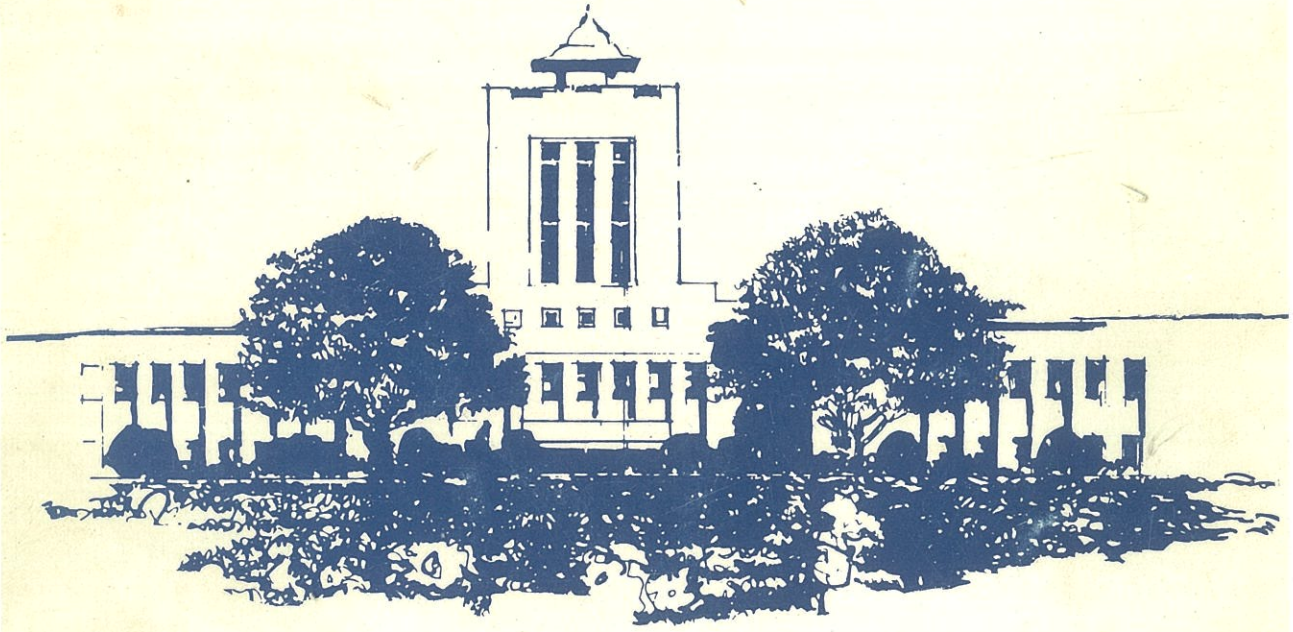
ANNUAL REPORT
1998-99



BIRLA INSTITUTE OF TECHNOLOGY
MESRA, RANCHI (INDIA)

ANNUAL REPORT

1998-99

BIRLA INSTITUTE OF TECHNOLOGY
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VICE-CHANCELLOR'S REPORT

In the present era of "Information", service providing organisations are expected to respond to the changing environment aptly. BIT during the period under report has tried most effectively to conform to this requirement. It has tried to consolidate the existing teaching, training and research programmes and at the same time continued its endeavour to expand academic activities in different Extension Centres as well as in its main campus. It has also entered into designing and initiating collaborative academic programmes at both Under-graduate and Post-graduate levels. The prominent collaborative agencies are Indian Railway Institute of Mechanical & Electrical Engineering (IRIMEE), Jamalpur, Ministry of Railways, Government of India, Technical Teachers' Training Institute (Eastern Region), Calcutta, Ministry of Human Resource Development, Government of India and The Institution of Engineers (India), the largest body of professional engineers in India. The Institute believes that each of these collaborative programmes would lead to enhance the intellectual capability of its faculty members, enrich the contents of syllabii of different programmes organised by it and at the same time open up opportunities for further studies at under-graduate level for fresh candidates as well as Post-graduate level to practising professionals.

The Institute has initiated academic activities at its NOIDA Extension Centre by organising a 3-Yr. (6-semester) Bachelor of Computer Applications (BCA) programme. The first batch of students were admitted in this programme during Dec. '98 to Jan.'99 and the next batch is expected to commence their classes from July '99. Introduction of a three year (6 Semester) Master of Computer Applications (MCA) programme is being planned from Dec. 1999 / Jan. 2000. The three year (6 Semester) BCA course was also concurrently initiated at the Lalpur Extension Centre, Ranchi exclusively for girls. The boys of the town will be able to enroll themselves for the same programme to be conducted as an evening programme at the centre in the near future. The preliminary groundwork to establish the initial infrastructure at the International Centre located at Bahrain is now on and the same is expected to become operational during this calender year itself.

At the Post-Graduate level three more specialisations in the M. Pharm. programme namely, Pharmaceutical Biotechnology, Pharmacology and Pharmacognosy were introduced. A new one year Post-Graduate Diploma Programme (Part-Time) on "Industrial Safety Management" will also be initiated within this calender year for practising professionals.

The Institute through its extension centre at Lalpur is also offering three months / six months Certificate Programmes in the area of D.T.P. and plans to organise programmes on Internet within a short period of time.

The Institute organised a number of special lectures delivered by eminent personalities from different academic institutions of repute and importance like Indian Institute of Management (Calcutta), Motilal Nehru Regional Engineering College (Allahabad), School of Planning and Architecture (Delhi), Jadavpur University, Regional Institute of Technology (Jamshedpur), Bihar College of Engineering (Bhagalpur) and Indian

Association for Cultivation of Science (Calcutta). The experts delivered lectures in the field of Operational Management, System Management, Marketing Management, Town Planning and Architecture, Water Resource and Geotechnologies, Quality, Productivity, Advanced Manufacturing Systems, Design of Engineering Systems, Material Science etc.

The Institute had organised three academic interaction programmes in the form of (i) National Symposium on Instrumentation during 7-10 Oct. 1998, (ii) National Seminar on Pharmacy, Education and Research- Yesterday, Today and Tomorrow during 8-10 Nov. 1998 and (iii) National Convention on Indian Space Programme for 2000 and beyond : A Perspective, between Dec. 14 & 15, 1998. Through these programmes the faculty, research staff and students of this Institute could reinforce interaction with their counterparts in other institutions, research laboratories and industrial organisations.

The Institute augmented the laboratory and academic infrastructure by procuring two networks each with 20 Pentium II nodes, 15 PII level Systems besides up-grading 10 existing 486 Systems to Pentium levels. Special application softwares for carrying out Finite Element Analysis (ANSYS 5.4), Static and Dynamic Analysis for design of engineering systems (ADAMS, I-DEAS), as well as for Computer Aided Manufacturing (SMART CAM), Computer Aided Planning (CAFIMS) have also been procured. Several polymer processing equipment as well as a sophisticated Rheological Properties Measuring System has also been imported to create the basic infrastructure for the Polymer Engineering Department. Text books worth around Rs. 4.50 lakhs have also been procured during the period under report.

In recognition of the contribution made by the Institute towards imparting cost effective quality education in the domain of Engineering, Technology, Applied Sciences and professional disciplines the UGC has sanctioned an additional grant of Rs. 51.90 lakhs under the 9th 5-Year Development Programmes. The Commission also sanctioned a grant of Rs. 50.00 lakhs towards creation of infrastructure for the Post-Graduate programme i.e. M.Tech. (Remote Sensing). The sanction also includes additional provision for paying scholarship to 10 GATE qualified students admitted to the programme every year. The Ministry of Human Resource Development has also identified the institute to be eligible for increasing the annual intake in the Bachelor of Computer Science programme to 60 (sixty) from the present level of 30 (thirty). This is expected that the incremental intake would be initiated during the academic session 2000-2001. The Institute has also been identified jointly by Ministry of Human Resource Development and Department of Electronics to be one of the five institutes, excluding the IITs to receive PARAM-10000 Computer System, the most powerful computer system available with any academic institution.

The Institute faculty members have been successful in establishing their claim as frontline researchers in the respective domains/disciplines. During the year under report, funding to the extent of Rs.145.00 lakhs could be secured from agencies like University Grants Commission, All India Council for Technical Education, Department of Science & Technology, Government of India and Department of Science &

Technology, Government of Bihar for carrying out research in 15 identified research programmes. Another 20 research proposals have been submitted to different agencies including those already mentioned as well as Defence Research and Development Organisation (DRDO) and Indian Space Research Organisation (ISRO).

The students passing out in the different Under-graduate and Post-graduate programmes from this Institute have been provided with job opportunities through Campus placement services. The acceptability of such students to the various multi-national, national and local employers continued to maintain a fairly high level. The slight downward trend for job opportunities for MBA candidates in recent past was effectively controlled and the placements of such students have distinctly improved during the period under report.

It is extremely gratifying to note and report that one of the alumni of the Institute, Shri Vijay Ruhela, has taken a leading part in pursuading his US employer to donate 50 (fifty) stand alone PCs of 486/Pentium configuration.

The Science and Technology Entrepreneurship Park and Small Industries Research & Development Organisation continued their activities with active support and collaboration from BIT, its faculties and staff. The second session of Small Industries Management Assistant's Programme (SIMAP) was organised successfully. Small Industries Development Bank of India (SIDBI), the principal sponsor of the programme has identified BIT-STEP to be one of the few centres to organise the SIMAP programme on an annual basis. The Department of Science & Technology, Government of India, also funded a few programmes for upgrading skills at the technician/workmen level in the trades of Masonry, Electrician, D.T.P. etc. These programmes are exclusively intended for the local youth and are designed to increase self-employment opportunities for them.

The students of the Institute organised several cultural programmes including the Annual Events. They also participated and won laurels in different programmes organised at other institutes. The students of the Institute represented in "SF-99" at IIT, Kharagpur and in "SATURNALIA-99" at ISM, Dhanbad. It is a pleasure to inform that our students bagged two First Prizes in both the events. The Institute as usual had organised sports events sponsored by the Association of Indian Universities in the form of East zone competitions in Football and Kabaddi and the inter-zone (All India level) competitions of Kabaddi. Besides these, the Intra Universities sports events in all disciplines were also organised. The students of MBA programme stood second in East Zone Complete Manager's Contest organised by CNBC. They also organised a 3-day painting exhibition "Chitrakala Pradarshani" held at Institute's Lalpur Extension Centre.

During the period under report, the Institute has made all round progress and significant advances have been made is upgradation of the laboratories and curriculum. New programmes in the interdisciplinary and emerging areas of technology are also being planned.

GENERAL REVIEW

Brief History

The Institute was established as an All India Institute for imparting technical Education and Research in 1955 by the Hindustan Charity Trust. Initially it functioned as an affiliated college of the erstwhile Bihar University and later in 1960 upon creation of new Universities in the State, its affiliation was transferred to the Ranchi University.

In pursuance of the recommendations of the Education Commission, Government of India (1964-66) and on the basis of the report of a Joint Selection Committee of the UGC and AUDIT, in March 1972, the Institute was granted the status of an 'Autonomous' College by making special provision in Bihar State Universities Act. The Rules for its governance were made by the Chancellor of the Universities of Bihar.

The achievements of the Institute, both in terms of research and excellent academic programme, led to its attaining the status of a deemed University under section 3 of the UGC Act in August 1986.

The Institute has constantly improved on its technical facilities as well as academic standards in order to keep pace with the fast changing technological scenario, thereby acquiring a pride of place amongst the Institutions offering technical education in the country.

Courses & Degree Programmes

Currently it is offering a variety of curricular programmes as detailed below :

Course	Intake capacity	Duration of Course	Year of Introduction of the Course
I. Bachelor's Degree Courses			
1. Electrical & Electronics Engg.	45	4 years	1955
2. Mechanical Engg.	90	do	1955
3. Civil Engg.	60	do	1957
4. Electronics & Comm. Engg.	60	do	1964
5. Production Engg.	30	do	1964
6. Pharmacy	30	do	1972
7. Computer Science	30	do	1983
8. Architecture	40	5 years	1993
9. Polymer Engg.	30	4 years	1995
10. B.Sc. (Comp. Sc./Electronics)	30	3 years	1996
11. Computer Applications	30	3 years	1998

II. Master's Degree Courses

1. Electrical	12	1 1/2 years	1964
i. Control Systems			
ii. Power System			
2. Mechanical	6	do	1964
i. Heat Power Engg.			
3. Civil	2	do	1965
i. Soil Mechanics			
ii. Structural & Foundation Engg.			
4. Electronics & Communication	12	do	1965
i. Instrumentation			
ii. Microwave			
5. Space Engg. & Rocketry	10	do	1965
i. Rocket Propulsion			
ii. Aerodynamics			
6. Business Administration	30	2 years	1980
i. Marketing			
ii. Finance			
iii. Systems			
iv. Industrial Management			
7. Pharmacy	10	1 1/2 years	1983
i. Pharm. Chemistry			
ii. Pharmaceutics			
iii. Pharmacology	2	1 1/2 years	1998
iv. Pharmacognosy	2	1 1/2 years	1998
v. Pharm. Biotechnology	2	1 1/2 years	1998
8. Computer Applications	30	3 years	1984
9. M.Sc. Bio-Medical Instrumentation	15	2 years	1992
10. M.Sc. Information Science	15	2 years	1993
11. M.Tech Remote Sensing	15	1 1/2 years	1996

III. P.G. Diploma Courses

1. Computer Applications	30	1 year	1988

IV. Continuing Education (Part-time) Post-Graduate Programme

To enable working Engineers to update their technologies, the part-time Post-Graduate Programme offers 3 levels :

1. A Certificate of Merit after completing 5 units.
2. A Diploma after completing 10 units, and
3. A Degree after completing 15 units.

The Disciplines, Intake capacity and Duration are :

Course	Intake capacity	Duration of Course	Year of Introduction of the Course
1. M. E.	-	3 Yrs.	1974
Civil Engineering			
Electrical Engineering			
Mechanical Engineering			
Industrial Automation			
2. Management			
M.B.A.	30	3 Yrs	1980
3. Computer Applications			
M.C.A.	30	4 1/2 Yrs.	1984
D.C.A.	30	1 1/2 Yrs.	1988
4. M. Tech. Computer Sc.	30	2 1/2 Yrs.	1996

In addition to the above, a number of courses in other specialization have been planned.

V. Doctor of Philosophy

The Institute offers Research Programmes leading to Ph.D Degree in all the above disciplines.

Extension Centres

In order to cater to the ever-increasing need for quality technical education, B.I.T. has, over the years, established several Extension Centres in major towns. Such centres existing in Calcutta, Jaipur, Hyderabad and Ranchi, offer MCA, MBA, M.E., M. Tech., P.G. DCA, B. Sc. (Comp. Sc.) and BCA courses.

An Extension Centre was established at Naini, Allahabad in the year 1997-98. This centre offers B. Tech. Course in Civil, Electrical & Electronics and Mechanical Engg. for working Diploma Engineers on a Part-time basis. The course structure has been designed to suit the requirements of the working diploma engineers and to equip them with knowledge of the modern computer aided technological tools.

The centre has fulfilled the long standing demand for an institution in the region offering such courses and is likely to introduce several other programmes in the near future.

The Bachelor of Computer Application Degree Programme has already been started at our extension Centre at NOIDA. Other Post-graduate programmes in the areas of Business Administration, Computer Application, Software Engineering and Interior Design, are in the planning stage.

ADMINISTRATION

B. I. T., Mesra is a 'Deemed University' under Sec. 3 of the UGC Act, 1956. It functions under the overall supervision, direction and control of a high-power Board of Governors, comprising representatives of the Ministry of Education, Government of India, the University Grants Commission, the State Government, the Chancellor, the All India Council for Technical Education, the Trust and the Institute Faculty. Shri G. P. Birla is the Chairman of the Board of Governors. The Governor of the State of Bihar is the Chancellor of the Institute. Composition of the Board of Governors is given in Annexure - I.

The Technical Council decides the academic policy of the Institute. It controls and approves the curriculum, courses and the examination results. It appoints committees to look into specific academic matters arising from time to time. The teaching, training and research activities of various departments at the Institute are constantly under review to improve both facilities and standards. The Vice-Chancellor of the Institute is the Chairman of the Technical Council. Members of the Technical Council are listed in Annexure - II.

Financial advice to the Institute is given by the Finance Committee. Similarly, the Building & Works Committee advises the Institute in matters relating to building works activity. The constitution of the Finance Committee and Building & Works Committee is given in Annexure - III.

In addition, there are a number of other committees like the Regulation Committee for Under-graduate and Post-graduate Courses, Semester Programme Coordination Committee, Admission Committee, Scholarship Committee, Students' Welfare Committee etc. These Committees are appointed by the Technical Council to help the administration in the efficient running of the Institute.

ENROLMENT

There are 2058 students who have been enrolled during the current Academic year 1998-99. The branch-wise enrolment is detailed below. Of these there are 489 girl students and 160 NRI and foreign students :

Course	Full-time	Part-time	
B.E.	1210	-	
B. Arch.	104		
B. Pharm.	101		
B.Sc. (Computer Sc. / Electronics)	147		
BCA	30		
MBA	59	64	
MCA	94	52	
DCA	21		
M. Pharm.	19		
M.E./M.Tech.	49	55	
Bio Medical Instrumentation	25		
Information Science	28		
	1887	171	
Total			2058

FACULTY & STAFF

Against the sanctioned strength of 213 Faculty positions, 159 are filled with 54 vacancies. The break-up is as follows :

Category	Sanctioned	In Strength	Vacancies
Professor	57	41	16
Associate Professor	62	35	27
Asstt.. Prof./Lecturer/ Associate Lecturer	94	83	11
Total :	213	159	54

The number of administrative and supporting staff is approximately 250. In addition, there are about 300 Class-IV Staff to look after the General Maintenance of electricity, water supply, gardens, security, hostels and allied services. Under the Welfare Programme for the weaker sections of society specially from villages adjoining the Institute Campus, the Institute has engaged about 100 persons as Trainees/Apprentices in various technical and other trades. While under training these persons are paid some allowance/stipend on a regular monthly basis and they are absorbed in regular posts against vacancies arising, from time to time.

All academic staff have been provided accommodation on the Campus. About 60% of the administrative and other supporting staff have also been provided accommodation on the Campus.

CAMPUS AND PHYSICAL FACILITIES

The Institute is fully residential and extends over 780 acres. The main buildings of the Institute covers an area of over 30,000 sq. mtrs. and accommodates the various research and training laboratories, administrative offices and lecture rooms. The workshop annexe has a covered area of 4,000 sq. mtrs. The laboratories and offices of the Department of Space Engineering & Rocketry are situated for security reasons in a sub-campus, about half a kilometer away.

For the convenience of working Engineers to participate in Post-graduate programmes a Technology Centre was established in Ranchi City at Lalpur in 1976.

The campus is self contained amidst well laid lawns, with its own protected water supply, marketing centre, dispensary, bank and schools.

Institute Building Sq. mtrs.

i.	Main building & Administrative block	3700
ii.	Class room & laboratories, Drawing halls, Staff rooms etc.	9300
iii.	Library block	2600
iv.	Space Engg. & Rocketry block including Explosive and Rocket Fuel Centre	930
v.	Workshop sheds, General Stores, Garage/Godown	3721
vi.	Gymnasium	850
vii.	Animal House	400

Residential Complex

i.	Staff quarters in different categories	300 Nos.
ii.	Residential Complex for supporting services : Forest Guards, Dairy, Shop Keepers, Washermen etc.	70 Nos.

Hostel Accomodation

i.	Seven Boy's Hostels	1410 Rooms (single)
ii.	Two Girls' Hostel	140 Rooms
iii.	One Foreign Students' Hostel	100 Rooms (single)

Guest Accomodation

The Institute maintains three Guest Houses. Two General purpose Guest Houses with 38 furnished rooms and a VIP Guest house with 3 deluxe double bed-rooms to accommodate guests appropriately.

Auditorium

To meet the growing needs of the community for public functions an Open Air Theatre is partly completed and can seat 2500 persons.

There is also a Mini-Auditorium with seating capacity of 450 in the main Administrative Block.

Games & Sports

The Institute has a Gymnasium which is spacious enough to arrange indoor games. Extensive play grounds are provided for various sports. They are :

i. Field Tracks for Sports/Athletics - 1

ii. Cricket ground - 1

iii.	Football grounds	-	2
iv.	Hockey grounds	-	2
v.	Basket Ball grounds	-	4
vi.	Volley Ball grounds	-	6
vii.	Tennis Courts	-	6
viii.	Badminton Courts (One Indoor and 5 Outdoor)	-	6

Canteen Services

A moderately furnished canteen, provides snacks for students and staff.

Dispensary-cum-Health Unit

An eight-bed hospital provides the medical facilities to the large campus community mainly as an outdoor patient unit. This unit is supported by three full time and one part-time doctors and other para medical staff. Excellent rapport exists for acute medical needs with the Government Medical College & Hospital at Ranchi.

Shopping Centre

A well run Cooperative Stores provides the daily requirements of the campus of nearly 5,000 residents. Additional shopping complex is provided for sundry needs.

The construction of a full-fledged Marketing Complex and Cooperative Book Store to meet the growing needs of the Campus has been completed. The annual commodities sold through these outlets of the Campus exceeds Rs.2 crores mark in value.

Others		Sq. mtrs.
i.	Consumers' Co-operative Stores	375
ii.	N C C Block	400
	Rifle Firing Range	1 No.
	NCC Parade ground	1 No.
iii.	Primary/High School (temporarily housed in Mechanical Engg. Block)	744

CENTRAL FACILITIES

Computer Centre

The computer laboratory is equipped with six high end systems known to be qualified under the supper mini computer category. The details are described below :

- DEIL 5100 from Digital India with RISC CPU, R3000 and the floating point unit R 3010, with a clock speed of 20 MHz, it delivers a SPEC mark 1 of 14.9 and MIPS 2 of 19.4. The primary memory is 40 MB and disc capacity is 1.85 GB. It has 95 MB CTD and 32 terminals. The operating system is ULTRIX and supports C, Pascal, Cobol and FORTRAN compilers algorithm INGRESS RDBMS package.

- TUL U6000/65, a high end system from TATA UNISYS with two 80486 CPU's @50 MHz. It has 64 MB RAM and 1 MB external cache per CPU. Secondary storage is 4.05 GB in the form of SCSI Hard disc, 150 MB CTD and 1.2 MB FDD. There is also a 550 MB CD-ROM. The system has 47 terminals and runs on AT&T Unix with X Windows, Oracle and Scientific subroutines. The languages supported are C, Basic, Fortran 77, Pascal, C++ and Image Processing and vision softwares.

- DEC-Apha-600 has Alpha @ 175 MHz with 2.5 GB Hard disk, 600 MB CD-ROM, 500 MB CTD and 96 MB RAM. It runs on VMS operating system and has FORTRAN, PASCAL, C, C++ and COBOL compilers, GKS and PHIGS package installed as RDBMS. It is linked with two 8-port terminal server over DECNET.

- DEC-Alpha-3000 has Alpha @ 125 MHz with 2.5 GB hard disk, 600 MB CD-ROM, and 32 MB RAM. It runs on OSF operating system with FORTRAN, PASCAL, C, and COBOL compilers and GKS, phigs Open-3D, DXML and X-windows are also installed in the system.

- DEL-Alpha-150 is EISA based Alpha @ 150 MHz machine with windows-NT operating system and 600 MB CD-ROM.

- SILICON GRAPHICS INDY R-4600 system for Image processing and multimedia presentation having processor MIPS R4600, 100 MHz MIPS rating 119, 32 MB RAM, 16 KB data & Instruction cache, video camera, microphone, Speakers, Mouse, 535 MB HDD, CD ROM, IRIX Operating system with C, C++, Pascal, Cobol compilers, Multimedia showcase.

- SUN ALTRA 140 workstation/64MB RAM/2GB HDD/ 17" color monitor/CD-ROM Drive/Microphone/Built in Ethernet/Solaris 2.5 operating system/Java workshop/C/C++/ Fortran Compilers.

- One high end IBM Netfinity Server having clockspeed 450 Mhz / 256 MB SDRAM / 9.00 GB H.D.D. / 40X CD ROM / Floppy Drive IBM Mouse and 17" SVGA colour Monitor with WINDOW NT O.S.

- 20 Nos. IBM PC-GL-300 Pentium II System with 350 MHz clockspeed / 32 MB SDRAM/4.3 GB H.D.D. with compiler Lotus Smart-suit.

- 2 Nos. Server of HCL Infinity MNC brand system PII 333 MHz made server / 64 MB SDRAM / 4.3 GB H.D.D. / 1.44 F.D.D. / SVGA with 2 MB Colour monitor Digital 32 X CD Drive Keyboard / Mouse.

- 2 Nos. Multimedia System of Wipro System Genius 6100-HMOE/Intel Pentium II-333 MHz / 512 KB Cache / APG Graphics with 4 MB VRAM / 4GB Ultra DMA Controller / 2 * 16550 Fast Serial Port / 1 EPP-ECP Port / 2 USB Port / 96 MB SDRAM / 104 KBD / Win98 / 14" Monitor with Multimedia Kit / 40 X CD drive / SBS 10 creative speaker sound card / Microphone.

- There are number of Dot Matrix Printers and a line printer with a printing speed of 600 lpm as a common facility to the above mentioned systems.

All these systems are networked on Ethernet with TCP/IP and NFS. Apart from the above there are 20 PC-AT 386/486 range of machines with SVGA, 4 MB or more RAM and 80 MB or more hard discs and an Wipro Pentium 90 MHz system.

The Pentium based software packages include the following :

Fox-Pro for Windows 3.1, MS Fortran, MS-Word 6.0, Windows 3.1, MS Visual Basic 1.0, Broland C++, Turbo Pascal 7.0., Window NT O.S., Windows 95, Windows 98, J++, Visual Basic, Visual C++.

There is also a 2 transputer based parallel processing workstation with parallel C, parallel Fortran and one Tektronix 4115B graphics workstation. The department is currently providing computing facilities for 120 students at a time in one slot and is kept open all 7 days from 8 a.m. to 11 p.m. for the users.

The Institute has been identified as a Nodal Centre for the installation of Super Computer PARAM-10000 of C-DAC by Ministry of Human Resource Development, Government of India, New Delhi.

Library

The Library subscribes over 120 Indian and foreign journals annually. During the current year more than 1415 books were added to the existing stock of Library. The up-to-date stock of the library comprises of 62369 books and 16330 back volumes. Facilities for microfilming, photocopying are being provided by the Library.

In addition to printed Journals, the library also subscribes IEL (Full Text), Ei Compendex Plus, International Pharmaceutical Abstracts, Grants and Institute of Management International Database Plus on CDs, to meet the users requirements. The Library is fully equipped with one CDNET (with four drives), one server and 16 nodes, all connected in LAN and two Workstations attached with one laser printer for getting the full text. A TCP/IP account for Internet with necessary hardware and accessories has been added recently.

CAD Laboratory

The Central CAD Laboratory has a Wipro 486 system with 820 MB memory space and Acermate 920 and 486/G with memory space of 1.2 GB with at least thirty terminals for the use of students. This laboratory has many modern software packages for the benefit of students. These packages include the Auto CAD release 12 (drafting package), DOS as well as Window version, MCAD, FEM, FLOW and 3D-Studio. The CAD Laboratory has compiler of Boroland C++, Turbo C etc., too. The computer terminals are connected through modern plotter (with different pens) and printer for getting hard copy.

The Acermate 920 is the latest workstation for the CAD/CAM user with the Intel Pentium processor, PCI-Local bus Mach 64 graphics, Fast serial ports and EPP, EP and is ideally suited as a server for CAD laboratory. The Acermate 486/G has a high performance processor, on board local bus graphics controller, pin and plug technology for modular expandability.

The Laboratory which is being used by all the Engineering and Architecture Departments has been upgraded by purchasing the latest hardware and the software to keep pace with the rapid developments in the Computer World. Notable among the softwares is the SDRC'S I-DEAS software Artisan series which won the award of the best software of the year in CAD/CAM.

Multimedia software and hardware has been added to meet the increasing applications of Multimedia Technology in Education, Training and Research.

ACADEMIC INNOVATIONS RESEARCH & DEVELOPMENT

There has been a constant endeavour to acquire state of art facilities in our laboratories and to carry out research and development work in the emerging areas of Applied Sciences, Engineering & Technology. The focus of research and development has been on the new fields of inter-disciplinary research. The curriculae in Engineering, Pharmaceutical Science, Applied Science and Management disciplines have been revised and upgraded.

To keep pace with the technical advances and future trends in industry, the Institute-Industry interaction has been encouraged. Several new programmes offering consultancy, testing facilities, trouble shooting and technology development, are being persued.

In pursuance of the new Education Policy of the Government of India, the Institute is keeping pace with the latest technological advances in identified areas of emerging technologies and is creating and establishing necessary infrastructure of Education, Research and Training. The Microprocessor Development Centre has already established a rapport with SAIL, MECON, CMPDI, HEC, etc. for design and development of instrumentation and control systems for real-time computer controls. Artificial Intelligence, Robot Technology and Environmental Engineering are being moved from the research domain to the solution of practical problems. Further, the efforts are being made for commercial exploitation of various technologies developed at various Centres/Departments.

Microprocessor Research Centre

The Microprocessor Development Centre has provided technical assistance, consultancy and training to Research and Development Centre for Iron and Steel of the Steel Authority of India Limited (RDCIS-SAIL), Metallurgical Consultants Ltd. (MECON), Coal Mines Planning and Design Institute (CMPDI) and Heavy Engineering Corporation (HEC) for design and development of instrumentation and control systems.

The Microprocessor Research Centre has been expended to facilities application programming on fast 32-bit processors, namely :

68020 at 25 MHz programming and real time trigger with performance analysis.

IMST 414 Transputer system for 32-bit multiprocessor environment, emulation using PC-XT, to yield system throughput up to 10MIPS, using OCCAM language.

The Hewlett-Packard 9000-350 system has been installed for AI applications with UNIX-OS, C, PROLOG, and LISP and assembly language facility. The system is a state of art machine capable of expansion. The HP 9000 system is networked with two HP64000 Development stations to constitute the HP-Design Centre.

Robotics Laboratory

An updated intelligent Robotics laboratory consists of three robots :

An IEEE Hero Robot with 4 degrees of freedom capable of ultrasonic sensing, dynamic mobile object sensing, speech synthesis etc.

Rhino Robot XR-3 and XR-4 are five axis revolute coordinate robot arms with motor driven grippers.

Plasma Engineering

The main activities of the Plasma Engineering Laboratory are in the area of Plasma Technology for the development of new materials using Anodic Plasma Deposition Technique, application of Plasma Technology in material processing like plasma welding, cutting, tool hardening etc. and low temperature plasma technology using glow discharge and low pressure arc discharges for coating by thermal evaporation processes. The Anodic Plasma Deposition Unit, which was developed last year by the Plasma Technology group headed by Dr. P. K. Barhai, has been used to produce both mono and multilayer metallic coatings. Characterization Techniques of these coatings in terms of electrical conductivity using four-probe method, crystal structure using XRD and thickness measurement using quartz crystal oscillator have been developed. The unit is being further modified to make it suitable for deposition of Nitrides and Oxides by the incorporation of feed throughs for gas inlets.

The project entitled "Study of Arc Plasma Characteristics of a Cascaded Plasma Arc Generator", sponsored by D.S.T., New Delhi, has been completed. Another project on "Metallic Multilayer Surface Coating Using Anodic Vacuum Arc", sponsored by ISRO

Govt. of India, has been going on under the Principal Investigatorship of Dr. P. K. Barhai. On the basis of the expertise gained in the area of anodic plasma deposition, a new project on the development of the superconducting thin films of alloy superconductors has been submitted to UGC for support under major research project.

Some low temperature plasma experiment rigs for measurements of the electron temperature and electron density in low pressure gas discharges are being fabricated for undergraduate students.

Some of the major facilities existing in the plasma laboratory are :

* Anodic Plasma Deposition Unit
* Sputtering Deposition Unit
* Low Temperature Plasma Generation Units (HHV and IBP Torr)
* Cascade Plasma Torch (Hypertherm, U.S.A.)
* Optical Emmision Spectroscopy Unit consisting of Monochromator (JOBIN YVON, France), Photomultiplier Tube (300-1100 nm), X-Y Recorder, Computer controlled Scanning, Photomultiplier Read - Out, Optical Fiber assembly for coupling of Monochromator to the source etc.

Flexible Manufacturing Automation Laboratory

In today's multioption market, there is much greater need for flexible production that can be used on a veriety of products, models, and styles. Planners for new facilities require their machines, robots and material handling systems to be integrated into a flexible manufacturing system (FMS). Rapid advances in manufacturing technology with computer controlled processes and management information system, are necessary for their potential to be realized. Realizing the need for an integrated programme on the development of Automation Technology, a Flexible Manufacturing Automation Laboratory has been set up in the Department of Production Engineering. This laboratory provides an exposure in the methodology of unmanned manufacturing. The laboratory is designed to carry out experiments on various aspects of automation as applied to Production Engineering field.

Environmental Engineering Laboratory

The laboratory is well organised for testing of various environmental pollutants with precision and speed. It is equipped with Scalar Analyzer which is microprocessor controlled and has capacity to test 37 parameters at a time. The data system can handle upto 16 channels simultaneously. All channels are displayed on CTR. The data system stores all the raw data for post-run manipulations, achieving, transfer and reformatting of reports. Curve generation in all channels is an added feature.

The laboratory is being used for regular training to Under-graduate and Post-graduate students and also for carrying out consultancy work of various industries.

A core group has been formed to provide thrust in teaching & research in the area of Environmental Science and Technology. Two projects related to air quality monitoring and air pollution control in coal fields sponsored by CMPDI, Ranchi, are under progress.

Department of Applied Chemistry

The department has been actively participating in academic programmes, consultancy and material testing work. New laboratory experiments have been introduced in the sessional routine for the under graduate students.

A new project entitled "Synthesis and Characterization of Dye Based Polymers" has been sanctioned to Dr. Bimal Verma with Prof. B. D. Choubey as Co-investigator by UGC. The research work is being progressed satisfactorily.

Dr. P. K. Srivastava has visited Japan on a short term programme (Jan. 99 - Mar. 99) to work with Prof. I. Hanazaki at Hiroshima University. Two AICTE sponsored projects are also being progressed.

Four research scholars are working for their Ph. D. Programmes.

Department of Applied Mathematics

Apart from participating in teaching programme in both undergraduate and postgraduate courses of the Institute, the faculty members of the Department are actively involved in research and consultancy work in various fields such as MHD flows, Mathematical modelling, Environmental pollution, Water waves, Elasto-plastic dynamics with special reference to non-conventional forging of sintered metal power.

A computer Laboratory has been established in the Department with a PC (Pentium) and two printers.

Two research scholars are persuing their research works leading to Ph.D. degree in the areas of Theoretical Study of MHD flows and Vibrations of non-uniform plates under the guidance of Dr. C. Thakur and Dr. S. K. Jain respectively.

On going research projects/Consultancy work :

Dr. N. C. Mahanti has been working as a consultant to MECON, Ranchi in the development of Mathematical model for air pollution problems due to elevated sources in the coastal area.

Dr. S.C. Prasad is actively involved in the research project entitled, "Formability of Sintered Preforms" sponsored by D.S.T.

A talk was delivered by Dr. K. S. Chaudhuri, Professor, Department of Mathematics, Jadavpur University, Calcutta on "Volume Flexible Manufacturing System : A Mathematical Model" on 21st January 1999.

Department of Applied Mechanics

The Department is involved in teaching, research and industrial consultancy in the broad areas of Computer Aided Analysis and Competitive Product Design, Fluid Mechanics, Stress Analysis, Tribo-Technology, Reliability, Maintenance Engineering and Structural Dynamics. The department is in the process of developing specialized laboratories devoted to these areas to a high degree of sophistication. It has also planned to run two postgraduate programmes namely M.E. (Computer Aided Analysis and Design), and M.E. (Tribology and Maintenance Engineering). The Ph. D. programme of the department offers research opportunities in the areas of manufacturing analysis, tribo-technology, competitive product design, fracture mechanics, material characterization and composite materials. The department has also been actively interacting with various industries and other technical institutes and research organizations. The department conducts courses for undergraduate and postgraduate students.

A computational facility having a reasonable number of networked workstations and pentium machines and an extensive array of software for engineering analysis and competitive product design is being established. Recently, ANSYS 5.4, a user friendly software for structural analysis in various fields such as mechanics, electromagnetic fields, thermal analysis, heat transfer, fluid flow etc. and ADAMS 9.1 for analysis of rigid body dynamics as well as kinematic analysis, have been acquired.

A tribology and maintenance engineering facility to evaluate failure of systems and components, refine maintenance procedures and improve availability of systems, a biomechanics laboratory for the study of human body performance and Water-jet technology laboratory to study the breaking process and influencing parameters are being setup.

Research and consultancy interests are in the areas of Engineering Tribology, Bio Mechanics, Manufacturing Analysis, Water-jet Technology, Structural dynamics/Smart Structures, Composite Materials, Competitive Product Design and Agile Engineering System.

The following research projects are being progressed :

Development of Water Jet Technology Laboratory sponsored by AICTE under Dr. S. Kumar and Prof. Arvind Kumar

Formability of Sintered Performs sanctioned by DST under Dr. S. Kumar and Dr. S. C. Prasad

Development of Computer Aided Engineering for Competitive Project Design suppcrted by UGC under Dr. S. Kumar.

Department of Applied Physics

The Department is actively engaged in the development and modification of the undergraduate Physics Laboratory and Engineering Materials Laboratory. The modification of the course and addition of new equipments to the laboratories have taken place. The faculty members of the department are also actively engaged in research and development work. The main areas of research at present are : Plasma Technology, High Temperature Superconductivity and Laser. Some of the important equipments and facilities are :

i. Shimadzo Atomic Absorption / Flame Emission Spectrophotometer (AA680)

The main features of this facility are :

Automatic selection of optimum operational parameters (lamp current, wavelength, slit width, fuel gas flow rate, type of flame).

Color CRT for display of all operational parameters and analysis results.

The typical areas of applications are :

Analysis of water samples, airborne dust, gasolines, oils, plastics, elements like irons, steels, alloys, glasses, cements, fibres, cosmetics, food, food additives, animal tissues, plant, plant tissues, soils, fertilizers, bio-fluids, drugs etc.

ii. Mossbauer Spectrometer (MS-1200, Ranger Scientific Inc., U.S.A.).

The main features of this facility are :

Laser velocity signals and digital feed back

Automatic curve fitting software

Computer controlled automatic temperature controller

iii. Holography Unit (Polytee, West Germany) :

The holography unit is in installation stage. The unit once installed will serve as a R & D equipment as well as a demonstration experiment under which recording and reconstruction of holograms will be demonstrated.

One scholar has completed the formalities of Ph.D. degree on the topic "Study of Oxide Superconductors with High Transition Temperatures", under the guidance of Dr. P. K. Barhai and two more are pursuing their research programmes.

The following seminars were arranged in the department as part of the academic activities during the year 1998-99 :

i. National Symposium on Instrumentation (NSI-23) was organised during Oct., 7-10 1998 with Dr. P. K. Barhai, as Co-ordinator.

ii. Dr. R. K Popli conducted Two training camps for master trainers from 8 states in Science-based non-formal education, one at Kosbad (Maharastra) Oct. 3-12, 1998 and the other at Bishunpur (Bihar), Dec. 5-14, 1998.

iii. Mrs. Sumita Adak of Indian Association for the Cultivation of Science, Jadavpur, Calcutta. delivered a talk on Investigations on the Magnetic and other Properties of some Rare Earth Insulators on 05.08.98.

iv. Dr. Sampad Mukherjee of Indian Association for the Cultivation of Science, Jadavpur, Calcutta spoke on the topic Ultrasonics and Elastic Behaviours of some Solids and Liquid Mixtures on 18.09.98.

v. Prof. K. C. Pandey, Member, Project Monitoring Committee of U.G.C., formerly. Prof. & Head, Deptt. of Applied Physics, B.I.T., Mesra, Ranchi informed about Thrust Areas of Physics for Funding by University Grant Commission on 20.11.98.

vi. Mrs. S. Keshri (Presently Asstt. Prof. at B.I.T. Extension Centre Lalpur) gave a lecture on Study of Oxide Superconductors with High Transition Temperatures on 02.12.98.

vii. Manish Kumar Sinha, Associate Lecturer, Deptt. of Applied Physics spoke on Study of Characteristics of Arc Plasma Produced by a Cascade Plasma Arc Generator on 19.01.99.

viii. Mr. S. K. Ojha, Advanced Laser System Ltd., (R&D and Marketing) Faridabad delivered a talk on Laser for Scientific and Research Purposes - Ruby Laser, NdYAG etc on 08.02.99.

Department of Architecture

The department was established in the year 1993-94. The first batch of students have already graduated and have found gainful employment. This year all 30 students of 1994 batch are expected to graduate and most of them have already secured jobs. New faculty members have joined the department during 1998-99. During December 1998, an education tour to South India for 3 weeks was organised and the students studied and observed both historical and modern buildings and structures.

The students also participated in NASA (National Association of the Students of Architecture) competition at Chennai where our students won numerous top prizes in many competitions . But their main achievement this time was the winning of ZONASA TROPHY for the third consecutive year competing with all other schools of architecture in the North-Eastern Zone. During 1999, the department would be hosting the ZONASA at B.I.T. The students also have been participating in different national and International Architectural design competitions.

Regular departmental seminars are being conducted by external experts both from academic institutions and industry.

The following seminars were organised during 1998-99 :

1. A talk on "Architecture and Architectural Profession" by Prof. A. K. Maitra, Director, SPA, New Delhi.
2. A talk on " Architecture and Architectural Education" by Dr. Joydev Sarkar, Dean and Ex-Head of the Department of Architecture, Bengal Engineering College, Howrah.

3. A talk on " General Architectural Projects Work" by Mr. S. R. Agarwal, Architect, Vastusewa.
4. A talk on "Conservation in Architecture" by Prof. S. K. Das, Department of Architecture, IIT, Kharagpur.
5. A talk on " Art and Architecture" by S. S. Gangopadhyay, Architect, MECON, Ranchi.

In the central computer lab, all 42 computers have been loaded with either Auto CAD 12 or 14 or both. Other important softwares like 3D studio, Auto desk etc. will be loaded soon.

The department has maintained a library of its own. More new books have been added. Important National and International Journals are in the process of being purchased. Presently there are about 430 Architectural books in the departmental library.

The second departmental magazine is in the process of printing. Eminent Architects, professionals and academicians have written articles for the magazine.

The following projects submitted by the department are under consideration of AICTE and UGC :

1. Modernization of the Department of Architecture.
2. Establishment of a Computer Aided Architectural Design Laboratory.
3. Proposed infrastructure to develop Rural programme around BIT, Mesra.

Department of Bio-Medical Instrumentation

Considering the need of scientists and technologists in this field a course in Biomedical Instrumentation leading to M.Sc.(BMI) was introduced in 1992. Since the course is interdisciplinary in nature the Department of Electrical & Electronics, Department of Electronics & Communication, Department of Pharmacy and B.M. Birla Heart Research Centre at Calcutta and a number of leading medical practitioners are participating in this degree program.

All the students who have graduated in this course are well placed in job positions. They are very well received by well known hospitals and Industries which are entering the growing field of Biomedical Instrumentation.

Department of Civil Engineering

The Department offers a bachelor's program, a full time master's degree in addition to continuing post graduate education for working engineers. The department's commitment to research activities contributes strongly to the vitality of the technical education. The faculty members are involved in research and consultancy in which graduate and post graduate students have opportunity to become extensively involved. The department offers balanced courses in the areas of structures, geotechnical engg., water resources, construction management, environmental engineering and transportation. The graduate students are also trained in computer methods and latest softwares.

The degrees of Master of Engineering and Doctor of Philosophy are offered with specialisation in Structures, Geotechnical Engineering and Water Resource Engineering. Major areas of current research include soil structure interaction, soil mechanics and deep foundation system, magnetohydro dynamics, stochastic aspects of floods, transport of nonaqueous phase liquids in the subsurface, open channel flow, hydraulic jump, composite materials.

The material testing laboratory is well equipped to handle all the testing according to IS Codes. Rock testing and Highway laboratories are fully equipped. Survey lab has total station equipment to handle most advanced geodelic survey work.

Equipments added during the year 1998-99 are DWARF High volume samplers (4) alongwith attachment for gaseous sampling, WIPRO Supergenius 5000/6x86 (2) 16 MB, WIPRO Supergenius (PII) 32 MB and Cannon A4 Colour jet Printer.

Eight research scholars are working for their Ph.D. Programme in different areas.

The department has been involved in consultancy work in specific areas like :

* Design of raft foundation on cohesive soils
* Design of 12 storeyed residential complex on c-soils
* Investigation of safety of factory structures affected heavy dynamic machines
* Flood protection embankments for nonperennial river
* Design of pavements
* Design of haul roads.

The Department has taken up two major projects in collaboration with Coal India Ltd. and CMPDI, Ranchi to the tune of 80 lakhs.

1. Utilization of overburden materials through modification of physico-mechanical properties for the construction of haul roads.

2. Optimization of ambient air quality monitoring networks and application of mathematical models of air pollution control in North Karanpura coal fields under Central Coal-fields Ltd.

Three project proposals have been submitted to SAIL Ranchi, AICTE and UGC for support.

A training programme in collaboration with Public Health Engineering Department was organised for the engineers of the PHED between Dec. 26-30, 1998 with Dr. Gopal Pathak as co-ordinator.

Department of Computer Science & Engineering

Dr. L. Sahoo, Associate Professor of this department is awarded a major Research Project from UGC, New Delhi to undertake a Design and Development of Fuzzy and Database System.

A major Researeh Project from UGC, New Delhi to undertake Development of a Simulation Model for Multistage Assignment Problem System for a period of 3 years has been sanctioned to Dr. P. K. Mahanti, Professor & Head.

Dr. P. K. Mahanti is awarded a major Research Project from UGC, New Delhi to undertake an Application of Mathematical Concepts to Develop Learning Model.

Two students have been working for Ph.D. under Dr. P. K. Mahanti. One of them has been awarded Ph.D degree and the other scholar will be submitting his thesis soon.

The department organised an INFINITUM software contest on April 5-6, 1998 in which at least 150 candidates participated in various events.

The department would be organising an International Conference on Modelling and Simulation(MS-99) in association with the Association of Modelling and Simulation Enterprises, Lyon, France on Dec. 1-3 1999.

Six Month's Short term Desk Top Printing & Multimedia course has been started at Lalpur extension centre from Oct. 1998 on a regular basis to impart training to local residents.

Another six month short term course on oracle developer 2000 has been started at extension centre from April 1999 for computer professionals.

Department of Electronics & Communication Engineering

The department has modern laboratories and support facilities in all major areas of electronics and communication. These include -

Instrumentation, Analog and Digital Communication, Digital Electronics and Integrated Circuits, Microwave, Microprocessor, Fiber Optics Communication, Image and Speech Processing, Television, Industrial Electronics, PCB design and testing.

The fiber optics laboratory is equipped with LED and laser diode sources, O/E and E/O converters, powermeters, optical couplers and attenuaters, optical video and data links, WDM, monochrometer, SM/MM tapered Eridium doped fibers.

The digital communication laboratory is well equipped with PCM, DM, signal sampling and reconstruction, carrier modulation and demodulation, pulse amplitude modulation, AM and FM working modules.

A scalar network analyser with plotter going to 22 GHz, Spectrum analyser spanning 9 KHz to 22 GHz range, 22GHz microwave frequency counter milliwatt and powermeter support R&D work in the microwave area.

A landmark 486-EISA computer system with four terminals supports the research work in the CAD area.

Digital image and speech processing lab. is well equipped with 486 DX/2 system with full motion video frame grabber for capturing image from remote thro' optical fibers, Digital processing with high quality real time viedo and audio compression and decompression confining to ADPCM and PCM standards.

Research work is in progress in the following areas :

1. Video Conferencing System using Optical Fiber
2. Fibre optic sensors, FOLANS, high frequency optical devices.
3. Optical fibre gas sensors.
4. Laser security system for defence and railways.
5. Image processing and optical processing for industrial applications.
6. Image enhancement techniques for medical and forensic applications.
7. Full motion video compression
8. Antennas for mobile communication.

Department of Electrical & Electronics Engineering

During the year under report, several new courses have been designed. A course on "Multi-Media Applications" was offered as an elective at the U.G. level. The P.G. course in "Machine Learning Processes" introduced earlier to provide a base in Neural Networks and Fuzzy Logic has been replaced by a new course "Neuro-Fuzzy Control". The existing two courses on Discrete-Data and Non Linear Control Systems have been combined into a course under the name "Non-linear and Descrete Control Systems". A course on "Fundamentals of Microprocessors" has been introduced for the M.E. (AMS) students of Production Engineering Department. This course has been framed for the non-electrical engineering students who do not have any background in Digital Electronics but would still like an exposure to microprocessors.

Some essential equipments like single-phase autotransformers and two tachometers have been added to the Electrical Machines Laboratory. One storage oscilloscope and two logic pulse generators have also been procured to provide laboratory facility in "Power Electronics" area. The purchase process of several Microprocessor Kits (8085 and Z-80 type) has been initiated for the Microprocessor Laboratory of the department which caters to the needs of undergraduate and post-graduate (M.E.& BMI) students.

The work of repair and rectification of defects in the Mobile Mine Winder of Eastern Coalfields Ltd., Santoria has been completed during the year under report.

Dr. B. M. Karan is working on the following projects :

1. Control of Dynamical Systems Using Neural Network and Fuzzy System (Bihar Council of Science and Technology)
2. Development of a Control System for Desired Tension/ Compression Rolling at Continuous Hot Mills (RDCIS, SAIL, Ranchi).

Department of Management

The Department organized a Skill cum Technology Upgradation Programme (STUP) in collaboration with BIT-STEP from March 5-8, 1999.

The Department conducted a Non-technical Non-executive Correspondence Course for MECON employees during the period 8th April to 30th May, 1999.

A student of IV semester stood II in the Eastern Zone Final of the CNB Complete Manager's Contest held at New Delhi on 6th January, 1999. He also participated in the National Finals. Another team of 2 students of IV semester won the Ist prize in the HRD Quiz organized by the Ranchi Chapter of National HRD Network at MTI on 20th February, 1999.

Dr. R. Majumdar of IIM, Calcutta conducted a seminar for the students on the topic "Marketing Challenges in the New Millennium" on 19th March, 1999.

The Department also organised students' seminar on the following topics :

i. Effectiveness of Contemporary Motivating tools used in the Industry

ii. Leadership skills

iii. The Internet - What? How ?

iv. Brand Building.

A scholar was awarded Ph. D. on the topic "Problems & Prospects of Marketing of Drugs Manufactured by Small Scale Industries". Three research scholars have registered for Ph.D. programme.

A GE Compact Deluxe Model CD/T Overhead Projector with Twin lamp has been procured for the seminar hall.

Department of Mechanical Engineering

The Department has been steadily progressing under the untiring efforts of teaching faculty and supporting staff. Apart from teaching and research work, industrial projects and renovation of laboratories have been undertaken during this period.

Department has procured copies of well known software SDRC's 'I-DEAS' for the use of its faculty and students. A copy of "Smart CAM" has also been procured and is installed in CAD Lab.

During this session, a number of machines have been repaired, upgraded and renovated. The Dynamic Balancing Machine has been upgraded with microprocessor controls. Francis turbine, Deep well turbine pump, Digital hardness testing machine etc. have also been repaired.

Number of important projects have been completed by the undergraduate students. Some of them worth mentioning are battery operated bicycle, noise measurement of a diesel engine etc.

One scholar has been awarded Ph.D. degree for his work "Development of Forged Components using Sintered Performs".

Department would be organizing a National Seminar on "Energy Technologies for Sustainable Development" on Dec. 17-18, 1999.

Department of Pharmaceutical Sciences

During 1998-1999 session, the Department of Pharmaceutical Sciences made quite a few achievements almost in all areas of teaching and research.One of the land-mark event of the year belng the organisation of the National Seminar on the topic "Pharmacy Education and Research-Yesterday, Today and Tomorrow," on the occasion of celebration of Silver Jubilee of the Department between November 8-10, 1998. A commemorative Souvenir was published on the occasion and the proceedings of the Seminar was compiled.

The seminar was attended by about 150 delegates and alumni of the Department from all over the country. This ceremony was inaugurated by Sri C. S. Jha, Ex-CMD of ECL and BCCL in place of Dr. P. Das Gupta, Drug Controller General (Government of India) who could not come due to certain unavoidable reasons. The key-note address, sent by Dr. P. Das Gupta was read by Prof. S. K. Mukherjee, Vice Chancellor.

During the seminar, 30 research papers were presented by delegates in Oral and Poster sessions. Invited Speakers covered the topics related to training of future pharmacists, focal theme, industrial sickness, role of tissue culture and other pharmaceutical innovations.

Looking into the maket demand of the M. Pharm. qualified personnel, Post graduate programme in pharmacy has been diversified by introducing three more specializations to the already existing ones: they are Advanced Pharmacognosy, Pharmacology and Pharmaceutical Biotechnology.

Research activities have been intensified in the areas of Medicinal chemistry, Phytopharmacological studies, Ethenomedicinal cum herbal medicine, Newer drug delivery system (particularly control release), product development, fermentation and tissue culture techniques.

The following Research Projects have been completed :

1. C.S.I.R. sponsored project on Synthesis and Study of Newer Imvidazole Analogs.
2. M.H.R.D. sponsored project on An Integrated Apporach towards Pollution Control and Energy Conservation through Spirulina Cultivation.

On going research projects are :

1. U.G.C. project on Isolation and Identification of Mycotoxins and Mycotoxin Producing Fungi in Foods and Agricultural Products and their Pharmacological Studies - Dr. D. Sasmal
2. A.I.C.T.E. project entitled An Alternative Therapy for Kala-azar by Herbo-mineral Sources - Prof. N. K. Singh
3. World Bank funded project - Eucalyptus Wood Conversion - Prof. S. P. Bhatnagar

The following Research Projects have been sanctioned recently :

1. U.G.C. Project on Preparation of Edible Grade Pongamia Pinnata Seed Oil And Its Toxicological Studies For Possible Utilisation In Pharamaceutical Industry - Dr. S. P. Basu (PI), Dr. D Sasmal and Prof. B. N. Sinha.
2. U.G.C. Project on Standardisation and Quality Control of Some Herbal drugs Recommended by WHO for Re-investigations - Dr. S. Jha (PI) and Dr. S. P. Basu
3. A.I.C.T.E . Project : Modernization and Removal of Obsolescence of the Laboratories (MODROB)- Dr. S. P. Basu
4. A.I.C.T.E. Project : New Anticonvulsant Drug From Natural Sources And Search For Better Active Molecule Through Computer Aided Drug Design- Dr. S. P. Basu
5. A.I.C.T.E. Project (R & D) : Ethno-botanical Study of Antidiabetic Plants of Ranchi District- Dr. S. Jha

A number of seminar lectures and Guest lectures were arranged on topics related to Medicinal Chemistry, Microbiology, Pharm. Engineering, Pharmaceutics, Pharmacology, Biotechnology and Tissue Culture. Notable amongst them are the lectures delivered by :

i. Dr. P. Ghosh Executive Director, B. M. Birla Science & Technology Centre, Jaipur on "General Aspects of Fermentation Technology" on 4th Feb.1999.

ii. Dr. S. S. Bhojwani, Professor, Delhi University "Tissue Culture Techniques in Production of Secondary Metabolizes" on 12th Feb., 1999.

I.D.M.A. award :

Ms. Upasana Sinha was awarded by IDMA for obtaining highest marks in B. Pharm.

Department of Polymer Engineering

During this academic year the Department made considerable progress in the development of laboratory/workshop facilities.

The new equipments added to the Polymer Science Laboratory are Metter Electronic Balance and an Environmental Stress Cracking Apparatus. The major existing polymer characterization instruments are X-ray Power Diffractometer, MINIFLEX, RIGAKU, IR Spectrophotometer, Perkin-Elmer, Microscope with photographic arrangement, IZUMI.

The Department has acquired a rheological measuring system, Rheocord 90, HAAKE, consisting of a mixer Rheomix 600, a single screw extruder Rheomex 254, and a Capillary Rheometer. This unit is capable of determining processing properties of polymers.

The addition to the polymer processing workshop are a Two Roll Mill and a Hot Press. The workshop has facilities for Injection moulding, Blow moulding, Thermoforming and Compression moulding.

During the year 1998-99, the Department was engaged, primarily in developing new theory and laboratory courses for the recently introduced B.E. (Polymer Engineering) course. New faculty members have joined the department.

The first batch of nine students of B. E. (Polymer Engineering), registered for the 4th semester, in Spring 1999. The academic program progressed smoothly.

Prof. Sukumar Maiti, Professor of Polymer Materials, Materials Science Centre, IIT, Kharagpur was invited to address the students. Presently the students have proceeded for summer training at various industries.

All the faculty members are engaged in Research and Development work. The following major research projects sanctioned by UGC are progressing satisfactorily :

1. "Rheological Studies of Commingled Plastics Recyclates" - Dr. (Mrs.) M. Mukherjee (PI).
2. "Development of Injection Grade Polyethylene, Polystyrene and Polypropylene/ Polystyrene Blends with Improved Weldability", - Ms. S. Goswami (PI).

Department of Production Engineering

The faculty members are actively engaged in the Research & Development work in the following areas :

i. Agile Manufacturing

ii. Robotic Vision

iii. Effect of Manufacturing Parameters on wear and tear of Machine Tools.

iv. Work Design and Ergonomics

v. Modelling Factory Automation.

Dr. Alok Verma took a week's training at IIT Bombay on application of CAFIMS Software and Prof. B. K. Singh attended a Course on " NC Machine Tools and Part Programming" held at IIT, Kanpur from 21st-26th Sep. 1998.

Prof. Vinay Sharma received a cash award from DRDO, Agra for his exemplary and efficient work.

Mr. Alok Verma was awarded the degree of Ph. D. in Engineering. The topic of his thesis was - "New Strategies for Improving Industrial Productivity". Mr. Verma worked under the guidance of Dr. S. Kumar.

Three research scholars are working for their Ph.D. programme.

The following seminars were arranged by the department :

1. "Thermal System Design" by Dr. R. K. Bhardwaj, MNR Engg. College, Allahabad on 29.7.98.
2. "Process Capability Analysis" - By Mr. Nirmal Kumar, DGQA Complex, Calcutta on 23.2.99.

3. "Total Quality Management" By Dr. Nirjhar Roy, MNR Engg. College Allahabad on 26.2.99.

4. "Productivity Improvement Techniques" By Dr. B. Kumar, RIT Jamshedpur on 06.3.99.

An industrial tour was organised for BE students of the Department for visiting TELCO unit at Jamshedpur.

An IBM 233MHz, 4.2 GB PC, Colour Monitor and Laser Printer have been added in the laboratory. The Mat Lab., M.S. Visual Studio and CAFIMS Softwares have also been acquired.

With active participation of the faculty of the Department, the progress of the work on the following ongoing projects is in advanced stage :

a. Automation in Steel Industry

b. Development of Infrastructural Facilities for carrying out Design, Manufacturing and Testings of Speciality Forging Dies.

c. Agile Manufacturing

Department of Remote Sensing

India as a part of its strong space programme has launched several remote sensing satellites for mapping the natural wealth of the nation. In future, many other satellites with better resolution and enhanced features are planned. This calls for a large number of trained personnel to take up the above mission. Looking to the growing significance of Remote Sensing (RS) and Geographic Information System (GIS), an one and half year M. Tech. Programme in Remote Sensing was started from July 1997. The course is designed to introduce Remote Sensing and GIS techniques - principles, digital image processing of satellite data, and its application towards mapping and management of various natural resources. Ten students were admitted from the various streams of Engineering, Earth Sciences and few other basic sciences. The intake to M. Tech. (RS) has now been increased to fifteen. The department has well-developed digital image processing and photogrammetry laboratories.

The first batch (1997-98) of M. Tech. students has passed out in March this year. The students did their M.Tech. thesis work in various national and international organisations such as National Remote Sensing Agency (NRSA), Hyderabad, Space Application Centre (SAC), Ahmedabad, Indian Institute of Remote Sensing (IIRS) and Centre for Space Science and Technology-Asia and Pacific, an UN Centre at Dehradun. The topics of the thesis work included ANN application for the classification of remote sensing data, watershed modelling, wasteland mapping, hydrological investigation, forest type mapping etc.

The faculty members of the department and M. Tech. students of 98 batch are actively engaged in research work in various areas like development of Land Information System (LIS) for BIT campus, GIS for the transportation network in Ranchi city, Development programme for Jumar watershed, Decision Support System (DSS), Soil classification and mapping, Morphometric analysis of Swarnarekha and Jumar watershed etc.

Department of Space Engineering & Rocketry

The department has established excellent infrastructure for imparting post graduate education and carrying out R & D work for post graduate curriculum, Ph.D. Programmes and sponsored research and consultancy.

The research work carried out during the year 1998-99 in the areas of aerodynamics, composite materials, propellant technology, combustion and rocket propulsion, is summarized below :

AERODYNAMICS DIVISION :

An investigation, aimed to understand 3-D shock wave turbulent boundary layer interaction where a planar oblique incident shockwave was impinged on a cylindrical turbulent boundary layer, was carried out. The study derived relevance to strap-on Launch Vehicle development programme. The study revealed the existence of significant cross flow domain over the cylinder transmitting fluid from windward to leeward side, thus inducing upstream pressure and varying the interaction strength circumferentially at a given longitudinal section. A secondary shock was also observed on the leeward side upstream of the shock.

The aerodynamic flow field character changes of an aircraft wing due to damage on account of bird hit/hailstone etc. have been studied. The surface pressure distribution and flow angle at and behind the trailing edge shows considerable deviations. The surface pressure deviations have been obtained with the help of tandem pressure taps and the deviations in the exit flow angles have been measured by an angular deviation meter.

The research work on Respond project of ISRO "Sonic Buffeting: Shock Wave Boundary Layer Interaction" is being carried out. The project is aimed to obtain "Unsteady aerodynamic load" caused by several geometrical protrusions which are characteristic features of PSLV and GSLV. The experimental part of the work is progressing on wind tunnel at flow Mach Nos. of 0.8, 1.2, 1.8 and 2.4. The work related to Mach number 2.4 has been carried out with the help of unsteady flow parameters measuring probe developed and validated by the Institute, for which our patent application is under consideration.

COMPOSITE MATERIAL SECTION :

AICTE project entitled "Experimental Studies on Creep of Glass and Carbon Fibre Composites Under Adverse Environmental Condition" has successfully been completed. An attempt has been made to study the effect of water on creep behaviour of carbon fibre reinforced composites. The specimens were exposed to water for 500 hrs. prior to creep tests.

It was observed that the creep strain of water exposed specimen is higher than that of the unexposed specimen at the corresponding stress levels.

PROPELLANT TECHNOLOGY & ROCKET PROPULSION DIVISION :

The rheological behaviour of composite solid propellant slurries, is of paramount importance from propellant processing viewpoint. Energetically promising solid propellant systems, involving high loadings of oxidizer, light metal powder, burn rate modifiers etc. with optimized particle size distribution, have been developed and their effect on flow behaviour of HTPB based system has been investigated.

The research and development work, initiated in the previous year on eco-friendly propellant system has entered into its second phase. Novel propellant formulations based on HTPB-AN system, exhibiting good combustion characteristics and burn rates, have been developed. The research work has led to path breaking results on the role and importance of surface combustion studies and catalytic decomposition process of oxidiser. New additives have been discovered which not only augment the decomposition rate but also suppress the undesirable phase transitions of Ammonium nitrate oxidiser.

A fast response instrumentation circuit was designed, assembled and tested to record ignition delay data of liquid, gelled and metallized monomethyl hydrazine-red fuming nitric acid system using a modified Pino's Ignition Delay Tester. The circuit consists of a photo-transistor to sense appearance of flame, followed by a high speed switching transistor.The amplified output is fed to CD-4093,CMOS quad 2- I/P NAND Schmitt trigger which converts the pulses into perfect square waves. The output of the Schmitt trigger is fed to a counter chain to display the counts digitally. The instrumentation is capable of sensing even low intensity flames within microseconds.

The rocket test firing control room has been modernised with the financial support received from AICTE under MODROB programme. The automatic firing panel, data acquisition system and software for display and analysis of acquired performance results have been installed with the collaboration of High Energy Materials Research Laboratory, Pune. The test firings using the new set-up are being carried out.

The thermal analysis of the cryogenic rocket stage insulation system for predicting the heat flux and spatial distribution of temperature as function of time during ground hold and flight condition of India's Geosynchronous Satellite Launch Vehicle (GSLV) has been carried out. A computer program using visual C++ 5 is under development. Temperature distribution in several layers of the integrated insulation package is established by adopting Finite-Difference approach for numerical heat transfer analysis. Effect of solar radiation from direct sunlight, earth reflected and earth emitted radiations are considered during ground hold and as well as during flight conditions. Wind velocity, location of launch pad and launch time are important parameters for estimating heat load to the tanks, besides, the aerodynamic heating and the plume radiation during firing of cryogenic engine are the other major source of incident heat flux on the propellant tanks.

The research work on development of a computer software for thermal design of integrated insulation system for the propellant tanks of cryogenic stage is being carried out in association with IIT, Kharagpur. The work is sponsored by LPSC/ISRO.

A National Convention on "Indian Space Programme for 2000 & Beyond - A Perspective" was successfully organised in collaboration with Indian Space Research Organisation on December 14 & 15, 1998. A total of 41 delegates participated in the Convention and most of the major R & D organisations of Department of Space and Ministry of Defence were represented, besides other R & D Organisations and Institutions. Key Note address was delivered by Dr. S. Vasantha, Director, SHAR Centre. Two invited talks were also delivered by Shri M. C. Uttam, Dy. Director, VSSC, Trivandrum and Dr. N. C. Gautam, Project Director, NRSA, Hyderabad.

Four research scholars are working for their Ph.D. programme.

- Details of sponsored projects being progressed by the Department are given below :

Title of Project	Agency	Name of Investigator(s)
1. Modernisation of Rocket Propulsion Laboratory	AICTE	Dr.A.K. Chatterjee Dr.Mohan Varma
2. Transonic Buffeting : Shock Boundary Layer Interaction	ISRO	Dr.J.N.Mishra
3. Experimental Studies on Creep of Glass and Carbon Fibre Composite Under Adverse Environmental Conditions	AICTE	Dr.A.K. Shrivastava
4. Buffeting of a High Rise Block: A Study of Unsteady Industrial Aerodynamics of Earth Fixed Structure (EFS)	UGC	Dr.J.N. Mishra
5. Development of Herringbone - Grooved journal bearings for cryogenic turboexpander rotors	DST	Dr. T.K. Nandi

Project Proposals submitted are :

1. Fatigue Behaviour of Adhesive Lap Joints, to UGC by Dr.A,K. Shrivastava
2. Development of Cryogenic Propulsion System, to UGC by Dr.A.K. Chatterjee and Dr.T.K. Nandi
3. Development of Thermoplastic Matrix Composite Sheets, to DST by Dr. A. K. Shrivastava
4. Rheological Studies on Heterogeneous Gelled Propellants under High Shear Conditions, to AICTE by Dr.Mohan Varma
5. Combustion Studies on Eco-friendly Composite Solid Propellants, to UGC by Dr.Mohan Varma

Birla Institute of Technology - Science & Technology Entrepreneurs' Park
(B.I.T.-S.T.E.P.)

Department of Science & Technology, Government of India had all along been examining the possibilities of encouraging entrepreneurship in Science & Technology Institutions. The experience of BIT, SIRTDO was a positive example of such a possibility. In view of this, Government of India came forward to assist BIT to setup the first Science & Technology Entrepreneurs' Park at Mesra, Ranchi in March, 1985.

The STEPs were planned at the premier Institutes of the country with the objecitives

a) to forge a close linkage between Universities-academics and R & D Institutions on the one hand and Industry on the other hand, b) to promote entrepreneurship among Science & Technology persons, and c) to provide R & D support to the Small Scale Industry mostly through interaction with research institutions.

The Institute has stood by its commitment to continue to offer support towards expanding the infrastructure facilities of various Laboratories, Computer Centre, Workshop etc., as also the services and consultancy of highly qualified and motivated faculty for the purpose of process and product development at BIT-STEP.

A total of over fifty units could be launched since its inception, of which as many as thirty one were given operating facilities from its adjoining Nursery sheds. Sixteen of these have been doing very well, providing job opportunity to more than five hundred persons, and having a turnover of more than seven crores.

BIT-STEP has also conducted a number of programmes for various academic target group generally towards developments / improvement of skill and providing purposeful employment.

It has been duly supported by various Government and Financial agencies, like Department of Science and Technology, Govt. of India, Department of Science and Technology, Govt. of Bihar, Department of Welfare, Govt. of Bihar, Small Industries Development Bank of India.

BIT-STEP is currently organising a Skill Development Training Programme for Data Entry Operator / D.T.P. / Electrician / Welder / Mason / Plumber sponsored by Department of Science and Technology, Govt. of India. In this Programme 100 youths will be trained in the above disciplines.

BIT-STEP is also conducting a Radio & Television Repair Training Programme for Adivasi youth sponsored by Department of Welfare, Govt. of Bihar in which 30 candidates are getting training.

Besides the above training programmes BIT-STEP has successfully conducted the following programmes :

A Skill-Cum-Technology Upgradation Programme (STUP) in collaboration with Small Industries Development Bank of India in the area of Materials Management from 05 March 1999 to 08 March 1999. The Co-ordinators were Dr. A. K. Chatterjee, Prof. Awadh Prasad and Shri Abinash Prasad. A total of 20 candidates participated in the programme. The participants were owners and senior managers/executives from various Small Scale Industries and Enterprises.

A second Small Industries Management Assistants Programme (SIMAP) in collaboration with Small Industries Development Bank of India from 07 January 1999 to 23 April 1999. The Co-ordinators were Dr. A. K. Chatterjee, Shri Abinash Prasad & Shri P. C. Behari. A total of 30 candidates were trained for the management of Small Scale Industries.

The following technical papers were presented during Small Industries Management Assistants Programme (SIMAP)

1. Prof. A. K. Chatterjee presented papers on Managerial Skills for Small Scale Enterprise, Business Communication and Project Management in Small Scale Industries.
2. Prof. K. P. Sinha presented papers on Manufacturing Industries and Related Problems, Case Studies of S.S.I. Units.
3. Shri Abinash Prasad presented papers on Safety and Accident and Maintenance Management.
4. Shri P. C. Behari presented papers on Industrial Training Management and Basic Principles of Project Management.
5. Shri Ramkesh presented paper on Quality Study of a Good Manager.
6. Shri B. Pathak presented papers on Computer Applications and Computer and Communication.

PARTICIPATION OF FACULTY IN NATIONAL & INTERNATIONAL SEMINARS, CONFERENCES & WORKSHOPS

Department of Applied Chemistry

Dr. B. L. Gupta participated and presented a research paper at National Convention on Indian Space Programme for 2000 & Beyond- A Perspective, held at B.I.T. Mesra, on Dec. 14-15, 1998.

Department of Applied Mathematics

Dr. N. C. Mahanti, participated in the National Conference on Mathematical Modelling of Biological, Ecological and Environmental Systems, at Jadavpur University, Calcutta (26-28 March, 1999) and presented a paper.

Following papers of Dr. S. C. Prasad have been accepted for presentation in the international conferences as noted below :

Strain History evaluation during forming of sintered preforms, Int. Conf. on AMPT'99 IMC 16th Annual Conference of Irish Manufacturing Committee, Dublin, Ireland.

Investigation into tribological aspects during forming of sintered preform, Int. Conf. on Tribology, Hyderabad.

Department of Applied Mechanics

Dr. Surender Kumar participated in National Seminar on Upgrading Professional Practice through Total Quality, Sept. 1998, Allahabad and chaired one technical session.

Shri Pradyot Basak participated in National Seminar on Recent Trends in Manufacturing Systems, at Pinjore March 1999 and presented one technnical paper.

Shri Pradyot Basak attended Indian Engineering Congress on Information Technology for Sustainable Competitiveness, at Chandigarh, March 1999.

Shri Rajiv Ranjan attended workshop on Advanced Optimal Design of Mechanical System, at Hyderabad Feb. 1999.

Department of Applied Physics

Dr. P. K. Barhai attended the National Symposium on Instrumentation (NSI-23) held at B.I.T. Mesra, Ranchi, Oct. 7-10, 1998 and presented five papers.

Dr. P. K. Barhai attended the seminar on "Electron Beam Welding & Vacuum Furnaces Technologies" held at Bangalore and organised by Cambridge Vacuum Engineering Ltd., U.K., December 7, 1998.

Dr. P. K. Barhai attended the UGC : CDC workshop held at the Physics Department, Benaras Hindu University, Varanasi, Feb. 1-2, 1999.

Dr. R. K. Popli attended the International workshop on 'History of Science : Implications for Science Education', held at Homi Bhabha Centre for Science Education, TIFR, Mumbai, Feb. 22-26, 1999.

Mrs. S. Keshri attended the National Symposium on Instrumentation (NSI-23) held at B.I.T., Mesra, Ranchi between October 7-10, 1998 and presented a paper.

Mrs. S. Keshri attended the 41st DAE Solid State Physics Symposium held at Kurukshetra University, Kurukshetra, Dec. 27-31, 1998 and presented a paper.

Shri Manish Kumar Sinha attended the National Symposium on Instrumentation (NSI-23) held at B.I.T., Mesra, Ranchi between October, 7-10, 1998 and presented a paper.

Shri Manisankar Giri attended the National Symposium on Instrumentation (NSI-23) held at B.I.T., Mesra, Ranchi between October, 7-10, 1998 and presented a paper.

Department of Architecture

Prof. N. Sengupta attended an International Seminar "Infrastructure 2000" at Delhi.

Prof. Manjari Chakraborty attended a seminar on "A Perspective 2050" at Delhi and presented a paper.

Prof. Pawan Kumar attended and presented papers in National Seminars on "Community Participation in Natural Disaster Management" and Gasoline Direct Injection Engine" at Delhi.

Department of Civil Engineering

Dr. K. V. K. Murthy participated in Indian Geotechnical Society Golden Jubilee Conference - IGC 1998 at IIT Delhi between Dec. 7-10, 1998.

Prof. S. Sengupta participated as Area Resource Person on Bihar Education Project, Patna.

Dr. G. Pathak presented a paper in the National Conference on Sustainable Development at Institution of Engineers, Patna Centre, on Feb. 13-14, 1999.

Prof. V.C.S. Rao participated in Indian Geotechnical Society Seminar at Visakhapatnam held on June 26th & 27th, 1998.

Prof. Arun Kumar presented a paper entitled, "Transport Planning and Land Use" at an International Conference held in Kathmandu during April 7-9, 1999.

Prof. Binay Kr. Singh attended a seminar on 'Advances in Non-destructive Evaluation Techniques' organised by the Institution of Engineers, West Bengal Centre at Calcutta.

Shri Birendra Kr. Singh attended a Refresher Course in Engineering at BHU, during Dec. 3-23, 1998.

Department of Electronics & Communication Engineering :

Prof. M. Puri was invited to give a talk on "World Telecommunication Day" on 17th May, 1998 at Engineers Bhawan, Ranchi on the theme "Trade in Tele-Communications".

Prof. M. Puri attended the National Symposium on Instrumentation, held at BIT Ranchi from October 7-10, 1998 and presented papers.

Prof. M. Puri attended the Advanced Courses on "E-mail - Configuration, Installation and Management" and "Web Server Technologies" held at IIT Kanpur from February 18-21, 1999.

Department of Electrical & Electronics Engineering :

Mr. P. R. Thakura attended an Indo-British workshop at IIT, Delhi during Dec.23-26, 1998.

Mr. R. C. Jha attended a short-term course sponsored under QIP programme of AICTE at IIT, Kanpur on "Power System Storability and Control" during Sept. 14-19, 1998.

Dr. B. M. Karan delivered a talk on "Intelligent Control Systems" at the All-India

Symposium on "Signal Processing" during Sept. 12-13, 1998 which was organised by The Institution of Engineers (India).

Department of Management

Dr. A. N. Jha attended a 'Faculty Development Programme' organised by ICFAI, Hyderabad in association with NISIET on "Current Developments in Industry & Business" during May 03-06, 1999.

Prof. S. Shivani attended a symposium on "Teaching Tools & Aids in Marketing Management" organised by North American Society for Marketing Education in India, held at IIM, Bangalore.

Department of Mechanical Engineering

Prof. Arbind Kumar attended the National Seminar on "Energy Conservation in Water Pumping Systems" organized by IICM, Ranchi.

Prof. Arbind Kumar participated in National Symposium on Instrumentation at BIT, Mesra and presented a paper.

Prof. Arbind Kumar and Prof. A. K. Roy attended the National Convention on Indian Space Programme for 2000 and Beyond - A Perspective" at BIT, Mesra and presented a paper.

Prof. Arbind Kumar participated in National Conference on Advances in Automobile Engg. at Anna University Chennai and presented a paper.

Dr. Randip Das attended the Symposium on International Automotive Technology (SIAT-99) at ARAI, Pune and presented two papers.

Prof. Arbind Kumar delivered a lecture on "Hydrogen : Tomorrow's Eco-friendly Limitless Fuel" in I.S.T.E. Summer School on Management and Control of Environmental Constraints at Jabalpur Engineering College, Jabalpur.

Department of Pharmaceutical Sciences

Prof. Subir Samanta participated and presented paper in the 50th Indian Pharmaceutical Congress and 17th Asian Congress of Pharm. Sciences, Mumbai, Dec. 10-13th, 1998.

Dr. S. Jha participated in the National Seminar on Herbal Formulation between Jan. 4-6, 1999 at Jamnagar, Gujarat.

Department of Polymer Engineering

Mr. C. Guria attended the International Short term course on "Recent Advances on Rubber Technology", conducted by Rubber Technology Centre, IIT, Kharagpur from 1st to 5th February 1999.

Dr. D. S. Bag attended Expert Meeting on "Materials Science for Practicing Engineers and Scientists", at Shri G. S. Institute of Technology and Science, Indore held on February 24, 1999.

Dr. D. S. Bag shall be attending QIP short term course on "Rubber and Plastic Process Engineering, organized by Rubber Technology Centre, IIT, Kharagpur, from 7th to 11th June, 1999.

Ms. S. Goswami attended Group Monitoring Workshop for Major Research project conducted by UGC at B.I.T, Mesra during 14th and 15th January, 1999.

Dr. (Mrs.) M. Mukherjee attended "Plastiscope '99", a seminar on "Emerging Opportunities in Plastics Processing Technology and Applications" conducted by Indian Plastics Institute on 24th February at Calcutta.

Department of Production Engineering

Dr. Alok Verma attended a conference on "Rolling and Finishing Technology" at RDCIS, SAIL, Ranchi on September 22-23, 1998.

Mr. Sanjay Kumar Jha attended the 18th All India Conference on "Manufacturing Technology Design and Research" held at IIT, Kharagpur on December 21-23, 1998.

Department of Remote Sensing

Dr. S. S. Dhabriya has organised and attended an Asian Conference on Air Pollution at RIPA, Jaipur and delivered Chairman's address.

Department of Space Engineering & Rocketry

A National Convention on " Indian Space Programme for 2000 & Beyond - A Perspective", was successfully organised in collaboration with Indian Space Research Organisation on December 14 & 15, 1998. Dr. J. N. Mishra was the Convenor and Dr A. K. Chatterjee was the Organising Secretary. A total of 41 delegates from all major R&D Organisations and Institutions participated in the Convention. A total of 25 Technical Papers were presented during five technical sessions. Dr. N. C. Gautam delivered the Invited Talk on "Application of Remote Sensing for Natural Resources Surveys" and Dr. J. R. Sharma spoke on the topic "Remote Sensing and GIS in Decision Support System for Natural Resource Management in Desert Region".

Dr. J. N. Mishra participated and presented research papers at the National Convention on Indian Space Programme for 2000 & Beyond - A Perspective, held at B.I.T. Mesra, on Dec.14 & 15, 1998.

Dr. Mohan Varma attended and presented a paper at the 23rd National Symposium on Instrumentation held at Birla Institute of Technology, Mesra, between Oct. 7-10,1998.

Dr. Mohan Varma participated and presented a research paper at National Convention on Indian Space Programme for 2000 & Beyond- A Perspective, held at B.I.T. Mesra, on Dec. 14-15, 1998.

Dr. Mohan Varma delivered invited Expert Lectures on "Hazards in Space Industry - Production & Operation of Chemical Rockets" and "Hazard Analysis in Rocket Propellant and Explosive Plants", at the AICTE & ISTE Sponsored Summer School on Industrial Safety and Hazards, organised at Bhilai Institute of Technology, Bhilai, between March 4-17, 1999.

Dr. N. L. Munjal attended the 23rd National Symposium on Instrumentation between Oct. 7-10, 1998 and National Convention on Indian Space Programme for 2000 & Beyond - A Perspective on Dec. 14 & 15, 1998 held at B.I.T. Mesra, Ranchi and presented research papers.

Shri P. K. Dash attended and presented a research paper at the National Convention on Indian Space Programme for 2000 & Beyond - A Perspective, held at B.I.T. Mesra, on Dec.14 & 15, 1998.

Dr. A. K. Chatterjee, Dr. A. K. Shrivastava and Dr. T. K. Nandi also attended the National Convention on Indian Space Programme for 2000 & Beyond - A Perspective, held at B.I.T.Mesra, on Dec.14 & 15, 1998.

RESEARCH PAPERS, BOOKS, ARTICLES PUBLISHED OR ACCEPTED FOR PUBLICATIONS

Department of Applied Chemistry

S. S. Majhi and P. K. Srivastava, "The Velocity Potential for Schlogl's Model" J. Indian. Chem. Soc. 75, 321, 1998.

P. K. Srivastava and S. S. Majhi, "Synthesis of Urea-Acrylic Acid Resin", Oriental J. Chem. 14, 7, 1998.

P. K. Srivastava and M. K. Mukul, "Synthesis of Maleic Acid-Urea Resin", Oriental J. Chem. 14, 381, 1998.

P. K. Srivastava, S. S. Majhi, R. P. Rastogi and I. Hanazaki, Chemistry Letters, The Chem. Soc. Japan, 1251, 1998.

Mohan Varma, B. L. Gupta, M. Pandey & S. Nandi, "Fast Response Instrumentation for Ignition Delay Measurement of Hypergolic Liquid Propellant System", presented at the 23rd National Symposium on Instrumentation held at B.I.T. Mesra, Oct. 1998.

B. L Gupta, M. Varma & V. Kumar, "Effect of Compositional Variables on the Flow Behaviour of HTPB Based Composite Solid Propellant" presented at the National Convention on Indian Space Programme for 2000 & Beyond - A Perspective, held at B.I.T. Mesra, Dec. 1998.

Mohan Varma & B. L. Gupta and M. Pandey, "Performance Evaluation Studies on Gelled and Metallized Monomethyl Hydrazine-Nitrogen tetroxide System", Proceedings of National Convention on Indian Space Programme for 2000 & Beyond - A Perspective, held at B.I.T. Mesra, Dec. 14-15, 1998.

B. L. Gupta & M. Varma, "Ignition and Combustion Studies an Metallized UDMH - RFNA Bipropellant System", Ind. J. Engg. Mat. Sci., Vol. 6, Feb. 1999, pp 13-21.

Department of Applied Mathematics

S. V. Subhashini and G. Nath, "Unsteady Compressible Flow in the Stagnation Region of Two-dimensional and Axi-symmetric Bodies, Acta Mechanica, Springer Verlag, 1998.

Department of Applied Mechanics

S. Kumar, "Development of an Expert System for Forging of Sintered Preforms", Proc. International Conference on Information Integration in Manufacturing, Bangalore, Dec 1998.

S. Kumar, "Framing the Technological Future in the Changing Scenario" (keynote), Proc. National Seminar on Upgrading Professional Practice through Total Quality, held at Allahabad on Sept. 15-16, 1998.

S. Kumar, "High Pressure Jetting : A Competitive Technology of 21st Century for Coal Mining", presented at National Symposium on Instrumentation", Oct. 1998.

N. K. Jha, S. Kumar and A. Verma, "Achieving Global Excellence through Agile Manufacturing", Proc. All India Seminar on Design of Production Systems, July 1998.

Pradyot Basak and S. Kumar, "Effective Management of Agile Manufacturing through Team Working", Proc. National Seminar on Recent Trends In Manufacturing Processes (RIMS), India, 1999, Paper no. 22, pp 139-141.

S. K. Jha, S. Kumar and A. Verma, "VAT Analysis - An Effective Tool in Modelling Factory Automation", Proc. AIS on Design of Production Systems, July 1998, pp 57-60.

Book :

S. Kumar and G. Sutradhar, "Design and Manufacturing", Oxford and IBH Publishing Co., New Delhi, 1998.

Department of Applied Physics

S. Keshri and P. K. Barhai, "Analysis of Thermoelectric Power of Some Insulating High T_c Superconductors Using Extended Hubbard Model", Czech. J. of Physics, Vol. 49, 1999, 539-548.

P. K. Barhai and Manish Kumar Sinha, "Anodic Vacuum Arc Technique for Nanolayer Deposition - II", presented at the National Symposium on Instrumentation (NSI-23) held at B.I.T., Mesra, Ranchi October 7-10, 1998.

M. K. Sinha, M. S. Giri, P. K. Barhai and A. A. Khan, "High Slew Rate Current - Conveyor Based Amplifier for PMT with Protective Circuit Against Accidental Exposures", presented at the National Symposium on Instrumentation (NSI-23) held at B.I.T., Mesra, Ranchi, October 7-10, 1998.

S. Keshri, J. B. Mondal, P. K. Barhai and B. Ghosh, "Fabrication of an Apparatus for the Measurement of Thermoelectric Power at Cryogenic Temperatures", presented at the National Symposium on Instrumentation (NSI-23) held at B.I.T., Mesra, Ranchi October 7-10, 1998.

S. Keshri, "Relation between Excess Thermoelectric Power and Excess Conductivity : Studied for a Ceramic Superconductor Bi_2 Sr_2 $Ca_{0.3}$ $Y_{0.2}$ Cu_2 O_{3+y}, presented at the 41st DAE Solid State Physics Symposium held at Kurukshetra University, Kurukshetra, Dec. 27-31, 1998.

Raman Puri and P. K. Barhai, "Integrated Services Digital Network (ISDN) Technology" presented at the National Symposium on Instrumentation (NSI-23) held at B.I.T., Mesra, Ranchi October 7-10, 1998.

Rakesh Popli, "Paramanu Se Sitaron Tak" Revised Hindi Translation of "One Two Three .... Infinity" by George Gamow published by Vigyan Prasar (DST), New Delhi 1998.

Department of Architecture

Manjari Chakraborty, "A Perspective 2050 on Architecture and Town Planning Education", National Seminar, New Delhi, 1998.

Manjari Chakraborty, "Education in Architecture" and "Architectural Thesis" published in A + D magazine.

Pawan Kumar, "Community Participation in Natural Disaster Management", National Seminar, New Delhi, 1998.

Department of Civil Engineering

K. R. R. Choudhary and Binay Kr. Singh, "Long Term Deflections of R.C. Beams - An Analytical Approach", Proceedings All India Seminar on Concrete for Infrastructural Developments, The Institution of Engineers (India), Roorkee, Fourteenth National Convention of Civil Engineers, Dec. 3-5, 1998.

Arun Kumar and Pawan Kumar, "Transport Planning and Land Use", Proceedings International Conference held at Kathmandu, April 7-9, 1999.

Binay Kr. Singh, "An Experimental Study on Residual Compressive Strength of Glass/ Epoxy Composite after Fatigue Damages", accepted for publication in J. Institute of Engineers (I) 1999.

Book :

V.C.S. Rao and K. V. S. Appa Rao, "Problems in Geotechnical Engineering", Tata McGraw Hill (accepted for publication) 1999.

Department of Computer Science & Engineering

P. K. Mahanti et.al, "Behaviour of Predater-Prey Interaction : A Simulation Study", Int. J. System Analysis Modelling and Simulation, Vol. 32, pp. 181-188, 1998.

P. K. Mahanti & M. Bhattacharya, "Where to Find Our Best Object", Comsomath, Vol. 2, No.1, pp. 36-38, 1999.

M. Bhattacharya & P. K. Mahanti, "Software Reliability System Modelling a Review", AMSE Periodicals France, Dec. 1998 (submitted for publication).

P. K. Mahanti, et.al "A Survey on Interpretation and Design of Medical Expert System", aceepted for presentation in the International Conference on Artificial Intelligence (ICAI-99), Durban, South Africa, 24-26th Sept. 1999.

P. K. Mahanti, et.al "Caching of Multimedia Objects and Approach", Int.J. of Information and Computing Science, 1999 (submitted for publication).

Department of Electronics & Communication Engineering

N. Gupta, C. Ravipati and L. Shafai, "Characteristics of Microwave Transmission Line on Grooved Dielectric Substrate", Microwave and Optical Technology Letters, Vol. 17, No. 1, pp. 55-57, January 1998.

S. K. Ghorai, "Nonlinear Structure of Photorefractive Grating in BSO Crystal", Proc. of International Conf. on Optics & Opto-electronics, Dec. 9-12, 1998, held at Dehradun (India).

J. S. Roy, "A Broadband Microstrip Antenna", Microwave and Optical Technology Letters, 1999 (in press).

Department of Management

A. Prasad, Alka Munjal and S. Shivani, "Corporate Restructuring", Paradigam, Vol. 1, No. 2, Jan. 1998.

Department of Mechanical Engineering

Arbind Kumar, "Energy Conservation in Water pumping Systems", National Seminar organized by IICM, Ranchi 1998.

Arbind Kumar, "High Pressure Jetting : A Competitive Technology of 21st Century for Coal Mining", National Symposium on Instrumentation at BIT, Mesra, 1998.

Arbind Kumar and A. K. Roy, "Hydrogen as a Fuel for Propulsion", National Convention on Indian Space Programme for 2000 and Beyond - A Perspective", at BIT, Mesra, 1998.

Arbind Kumar, "Performance and Exhaust Quality Study of Diesel Engine Aspirating Hydrogen", National Conference on Advances in Automobile Engg., Anna University Chennai, 1998.

Randip K. Das, "Catalytic Reduction of S.I. Engine Emissions using Ion-exchanged X-Zeolite", Paper No. SAE 990015 in Symposium on International Automotive Technology (SIAT-99) at ARAI, Pune, 1999.

Randip K. Das, "ECE R83 Chasis Dynamometer Transient Test Emission Predicitions from ECE R49 Steady-state Emission Test Results", Paper No. SAE 990032 in (SIAT-99) held at AIRAI, Pune, 1999.

Department of Pharmaceutical Sciences

S. Ganguly and B. K. Razdan, "Synthesis and Study of 2-methyl 4(5)-Nitroimidazole Analogs. Paper presented at National Seminar, BIT, Mesra, Ranchi, P-01, Nov, 1998.

Subrata Ghosh and G. M. Panpalia, "Process Optimization in Formulation Development of Contrimoxazole Suspension", National Seminar, BIT,Mesra, Ranchi P-02 Nov, 1998.

Papiya Mitra Mazumdar and D. Sasmal, "Mycotoxins - Limits and Regulation - 1," National Seminar, BIT, Mesra, Ranchi P-03 Nov, 1998.

P.R.P. Verma, P. Ram Kumar and D. Dash, "Formulation and Evaluation of Ketorolac Tromethamine Transdermal Films," P-04 National Seminar, BIT, Mesra, Ranchi Nov. 1998.

PRP Verma and Sunil S. Iyer, "Transdermal Delivery of Propranolol using Mixed Grades of Eudragit : Design. In vitro and In-vivo Evaluation", P-05 National Seminar, BIT Mesra, Ranchi, Nov. 1998.

S. Jha, "Pharmacognostical and Phyto-chemical Studies on Vitex negundo", P-07 National Seminar, BIT, Mesra, Ranchi, Nov. 1998

S. M. Verma, Rishi Prasad and N. Kudada, "Investigation on Pleurotus sajor caju extract for Anti-viral Activity," P-08 National Seminar, BIT, Mesra, Ranchi Now. 1998.

Arnab Samanta, Rupa Mazumdar and Biplab De, "A Review of GATE Question Papers of Pharmacy Stream". P-09 National Seminar, BIT, Mesra, Ranchi, Nov. 1998.

Bharti Dashan and B. N. Sinha, "Studies on Fruits of Jatropha glandulifera", P-10 National Seminar, BIT Mesra, Ranchi, Nov. 1998.

Anil Shinde and S.P. Basu, "Synthesis of 5-(1',3' - Dione 3' Phenyl) propyl) 4- Methoxy benzofuran Analogues", P-11 National Seminar, BIT, Mesra, Ranchi, Nov. 1998.

Ramesh Chandra and B. K. Razdan, "Reclamation of Domestic Sewage By Spirulina Plitensis Cultivation", P-12, National Seminar, BIT, Mesra, Ranchi, Nov. 1998.

S. Samanta, R. Saravana Kartikeyan, and P. Bhavar, "Synthesis and Antifungal Studies of Di and Tripeptides Containing Glycine, Glutamic Acid and Cysteine Combinations", P-13 National Seminar, BIT, Mesra, Ranchi, 1998.

B. K. Singh, D. Sasmal and S. K. Mukherjee, "Physiological Indices - A Tool for Allocation of Heavy and Moderately Heavy Work Load", P-14, National Seminar, BIT, Mesra, Ranchi, Nov. 1998.

J. N. Mardi, B. N. Sinha and S. P. Basu, "Role of Graduate Pharmacist in Management of Medical Stores in a Hospital", 0-14, National Seminar, BIT Mesra, Ranchi, Nov. 1998.

S.G.P. Panpalia, S. K. Aggarwal and M. J. Pinjari, "Influence of Stabilization Time on the Release of Nefedipene from Albumin Microsphenes", I.P.C. & F.A.P.A., Mumbai, Dec., 1998.

B. N. Sinha, S.P. Basu and D. Sasmal, "Biochemical and Haematological Evaluations of Bryonia Epigaea Tubers", ICPL, IPCA & FAPA, Mumbai, Dec., 1998.

P. Bharti Dashan and B. N. Sinha, "Phytochemical Studies on Fruits on Jatropa glandulifera", ICPL, IPCA & FAPA, Mumbai, Dec., 1998.

S. Samanta and Aparrop Das, "Synthesis and Antidiabetic Studies of Acetylated and Metal Ion Derivatives of Cystine, Glyceine and Glutathione in Rabbits. IDP 38, IPCA & FAPA, Mumbai, Dec., 1998.

S. P. Basu, T. Roychoudhary, J. Mahapatra and P. K. Jana, "A Practical Analysis for the Survival of Small Scale Drug Industries", IJP-9 IPCA & FAPA, Mumbai, Dec. 1998.

Avijit Mazumder, B. De and A. Samanta, "Administrative and Infrastructural Development Required for Smooth Running of a Pharmacy Institute", National Seminar of Pharmacy Education and Research, BIT, Mesra, Nov. 1998.

B. K. Singh, D. Sasmal S. K. Mukherjee, "Evaluation of Physical Working Capacity for Work Allocation", (communicated), 1999.

B. K. Singh, D. Sasmal and S. K. Mukherjee, "Physiological Indices - A tool for Allocation of Heavy and Moderately Heavy Work Load", National Seminar, B.I.T., Mesra, Ranchi, Nov. 1998.

Department of Production Engineering

Alok Verma, "Archieving Global Excellence through Agile Manufacturing", Proceeding of Seminar on "New Trends in Manufacturing", Cuttack, July 1998.

Alok Verma, "Reorganisation of Engineering Education for Meaningful and Mutually Beneficial Interaction among Educators, Researchers and Practicing Engineers" Proceedings of the National Seminar on "Manufacturing Technology for 21st Century and Reoganisation of Engineering Education" Thrissur, April 1999.

B. K. Singh, et.al "Physiological Indices - A Tool for Evaluation of Physical Working Capacity", presented in the National Seminar on "Pharmacy Education and Research - Yesterday, Today and Tomorrow" held at BIT Ranchi, November 8-10, 1998.

B. K. Singh, et.al "Optimization of Physical Working Capacity for Work Allocation in Indian Manufacturing Environment" presented in the Second International Conference on "Operations and Quantitative Management", Ahmedabad Jan. 03-06, 1999.

Vinay Sharma attended the Seminar on "Aerodynamic and Mechanical Decelerators" organised by DRDO, Agra, April 08-09, 1999 and presented the following papers :

a. Conceptual Design of Spin Recovery Paprachute System for Light Combat Aircraft.

b. Design, Development and Testing of Stabilising Parachute for Homblet.

c. Wind Tunnel Testing of Unicross Parachute with Divergent and Convergent Arms.

d. An Approach for Baloon Design and Manufacturing.

e. Drug Measurement through Tunnel Testing for Different Hull Shapes used in Aerostat Application.

S.K. Jha, "VET Analysis-An Effective Tool in Modelling Factory Automation", published in the proceedings of All India Seminar on "Design of Production Systems - New Concept", Bhubaneshwar, 26th July, 1998.

Department of Space Engineering & Rocketry

A. K. Chatterjee, A. K. Shrivastava, P. K. Dash and H. K. Mohanty, "Application of Advanced Composite in Space Vehicles", Proceedings of National Convention on Indian Space Programme for 2000 and Beyond, B.I.T.,Mesra, Dec.14 & 15, 1998.

Md. M. Siddiqui and J. N. Mishra, "Flow Unsteadiness and Measuring Method 'on and around' a Finite Wing", Proceedings of National Convention on Indian Space Programme for 2000 & Beyond, B.I.T. , Mesra, on Dec. 14 & 15, 1998.

E. Rajakuperan, A. N. Subhash and J. N. Mishra, "Planar Oblique Shock Wave and Cylindrical Turbulent Boundary Layer Interaction", Proceedings of National Convention on Indian Space Programme for 2000 & Beyond, B.I.T. , Mesra, on Dec.14 & 15, 1998

R. K. Sahoo and J. N. Mishra, "Flow Characteristics of a Van during Cross -wind and Overtaking Process", Presented at Symposium of International Automotive Technology (SIAT- 99), Pune, Jan.13-16, 1999, (SAE Paper 990022).

N. L. Munjal & Mohan Varma," Instrumentation for Processing and Testing of Rocket Propellants", presented at 23rd National Symposium on Instrumentation held at B.I.T. Mesra, between Oct.7 -10, 1998.

Mohan Varma, B.L. Gupta, M. Pandey and S. Nandi, "Fast Response Instrumentation for Ignition Delay Measurement of Hypergolic Liquid & Gelled Bipropellant Systems", presented at 23rd National Symposium on Instrumentation held at B.I.T. Mesra, between Oct. 7-10, 1998.

Mohan Varma, B. L. Gupta and M. Pandey, "Performance Evaluation Studies on Gelled and Metallized Monomethyl Hydrazine-Nitrogen tetroxide System", Proceedings of National Convention on Indian Space Programme for 2000 & Beyond, B.I.T. Mesra, on Dec.14 & 15, 1998.

B. L. Gupta, Mohan Varma and V. Kumar, "Effect of Compositional Variables on the Flow Behaviour of HTPB Based Composite Solid Propellant", Proceedings of National Convention on Indian Space Programme for 2000 & Beyond, B.I.T.Mesra, on Dec.14 & 15, 1998.

B. L. Gupta and Mohan Varma, "Ignition and Combustion Studies on Metallized UDMH-RFNA Bipropellant System", Ind.J. of Engineering & Mat. Sci., Vol 6, Feb. 1999, PP.13-21.

N. L. Munjal, P. C. Joshi and B. P. Srivastava, "Burning Rate Studies of HTPB-AP Composite Solid Propellants', presented at the National Convention on Indian Space Programme for 2000 and Beyond- A Perspective, BIT, Mesra between Dec. 14 - 15, 1998.

A. K. Shrivastava and R. K. Singh, "Effect of Fibre Orientation on Buckling of Composite Plates," Journal of Institution of Engineers (India), Vol 79, Sept. 1998, pp. 5-10.

A. K. Shrivastava and R. K. Singh, "Effect of Aspect Ratio on Buckling of Composite Plates", Journal of Composite Science and Technology, (U.K) accepted for publication 1998.

T. K. Nandi, "Heat Transfer through Cryogenic Rocket Propellant Tank During Ground Hold Conditions", Journal of Space Craft and Rockets", 1998 (communicated).

Book :

A. K. Shrivastava has written a book entitled "Antariksa Vigyan Avang Kachhiya Gati Vigyan", in Hindi for ME/M.Tech Students. This books has been published in Dec. 1998.

SCHOLARS REGISTERED FOR Ph.D

During the year 1998-99 seven scholars were awarded their Ph.D. degree in the Convocation held on Nov. 7, 1998.

S.No.	Name of Scholar	Title of Thesis
1.	Shri Gopal Pathak	Air Pollution in Coal Fields with special reference to Jharia Coal Fields.
2.	Shri B. K. Mishra	Computer Aided Modelling of Solid State Photo-detector.
3.	Shri Taposh Kumar Roy	Problems & Prospects of Marketing of Drugs manufactured by Small Scale Industries
4.	Shri Alok Verma	New Strategies for Improving Industrial Productivity.
5.	Shri Gautam Sutradhar	Development of Forged Components using Sintered Preforms.
6.	Shri Ashok Kumar Tiwari	Influence of Crystal Habit on the Formulation of Cotremoxazole Suspensions.
7.	Shri Durgesh Pant	A Complete Study of Reconfigurable Computer Systems.

Eight new scholars have been registered/permitted to register for Ph.D. programme in the subjects/areas of their study as stated below :

S.No.	Name of Scholar	Title of Thesis
1.	Shri Sudarshan Kumar	Impact of Various Coal Mining Activities on Surface and Ground Water Sources.
2.	Shri M. K. Mukul	Synthesis, Characterisation and Application of High Temperature Aramides.
3.	Shri S. S. Majhi	Synthesis, Characterisation and Environmental Degradation of High Temperature Plastics.
4.	Shri A. K. Thakur	Oxidation and Wear Behaviour of High Strength Low Alloy Steels.
5.	Ms. Papiya Mitra Mazumdar	Pharmacological & Toxicological Studies of some Mycotoxins in Animals.

6.	Ms. Subrata Ghosh	Studies Exploring the Utility of DSC as an Instantaneous Predictor for Drug Excipited Compatibility.
7.	Shri Sumit Datta	Developing a Risk Management Matrix for Effective Project Planning.
8.	Ms. Jayati Ghose	Effect of Transition Metal Compounds on the Thermal Decomposition of Ammonium Perchlorate.

Besides the above, the following 57 scholars were registered for their Ph.D. in the previous year(s); they are continuing the work under the guidance of the respective Doctoral Committees :

1.	Shri Rampal Singh	Vibration of Plates
2.	Shri K. S. Bhat	Process of Larning for Turnaround in Productivity-strategy Formulation and its implementation.
3.	Ms. S. M. Verma	Synthesis and Pharmacological activities of some new analogs of azabicycla nonanes.
4.	Shri Ramesh Chandra	Studies on L-Asparaginase Production.
5.	Shri P. K. Das	Experimental studies on Fatigue of Glass and larbon Fibre reinforced composites under adverse environmental conditions.
6.	Shri B. K. Singh	Experimental studies on Buckling behaviour of Fibre composite stiffened plates.
7.	Shri I. B. Singh	Role of Developmental Agencies in the Socio-Economic development of tribes of Chhotanagpur region.
8.	Shri Arun Kumar	Structural Engineering
9.	Shri Birendra Kr. Singh	Water Resources Engineering
10.	Shri Hari Shankar Gupta	Change Detection in the Forest Cover and Tree Density using Remote Sensing Technology - A Case Study of Ranchi District.
11.	Shri K. Niranjan	A critical study of inventory management in PSU's : a case study of HEC

12.	Ms. Debjani Basak	Metallic Surface Coating Using Anodic Vacuum Arc.
13.	Shri K. N. Jha	Science in the Periphery - A Scientometric Analysis of Science in the Southern African Countries.
14.	Mrs. Richa Sharma	Detection of change in the Forest Cover of Chhotanagpur using multi-data satellite imagery.
15.	Shri Ajay Srivastava	Role of Surface ridges in the evolution of Indo-Gangetic Plain : An Intergrated approach using Remote Sensing and GIS
16.	Shri Gautam Kumar Saha	Transient Fault Control by Software
17.	Shri Manoranjan Pandey	Catalytic Influence on Thermal Degradation and Burn rate of Composite Solid Propellants and their ingredients.
18.	Shri Balram Singh	A Theorietical Study on Magneto-Fluid Dynamic Flows
19.	Shri S. A. Siddiqui	Technological Aspects for Improving Productivity of a Forge Industry
20.	Shri M. Gopal Krishna	Artificial Neural Networks applied to Rolling Mills.
21.	Shri K. S. Madanpuri	Application of Fuzzy and Expert Systems to Telecommunication
22.	Shri D. N. Prasad	Studies on some indegenour seed of for possible utilization in pharmacy
23.	Shri S. Samanta	Synthesis & studies on piperidine Analogs
24.	Shri P. R. P. Verma	Studies on Pharmaceutical uses of some seed Gums.
25.	Shri Deepak M.	Standardization of Herbal Drugs.
26.	Ms. S. V. Subhashini	Numerical Study of Unsteady Com pressible Boundry Layer Flows.
27.	Shri Rajendra Prasad	Quality System for Guided Weapon Systems.
28.	Shri Pramod Kumar Dash	Experimental Studies on Fatigue of Glass and Carbon Fibre Reinforced composites under Adverse Environ - mental Conditions.

29.	Shri B. D. Choubey	Physio-Chemical study of coordinated Malonic Acid and similar Compounds.
30.	Mrs. Sunila Keshri	Study of Oxide Superconductors with high transition temperatures.
31.	Mrs. Aruna Jain	Study of Non-equilibrium Plasmas.
32.	Shri K. R. Roy Choudhary	Buckling of Laminated Composite Plates.
33.	Shri Amit Jana	Theoretical Modelling of Heterounction field Effect Transistor for high speed and Opto-Electronics Applications.
34.	Shri S. K. Datta	Some Theoretical studies on Optically controlled Microwave Semiconductor Devices.
35.	Shri A. K. Mishra	Some Experimental Studies on Environmental Pollution due to Diesel Engine Exhaust.
36.	Shri S. N. Thakur	Castability, Forge-ability, Machinability and Fracture behaviour of Aluminium silicon Alloys.
37.	Shri Sudhir Sharan	Computer based Analysis & Modelling for Integrated Working Capital Management.
38.	Shri R. S. Yadav	Impact of Physical Training on Managerial Effectiveness - a case study of some Institutions and Organisations.
39.	Shri Pawan Kumar Rai	Solid Waste Management in Steel Plants for improved Environment.
40.	Shri Durgesh Pant	A complete study of Reconfigurable Computer Systems.
41.	Shri Prasant Kr. Mukherjee	Quadratic Sruds and Methods of Approximating them in Ancient and Mediaeval Mathematics.
42.	Ms. Sandhya Rani	Study of some Chemical aspects of stres induced Magnetic & Electromagnetic Effects in Transition Metals and Intermetallic Compounds.

43.	Shri Arun Kumar	Synthesis and Pharmacological studies of Indian Analogs.
44.	Shri Rabindra Pd. Sharma	Modelling of the Combustion Process for a Fuel Efficient four stroke spark Ignition Engine.
45.	Shri Arbind Kumar	Investigation on Metal Hydrides as carried to run the future vehicle engine on Hydrogen.
46.	Shri T. R. Ranganath	Studies on Honey Comb Stabilised Saltless Solar Pond.
47.	Shri U. S. Prasad	Stress induced magnetic and E.M. effects in Metals.
48.	Shri Girish Pathak	Tribological investigations in Mechanical Processing.
49.	Shri K. K. Verma	On the Design of some Computer Algorithms to solve second order - ordinary Differential equations.
50.	Ms. Swastika Ganguly	Syntheses and study of newer Imidazole Analogs.
51.	Shri G. Jagadeesh	Study of solar pumped Lasers for space Applications.
52.	Shri S. K. Ghorai	Nonplinear Optics
53.	Shri M. Adiraj	Synthesis and use of Methyl Phosphonate containing Oligonucle otides for the study of B - Z DNA Transition.
54.	Shri B. N. Sinha	Phytochemical and Pharmacological Studies on some Plants used in Indienous System of Medicine.
55.	Shri N. K. Singh	Pharmacological Studies of pseudopelletierine analogs
56	Ms. Deepa Kulkarni,	Formulation and Evaluation of Oral sustained Release Drug Delivery Systems using Tamarind Seed Polyse
57.	Shri N. V. Nagaraj	Pharmacokinetics of Methyl-N (S-(4 (2-Pyridinyl-1)-1-Piperazinyl) carbonyl)-1H-Benzimidazole-2-yl)carbamate (CDRI 81/470), a new broad spectrum Anthelmintic Agent

STUDENTS ACTIVITIES

Various cultural activities of the students of the Institute are traditionally organised by different students clubs and societies. At present there are 17 such societies and clubs in the Institute. Each one is supervised by a senior Professor as its in-charge. All the students activities of various clubs and societies are under the over-all supervision of the Cultural Co-ordinator. A number of activities were organised by different clubs/societies in the year 1998-99, some of these were :

Engineering Society

Organised an industrial tour to TISCO and celebrated Engineers Day to mark the Birth Anniversary of Shri M. Vishweswaraiya and a guest lecture was deliverd on this occasion. It also took part in BITOTSAV-99, the Institute's Annual Cultural show and organised Technical writing, Quiz and Technical group discussion.

NSS

This year, their activities started from 15th August by arranging a 'Prabhat phery' very early in the morning and an Essay Competition-titled 'Mere Sapno Ka Bharat'. The mess staff literacy programme continued throughout the year, they also conducted many programmes on Health, Hygiene, Sanitation, Drug addiction, AIDS etc. in the High Schools/Inter Colleges in the near by villages. The volunteers also helped in Hepatitis - B vaccination programme arranged in the Institute Dispensary by putting up banners in the campus and near by villages.

SPIC MACAY

This society for the promotion of Indian Classical Music and Culture amongst the youth maintained the tradition in organising programmes by artists of national fame.

Pooja Committee

This committee highlighted the religious and aesthetic part of life by organising 'Saraswati Pooja' and 'Vishwakarma Pooja' relevent to learning and Engineering education.

N A P S

The News and Publication Society was involved in information sharing where it started its annual calender of activities with the welcome information bulletin 'Bonjour' for the new batch. NAPS came up with magazine BITOTSAV-99 and covered various sports and cultural activities with appropriate previews and reports. It was the point media manager for BITOTSAV-99 with its involvement in publicity, publications, organizing Info-cell, handling and compiling of all results of various competitiions.

Indian Association for College going Scientists

This assiciation organised "Vigyanika 99" from 22nd to 24th Feb. 1999 to commemorate National Science Day. It also organised an Open Software contest and an on-the-spot Software Contest during Vigyanika and published a news-letter to enable students to pen down their new ideas as well as the latest scientific developments, IACGS actively participated in BITOTSAV-99 by arranging Technical Debate and Science Quiz.

A.V.E.C.

Regular Sunday Movie shows were organised through out the year. Also participated in BITOTSAV-99 and organised Hallwood, Cline Quiz and Antakshari

Dramatic Society

This society organised SPANDAN - 99 just before the BITOSAV - 99 and staged ten memorable plays. It also took active part in BITOTSAV - 99 by organising Mimicry, Skit, Chintakashi, Monoacting, Miming and Improvisation.

Fine Arts Society

FAS organised FAS Rangoli, Painting , Cartooning, Mehndi, Ad Designing, Sketching events during BITOTSAV - 99 and put an exhibition at BIT, Mesra Extension Centre at Lalpur, Ranchi for two days.

Dance & Music Club

Music club, with the help of ROTARACT Club arranged a 'Music night' POKHARAN-3 on 12th September during BITOTSAV-99. Both Eastern and Western Music and songs were presented. Dance club gave a wonderful dance show during the festival. It was a heterogeneous mixture of Classical, Nagpuri, Eastern and Western dances. All events were performed at OAT.

Photographic Society

Like the previous years, the society in this year also covered the various cultural activities which took place at the different occasions. The society arranged an exhibition - "IMAGES - 99" - an exclusive display of colourful experiences during BITOTSAV-99. It went on for three days.

High Landers Adventure Club

Since the inception of club, the students had been organising local as well as distant trekking on foot in hills and forests. HAC participated very actively in BITOTSAV - 99 by putting an exhibition which lasted for 3 days. A large number of photographs of last 4-5 tracks in which the HAC adventurers had acheived very difficult height, were displayed. Also various equipments used in trekking like rucksack, sleeping bags, tents etc. were also displayed.

Besides these, the other societies namely - LEO Club, ROTARACT Club, Student Society of Architecture, BITian Nature Club, HAM, IEEE, UNESCO club also very actively participated in various cultural activities through out the year and particularly during BITOTSAV-99.

During the Annual function of IIT Kharagpur SF - 99 held on 23-26 Jan. 1999, our student Sudipta Kr. Ghosh got Ist prize in Western Instrumental Gitar, Devdoot Maiti got first prize in Cartooning (Painting) and Kunal, Mrinal, Shoumik, Umesh got IInd prize in Quiz while Sanchit K. Kaul got IInd prize in JAM.

At All India Youth Fest held at B.I.T. Sindri, Prashant Dayal and Prashant Kr. Pankaj got first prizes in many events. Sudipto Ghosh also got best performance (Western Instrumental) prize at ISM - Dhanbad.

GAMES, SPORTS & N. C. C.

Games & Sports

The activities of games and sports form an integral part of the curriculum of the under graduate course. The students are exposed to physical training and drill, Gymnastics and Game etc. thrice a week. Suitable arrangements for training, teaching and participation of girls students has also been made and their participation in P.T. & games is compulsory. Now a days on an average, over fifty percent of students take part in the activities.

The Annual Sports Meet, Best Physique Competition and Intramural Tournaments are also organised. Inter Technical Institute and Inter University Tournaments were organised during academic session 1998-99. The zonal and national level competitions organised with the support of Association of Indian Universities this year are :

a. Inter University Kabaddi Tournament at National level.

b. Inter University Football Tournament at Zonal level.

c. Inter Technical Institute Cricket Tournament at Regional level.

The International Congress '98 on Management of Physical Education and Sports organised at Gwalior, was attended by Prof. R. S. Yadav and he presented a paper.

N.C.C.

A total number of 191 cadets were enrolled for N.C.C. in the year 1998-99. The cadets of Ist and IInd semester were given the basic training of drill, weapon training, firing, adventure activities etc. The cadets also took part in the Independence day and Republic day parade. Overall performance of the cadets in the course work and practical training was good. The senior cadets of IIIrd and IVth semester were given the specialised technical training in the areas of Signals, EME and Engineers. Senior army officers have also been visiting the company from time to time and have appreciated the activities. The faculty members who are serving as Associate NCC officers have also updated themselves through participation in NCC refresher courses conducted by NCC directorate.

STUDENT WELFARE SCHEME

Financial Assistance to needy students : The Institute provides Full freeship / half freeship to very poor and poor students respectively. The number of students benefited during 1998-99 were 44.

Book Bank : Books are loaned to the needy students through Book Bank Scheme.

THE STUDENTS' HALLS OF RESIDENCE

The Institute is completely residential and all the students are provided with a room in one of the Hostels or Halls of Residence. The campus has seven hostels for boys and two sperate hostels for girls.

All the hostels are spacious and beautifully laid out in the serene and pleasant campus. The front portion has well maintained lawns with flower beds, elegant bushes and strategically planted ornamental trees. The interior of the hostel includes spacious Dining Halls, Common Rooms, Reading Rooms, Recreation Halls, Photography Dark Rooms located on both the sides of the main entrance. The rooms are constructed in a row with a wide varandah all along the length with air gaps and balconies well set for common use.

The students are provided with a single-seated room furnished with steel cot, table and chair and a built-in almirah. The girl students avail a shared furnished room which is quite spacious and airy. Each room has a cupboard, wardrobe and a sizeable rack.

Indoor games like Table Tennis, Carrom and Chess etc. are available in each hostel in the common room. The Reading room subscribes to a large No. of Magazines, Periodicals and Newspapers covering wide taste of reading of residents. The Entertainment Hall has also been provided with Colour Television set in each hostel.

Inter-hostel tournaments in indoor and outer games, quizes, competitions and adventure trips are a ragular and very attractive feature of the hostel life.

The Hostel Night organised by the inmates is a memorable yearly event where students interact with the faculty members amidst cultural and music programmes, fun and frolic, in festive mood. The Halls are tastefully decorated to mark the occasion.

Each hostel has an Independent Mess, completely managed by the students through Mess committee members elected from among the residents themselves. The committee looks after the complete management including the Menu,preparation, purchases and billing under the supervision of the Superintendent/Assistant Superintendent of the hostel.

TRAINING AND PLACEMENT

The Training and Placement Division interacts with potential employers to try and best match the aspirations of the students with the requirements of the organizations. Campus placements have shown a continuously successful trend for several years. Over 3300 graduates and post-graduates have been successfully recruited through campus interviews during the past 17 years.

During 1998-1999, 27 premier Organisations visited the Institute offering a total of 262 appointments to students from different disciplines. Some organizations are expected to finalize or increase their selections later. The majority of the organizations are offering starting salaries of Rs.1.2 lacs per annum with some offering higher salaries of 1.5 to 2 lacs per annum.

Bio-datas and profiles of students of various disciplines (M. Tech. Remote Sensing, M.B.A., B.E., M.Sc. Bio-Medical Instrumentation, M. Sc. Information Science, DCA, etc.) have also been dispatched to potential employers, with positive responses.

The Division also encourages and helps to arrange industrial training for students during their vacations, at Organizations spread all over the country. A large number of students received training during the Durga Puja and summer vacations.

The summary of campus placements during 1998-1999 is as given below :

Discipline/Branch	No. of Jobs
B.E. MECHANICAL	46
PRODUCTION	05
ELECTRICAL & ELECTRONICS	41
ELECTRONICS & COMMUNICATION	67
COMPUTER SCIENCE	30
CIVIL	--
B. PHARM.	05
M.B.A.	09
M.C.A.	31
M.E. ELECTRONICS	04
MECHANICAL	02
ELECTRICAL	04
M. Tech. Remote Sensing (off-campus)	03 (S/L)
M. Pharm.	06
M. Sc. Information Science	11
M. Sc. Bio-medical Instrumentation	01
TOTAL NO. OF APPOINTMENTS	262
NO. SHORTLISTED	11

The brief details of confirmed appointments offered to the outgoing students during 1998-1999 are as follows.

Composite Campus Placement Status 1998-1999

	Organization	Appointments
1.	WIPRO SYSTEMS, BANGALORE	27
2.	TATA CONSULTANCY SERVICES, CALCUTTA	91
3.	SATYAM COMPUTER SERVICES, SECUNDERABAD	22
4.	PATNI COMPUTER SYSTEMS LTD, MUMBAI	05
5.	COGNIZANT TECHNOLOGY SOLUTIONS, CHENNAI	09
6.	L&T INFORMATION TECHNOLOGY LTD, MUMBAI	03
7.	ITC-ISD, BANGALORE	01
8.	ICIL, PUNE	07
9.	TELCO, JAMSHEDPUR / MUMBAI	03
10.	TATA INFOTECH, NOIDA	29
11.	MAHINDRA BRITISH TELECOM, MUMBAI	01
12.	LARSEN & TOUBRO POWAI, MUMBAI	01
13.	TISCO, JAMSHEDPUR	16
11.	HCL TECHNOLOGIES & INFOSYSTEM, NOIDA	09
15.	HINDUSTAN MOTORS, MADRAS	02
16.	BFL SOFTWARE LTD, BANGALORE	05
17.	WIPRO GE BIO-MEDICAL DIVN, BANGALORE	01
18.	ACE TECHNOLOGES SOFTWARE SOLUTIONS, NOIDA	03
19.	IBP COMPANY LIMITED, BOMBAY	xx
20.	LARSEN & TOUBRO-ECC, CALCUTTA	04
21.	SUBHASH PROJECTS & MARKETING LTD, CALCUTTA	NIL
22.	HINDUSTAN MOTORS, CALCUTTA	04
23.	VOLTAS LIMITED, BOMBAY	01
24.	TORRENT PHARMACEUTICALS LTD, AHMEDABAD	11
25.	CROMPTON GRAVES, BOMBAY	01
26	NATIONAL ENGINEERING INDUSTRIES LTD. JAIPUR	xx
27.	EXIDE, CALCUTTA	NIL
28.	HINDUSTAN MOTORS AUTOMOBILE DIVN. CHENNAI	02
29.	GODREJ GE APPLIANCES, MUMBAI	01
30.	HINDUSTAN WIRE PRODUCTS, CALCUTTA	03
TOTAL NO. OF CANDIDATES SELECTED SO FAR		262

Off-Campus Recruitrnent 1998-1999

	Organization	Appointments
1.	SAMEER MILLIMETREWAVE TECH. GROUP, CALCUTTA	01
2.	M.L. INFO MAP PVT. LTD., NEW DELHI	03 (S/L)
3.	HINDUSTAN WIRE PRODUCTS LTD., CALCUTTA	03

The other Organizations which had planned to visit / asked for biodatas are:

1. POLICY MANAGEMENT SYSTEMS INDIA PVT. LTD., INDORE
2. KIEFER, BANGALORE
3. INTERRA, NOIDA
4. UBEST, CALCUTTA
5. ITW SIGNODE, HYDERABAD
6. HINDALCO, RENUKOOT
7. FLUOR DANIEL, DELHI
8. ELECTROLUX-KELVINATOR, SHAHJAHANPUR
9. BHARTI TELENET, BHOPAL
10. VIDESH SANCHAR NIGAM LIMITED, MUMBAI
11. NATIONAL THERMAL POWER CORPORATION LTD, NEW DELHI
12. KHANSAHEB CONSTRUCTION DIVN., DUBAI
13. SAF YEAST COMPANY LIMITED, BOMBAY
14. STRIDES ALCOLAB, BANGALORE
15. ASTRA IDL, BANGALORE
16. CANNON DEVICES PVT. LTD. CALCUTTA

Annexure - I

BOARD OF GOVERNORS

(As On 01-05-1999)

Chairman	:	Shri G. P. Birla
Vice-Chairman	:	Shri C. K. Birla
Members :		
Nominee of the Government of India, Ministry of Human Resource Development	:	Jt. Educational Advisor (T) (Ex. officio)
Nominee of the University Grants Commission	:	Prof. S. K. Khanna
Nominee of the All India Council for Technical Education	:	Dr. M. D. Tiwari
Commissioner & Secretary Sc. & Tech., Govt. of Bihar, (Ex-officio)	:	Shri A. K. Rath, IAS
Commissioner & Secretary Higher Education, Govt. of Bihar, (Ex-officio)	:	Shri Vijay Prakash, IAS
Commissioner, Chhotanagpur Divn. (South), Bihar, Ranchi (Ex-officio)	:	Shri S. S. Verma, IAS
Nominee of the Chancellor	:	Shri F. Ahmad
Nominee of the Hindusthan Charity Trust	:	Shri C. K. Birla Shri Deepak Chatterjee Dr. H. C. Pande
Vice-Chancellor, BIT, Ranchi (Ex-officio)	:	Prof. S. K. Mukherjee
Member of Institute Faculty	:	Prof. B. S. Rajeevalochanam Shri Bijay Kumar Singh
Members selected by the General Council	:	Shri D. N. Patodia Shri K. P. Singhi Shri G. P. Lal
Secretary : Registrar (Actg.)	:	Prof. G. Sahay

Annexure - II

TECHNICAL COUNCIL

(As On 01-05-1999)

Chairman : Vice-Chancellor, BIT, Ranchi (Ex-officio)	:	Prof. S. K. Mukherjee
Members	:	Shri G. P. Lal Nomination awaited Nomination awaited
Director of Technical Education, Govt. of Bihar (Ex-Officio)	:	Dr. Bharat Bhushan
Director of Higher Education, Government of Bihar (Ex-Officio)	:	Dr. Vidyasagar Yadav
Professors of the Institute	:	Dr. J. N. Mishra Dr. S. Kumar Prof. S. H. Kekre Prof. S. C. Goel Prof. B. S. Rajeevalochanam Dr. R. K. Shrivastava Dr. Ashok Mishra Prof. Awadh Prasad Dr. A. K. Chatterjee Dr. R. C. Prasad Dr. B. G. Varshney Dr. P. K. Mahanti Dr. S. P. Basu Prof. M. K. Saxena Prof. S. P. Bhatnagar Prof. B. P. Roy Dr. N. C. Mahanti Prof. A. P. Singh Dr. P. K. Barhai Prof. S. Sengupta Prof. K.R. Roy Chowdhary Prof. N. R. Rao Prof. B. M. Karan Prof. K.P. Singh Dr. B.L. Gupta

Professors of the Institute (Cont.)	:	Dr. D. Jairath Prof. R. K. Narayan Dr. Mohan Varma Dr. G. M. Panpalia Prof. K. V. Krishnamurthy Dr. D. Sasmal Dr. S. S. Dhabriya Prof. Ram Pal Singh Prof. N. Sengupta Prof. G. C. Singh Prof. B. K. Verma Dr. R. K. Popli Dr. B. N. Das Dr. S. C. Prasad
Under Clause 4 of the Regulations	:	Dr. (Mrs.) M.Mukherjee Dr. Gopal Pathak
Librarian	:	Ex-officio
Controller of Examinations	:	Dr. P. C. Joshi
Secretary : Registrar (Actg.)	:	Prof. G. Sahay

Annexure - III

FINANCE COMMITTEE

(As on 01-05-1999)

Chairman	:	Shri G. P. Birla
Members :		
Nomineee of the University Grants Commission	:	Shri O. P. Nigam
Nominee of the Chancellor	:	Shri S. Vijayaraghawan
Nominee of the Board of Governors	:	Shri C. K. Birla
Nominee of the General Council	:	Dr. H. C. Pande
Vice-Chancellor, B.I.T., Ranchi	:	Prof. S. K. Mukherjee
Hony. Treasurer, B.I.T., Ranchi	:	Shri S. S. Jajodia
Secretary :		
Registrar (Actg.)	:	Prof. G. Sahay

BUILDING & WORKS COMMITTEE

(As on 01-05-1999)

Chairman		
Vice-Chancellor, B.I.T., Ranchi	:	Prof. S. K. Mukherjee
Members :		
Adviser, Planning & Campus Development	:	Prof. G. P. C. Rao
Treasurer, B.I.T., Ranchi	:	Shri S. S. Jajodia
Representative of the Institute Architects	:	M/s. Kothari and Associates, Calcutta.
Representative of the State PWD	:	Nomination Awaited
Head, Dept. of Civil Engg.	:	Prof. B.S. Rajeevalochanam
Member-Secretary :		
Registrar (Actg.)	:	Prof. G. Sahay

Annexure - IV

EXECUTIVES AND DEPARTMENTAL HEADS/INCHARGES

(As on 01-05-1999)

Vice-Chancellor	- Prof. S. K. Mukherjee
Treasurer	- Shri S. S. Jajodia
Registrar (Actg.)	- Prof. G. Sahay

Deans

Policy Planning & Faculty Development	- Dr. B. G. Varshney
Post-Graduate Studies	- Dr. J. N. Mishra
Under-Graduate Studies	- Prof. S. H. Kekre
Collaborative Research Programmes	- Shri T. R. Ranganath
Extension Centres	- Dr. P. Dhyani

Assistant Treasurer - Shri G. S. Chhaochharia

DEPARTMENTAL HEADS/INCHARGES

Architecture	- Prof. N. Sengupta
Applied Chemistry	- Dr. B. L. Gupta
Applied Mathematics	- Dr. N. C. Mahanti
Applied Mechanics	- Dr. S. Kumar
Applied Physics	- Dr. P. K. Barhai
Civil Engineering	- Prof. B. S.Rajeevalochanam
Computer Science & Engineering	- Dr. P. K. Mahanti
Electrical & Electronics Engg.	- Dr. R. K. Shrivastava
Electronics & Comm. Engg.	- Prof. S. C. Goel
Management	- Prof. S. K. Mukherjee
Mechanical Engineering	- Prof. A. P. Singh
Pharmaceutical Science	- Dr. S. P. Basu
Polymer Engineering	- Dr. (Mrs.) M. Mukherjee
Production Engineering	- Prof. S. K. Mukherjee

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