working models, and interactive computer – aided displays, with the students guiding visitors through the exhibits. The associations also conducted competitions, quizzes and other events which saw enthusiastic participation.

Here are some of the major displays during APOGEE:

The **Electrical & Electronics Engineering** models included *Automatic Speech Recognition*, *Wireless Keyboard*, *Robotic Path Planning* and *Intelligent Lighting*. There were also projects related to *VLSI Design*.

The **Electronics & Instrumentation** students presented *Telemedicine*, *PCO Billing*

System, *Temperature Level Control* and a project on *Image Compression*.

The **Pharmacy** group stressed on non-working exhibits like *Neuro Transmission*,

Biochemical Processes, Pharmacokinetic Modelling and *Oscillatory Motion.*

The life-size simulation of a *suspension bridge* and a *cricket pitch* brought the spotlight on the **Civil Engineering** camp. Other exhibits included *Rainwater Harvesting, Interlinking of Rivers* and *Flocculator.* A section described construction of world-famous structures.

The **Mechanical Engineering** association modelled *A Pelton Wheel, Biodiesel, Water*

Tunnel and *Automated Parking Lot.* There was also an exhibit by a student of Madras University on *Evolution of Robocrane* and *Human Humanoid Interface.*

The showcase of **Engineering Technology** consisted of *Ice-Maker, Lean Six Sigma Management* technique and a simulation of a *Nuclear Power Plant.*

The projects of the **Computer Science** students were mainly based on *Network Security,* using *One-way Hash Function* and *Pattern Recognition.* A mouse that moved in the air was amongst the non-pure-software exhibits.

The **Economics and Finance** association put up projects on *Accounting Basics, Taxation, Stock-trading* and *Euro – Dollar battle.*

The **Information Systems** projects, aimed at making computing more secure and user – friendly, included *Active Networks, Software Routers* and *Designers' Luxury.*

The application-oriented **Chemical**

Engineering exhibits included *Cascade Semi-permeable Continuous Flow Centrifugal Separator, Hydro Boost Device* to improve mileage by electrolysis and *Reactive Distillation* to reduce costs of the distillation processes.

The **Mathematics** models attempted to solve everyday problems using mathematics. The *Fuzzy Logic* to balance an inverted pendulum and Network Routing using *Dijkastra's Algorithm* were some of them.

The **Physics** society's models on *Sundial, Global Positioning System, Gyrometers* and application of *Interferometer* to measure

wavelength of light and the **Chemistry** association's *QSPR Model, Neural Networking, Conductive Polymers* and *Quantum Tunnelling* were the attractions of these Science Groups' exhibition.

The **Biological Sciences** association had in its exhibition *Bio-leaching of Metals, Treatment of Industrial Effluents, Reversed Microwave Bioreactor, e-diet* and *Cordless Stethoscope.*

With *War for Peace* as the theme, the **Languages & Humanistic Studies** Association depicted in models the *Kashmir Controversy, the LoC, PoK, the Amar Jawan,* besides warships and missiles.

Competitions

Several creative and informative competitions were organized during APOGEE which received participation from both BITSians and outstation participants. Some of contests were:

Quizzes: *Brain of BITS, Over-Head Transmission, Mastermind in Mathematics, Byte for Thought, Quintronics and Biome*

Programming skill tests: *Swordfizz* - the hacking contest, *Flexible Software* to develop the most versatile program, *Chaos* - writing the most confusing code to perform a task and *Cyberfiesta* - presentation of pre-developed utility-based software's

Technical designing contests: designing analog circuits (*Exclusively XOR),* cars (*Hot Wheels)* and the most efficient truss in *Truss Depot.*

Fun-oriented contests:
Whodunit - participants were to identify a fake culprit using forensic science; *Chimaera* - creating the species fittest for survival under given conditions; *Forex Game* - estimating the value of currencies; *Save our Souls* - to design a maximum load bearing ship from aluminium foil.

Workshops

Aimed at spreading knowledge about some inquisitive topics, several interactive workshops were organised by the related discipline associations. The workshop on latest developments in the field of electronics and computers, **Cutting Edge** saw talks on *Semantic Web, GSM, CDMA, TDMA* and *MEMS.* There were workshops on *Video Conferencing, Networking, Artificial Intelligence, .NET technologies, Cosmetics and Drug Delivery, 'How Things Work', Light Wave Technology* and a four-day Astronomy workshop with several lectures and sky observation sessions.

Invited Lectures

Renowned specialists from India and abroad delivered interactive lectures before an enthusiastic and responsive audience. There were a series of lecture on VLSI designs by **Prof. Dinesh K. Sharma**, Department of Electrical & Electronic Engineering, IIT Kanpur and **Dr. Chandra Shekhar**, Group Leader of IC design group at CEERI, Pilani. The lecture on "Biodegradation" and "Toxic Assays" by **Dr. Benoit Guieysee** from Lund

University, Sweden was highly attended. **Mr. Ramnath** of Novell Software, Bangalore presented the talk on network security, the internet and its vulnerability. Uncovering the scientific basis for *Vaastushastra,* the lecture by **Dr. Ganapati Sthapati** on *Vedic Architecture* unfolded various interesting aspects of construction and 'study of space'.

WEAVING A NETWORK

Funding BITSConnect

BITSConnect is a $1.5 million (Rs. 7 crores project) jointly led by BITS alumni and BITS Pilani, to give the Institute a state-of-the-art campus-wide network by December 2003. This would result in a gigabit backbone, broadband access and telephones and video conferencing abilities (IP telephony) in every room in every bhawan, all staff quarters, each student rooms and the guest house, as well as wireless access in Sky and the Library. Alumni from Wipro and Cisco were able to halve the original costs without compromising on the technical aspects. Of the cost, $750,000 will be raised by old students, a core-group in the US already having pledged $350,000. In this connection, a music performance was conducted in Bangalore in July to raise funds *[see "BITS Connexion", later in this issue].*

Some of the old students who have come together to work towards a new identity for BITS are Vivek Paul, Wipro Vice-Chairman, Rajeev Maliwal of Fabre Capital, Hotmail founder Sabeer Bhatia, Rajesh Hukku of I-flex, Gullu Mirchandani of Onida, writer Dilip D'Souza, Dinesh Mirchandani of Boyden Global Executive Search, and novelist and columnist Shashi Warrier.

ONWARD

Communicating with felicity

The renovated language laboratory was inaugurated on 16, April, 2003 by the Director, Prof. S. Venkateswaran. The inauguration of the language laboratory refurbished with the new, novel and nascent nuances to teach language has opened new avenues in language learning now.

The language lab is a beginning to perfect the various skills needed to empower language.

With the help of several computers and numerous CDs, language learning now generates in the students a desire to learn with fun.

Teaching the four skills - LSRW now lays due emphasis on pattern and pronunciation, accent and accuracy.

Though primarily designed for language learners, the language lab can be utilized for developing communication skills of students across the Institute.

A Class Apart

This July, the new Lecture Theatre Complex was completed and handed over for use. Housing gallery lecture theatres (two of 400

and four of 200) built around a central amphitheatre, the new complex boasts of such facilities as video projectors, overhead projectors, sound system and an expansive bicycle parking area outside.

The Complex works well with the new teaching methodology with large sections for

lectures and smaller ones for tutorials. It has been a success, with students thronging to it in hundreds.

CARING BEYOND OUR WALLS

Health Camp

Gyanganga - Social development project - organized a health camp in Raila, Jherli

Grampanchayat on 27, February, 2003. The villagers were provided general health and dental check-up, women's health check-up and children's health and immunization services.

More than 500 people – men, women and children took advantage of this camp. Prof. L.K. Maheshwari and Prof. H.S. Moondra graced the occasion by visiting the camp.

Blood Donation Camp

National Service Scheme (NSS) is one of the active wings of social service in BITS, Pilani. It has been organizing blood donation camps for the last 30 years jointly with Indian Red Cross Society (IRCS) New Delhi. It has had a donation of more than 700 units of blood every year on voluntary basis from among our Students and Staff members. This year, during 21-23, March, more than **868 units** of blood were collected during the camp. Doctors from Indian Red Cross Society, New Delhi assisted the process of the camp and all the blood units were sent to Indian Red Cross Society, Delhi.

The blood donation camp in BITS Pilani is a unique event in the Universities of all the South Asian Countries. And the culture of blood donation has been developed and maintained over the years with constant enthusiasm and dedication from the voluntary donors i.e. students and staff members of BITS Pilani. Blood donation of such a magnitude is maintained through the active involvement of NSS volunteers for more than last three decades. The camp was regulated and monitored by Ms. Poonam Agrawal, President, NSS with the help of more than 100 active volunteers.

African Sojourn

Dr. Motilal Dash had been nominated to represent the Rajasthan Forum Group of the International Forum for Rural Transport and Development (IFRTD) at the Regional Workshop on Improving Mobility for the Rural Poor scheduled during 20 – 23 January at Morogoro, Tanzania, Africa.

The four-day workshop had various components such as panel discussions, field visits, participatory research methodology etc. Dr. Dash participated in most of the activities and coordinated one of the filed trips in the tribal belt of Tanzania. The experiences learned during the workshop will be shared in different projects carrying out by the Forum members here at BITS.

Open Medical Camp

On 1, April, 2003 an Open medical camp was organised by the Community Welfare unit and the Pharmacy Group for the diagnosis of Osteoporosis (reduction of bone mass). The camp offered a free test for *Bone Mineral Density*, towards a cure of Thyroid disease, Arthritis, Symptoms of Joint Weaknesses and Kidney Dysfunction.

The camp was inaugurated by Prof. K.E. Raman, Deputy Director (Administration) accompanied by senior faculty members. Dr. R. P. Pareek was the chief coordinator of the program supported by Pharmacy faculty and students. According to the Pharmacy Group Leader Dr. R. Mahesh around 1200 patients were benefited by the health camp and the response from people was good. The camp was sponsored by *Elder Pharmaceuticals*.

SPIRITUAL YEARNINGS

Swamini Vimalananda

The Vivekananda Seva Samithi time and again has brought to campus personalities who deliver lectures on spirituality and personality development.

This semester BITSians had the privilege of listening to Swamini Vimalananda, a prolific speaker and brilliant disciple of Pujya Gurudev Swami Chinmayananda.

It was a three-day lecture series arranged in the Engineering Theatre but due to very good turnout on first two days, the last day

of the lecture was held in the auditorium.

The Swamini enlightened the minds of BITSians with her simple, dynamic and interactive style.

Swami Anubhavananda

The BITSians also had the privilege of attending lectures by Swami Anubhavananda, a noted spiritualist and an erudite scholar who is the creator of the

series *Mauj Mein Raho*.

He conducted meditation classes - both theory and practice - and delivered three public lectures from 15-17, February. His lectures revolved round the concept of attainment of happiness from one's love for inner self.

CREATIVE ZONE

Sangamam

Sangamam, a music and dance festival of classical flavour is an annual event organized by Ragamalika. Musicians from all over the country perform for a spectrum of audience.

Sangamam 2003 was organised during 14-16, February. Inaugurated by Pandit Shri Shankar Shanbogue and presided over by
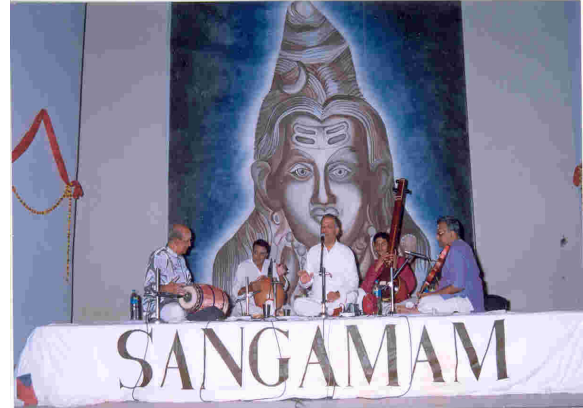

Padmabhushan Umayalparam Shri K. Sivaraman, the opening session of the festival also saw the release of Dwani, Sangamam souvenir, by the Director, Prof. S. Venkateswaran This was followed by a host performance by the members of Ragamalika.

Pandit Shri Shankar Shanbogue , the Hindustani vocalist mesmerised the audience with his scintillating performance.

He also sang songs that suited the occasion of Valentine's Day. The second day, saw the Sangamam audience spellbound by the soft and blissful songs by Shri O.S. Thiagarajan. On the third and final day Shri Umayalparam K. Sivaraman enlightened the audience with his lecture demonstration on

The Voyage of Mridangam and its High Voltage Art.

The 3-day long festival came to a close with the mandolin performance of Shri U.P. Raju and Smt. P. Nagamani and left the audience with a rich and memorable experience.

SPICMACAY

The activities of the semester began with a *Kathak* performance by **Padmashree Shovana Narayan** on 25, January. *Padmashree Bharati Shivaji* regaled the BITSians with her wonderful *Mohiniattam* performance on 9, March.

On the music front, SPICMACAY organised on 22, March a Carnatic vocal recital by Sri T. V.Gopalkrishnan (fondly called TVG)

who is also an adjunct of the BITS Music

faculty. 25, March witnessed the Mohan Veena recital of Pandit Vishwa Mohan Bhatt, Grammy award winner and a musician of international repute. The delicate, yet fiery music that he created was truly scintillating.

Playing to the Gallery

The **Hindi Drama Club** presented three plays based on themes ranging from a light comedy to serious issues like mercy killing in the plays *Hai Mera Dil* and *Fandi*. The last one was *Maut Ke Saye Mein*, describing the fate of some unfortunate French soldiers in German custody during World War II. The semester saw the last performance of several veteran actors of the club.

The **English Drama Club** kept the audience glued to their seats with their semester production *Wait Until Dark*. It was an action-packed suspense thriller based on a Fredrick Knott creation.

RAF Cultural Show

In January, the Recreational Activities Forum (RAF) organised a cultural show, showcasing performances by the Dance Club, Music Club and Raagamalika. The show, the first of its kind, made for an electrifying evening.

The initiative by RAF to expand its activities to include cultural performances was wholeheartedly appreciated.

Founder's Day

In honour of the Founder Chairman of the Institute, Shri G. D. Birla, Founder's Day was celebrated on 6, February, the Basant Panchami Day. The day began with floral tributes by the faculty members and students to the Founder Chairman at his statue. This was followed by the *Thyagaraja Aradhana*, organised by Ragamalika as a tribute to Saint Thyagaraja, one of the members of the

Trinity of Carnatic music. Over sixty students participated in the devotional event

and spellbound the audience with their expert music performance. The evening saw the auditorium vibrant with colour, music and dance as part of the Cultural Programme. The various regional associations enthralled the audience with their music and dances unique to their regions.

MUSIC FOR A CAUSE

Indus Elementz

In this age of dual citizenship and emigration, a group of Indian students including BITSians are trying to give back to their motherland in the way they know best – through music. A group of thirteen Indian students from various engineering institutions such as BITS-Pilani, IIM-Lucknow, IIT-Delhi, IIT-Guwahati and REC Trichy bound by a common interest in music formed the **Indus Elementz** playing popular Indian tunes for the benefit of **Association for India's Development(AID), Penn State**

Chapter in the United States. The proceeds from their concerts go to earthquake rehabilitation, women and lower-class empowerment and food supply development projects in India.

BITS Connexion

On 6, July, the Chowdiah Memorial Hall, Bangalore, witnessed a unique musical performance put together to raise funds for the BITSConnect project aiming at networking the BITS campus. Envisioned by the BITSAA (Bangalore Chapter) and organised by Mr. Vikram G. Shah (an ex-BITSian and MD of Andiamo Software Systems), the evening, entitled "**Reconnect**

for BITSConnect" was organised with Phase II – an Event Management group based in Bangalore. With sponsors including big names such as HCL, Hughes, Wipro, CISCO, i-flex, Tanishq etc. and tickets selling out weeks before the event, the stage was set for a mega-event. The 1100-strong crowd witnessed performances that will not be forgotten for a long time. The first half of the evening saw the senior ex-BITSian

Clubbers take the stage, reliving the era of KL Saigal, Manna Dey, Rafi and Mangeshkar. After a small break the new generation Music Clubbers ('97 to'02) took over. Armed with more modern instruments and loads of confidence they won over the audience, playing AR Rahman, RD Burman, Pink Floyd, Cranberries…

The grand finale to the evening was the presentation of a cheque worth Rs. 35 lakh to the Director, Prof. S. Venkateswaran, who witnessed the entire event and appreciated the performances as well as the efforts of the ex-BITSians whole-heartedly.

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MEDIASPEAK

BITSian is the key architect of two social movements - Bangalore's Janaagraha movement for Urban Development and Sanghamithra- a pioneering micro-credit institution! Ramesh Ramanathan, MSc Physics from BITS and MBA from Yale, and the former MD and European Head for Structured Products at Citibank now presides over one of India's most successful urban movements and also serves as a Vice Chairman for a trail-blazing organization that strives to improve the lives of the poor by lending them money! Residents of Bangalore appreciate Ramesh's work as the Key Architect of the citizen movement for a Better Bangalore (Janaagraha).

BITSAA International Inc.

[WEDNESDAY, APRIL 9, 2003.]

"The alumni of the Birla Institute of Technology and Sciences (BITS), Pilani, have joined hands with the institute's management to transform the institute and put it on par with the world's leading universities of the West. The institute wants to be ranked as number one in Asia in terms of networking and connectivity. Although other institutes such as IIT Kanpur and IIT Bombay have taken initiatives to introduce audio-video connectivity in their campuses, the institute hopes to score over the IITs once the BITSConnect project is complete."

Express Computer India

[MONDAY, JULY 21, 2003.]

BITS, Goa In Progress