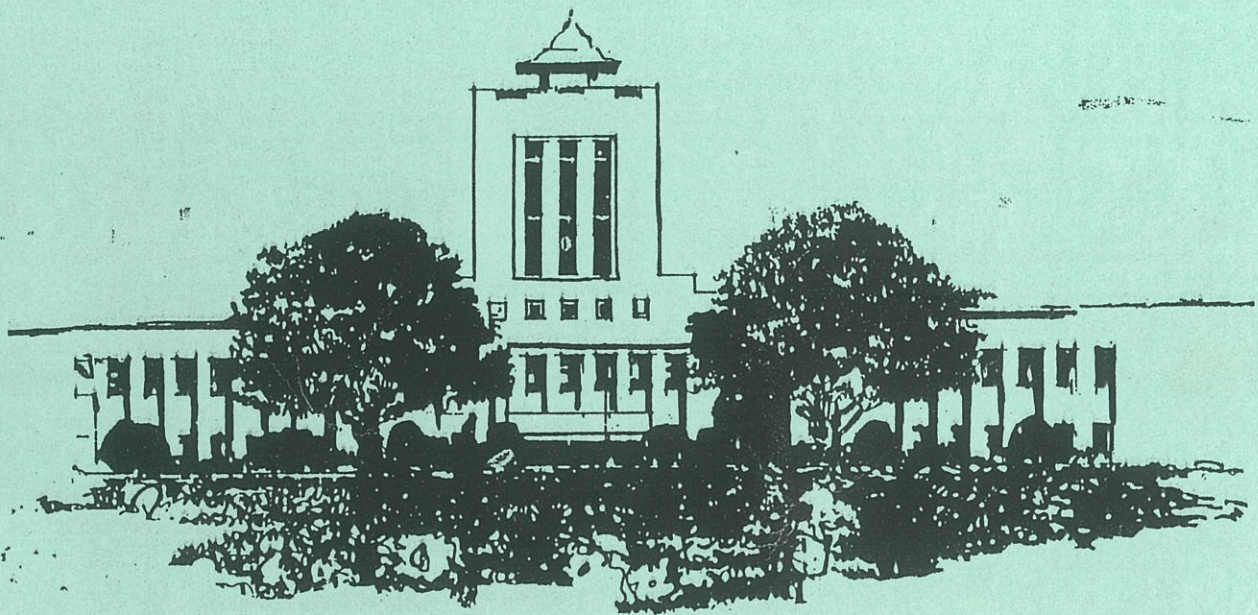


ANNUAL REPORT

1999-2000



BIRLA INSTITUTE OF TECHNOLOGY
MESRA, RANCHI (INDIA)

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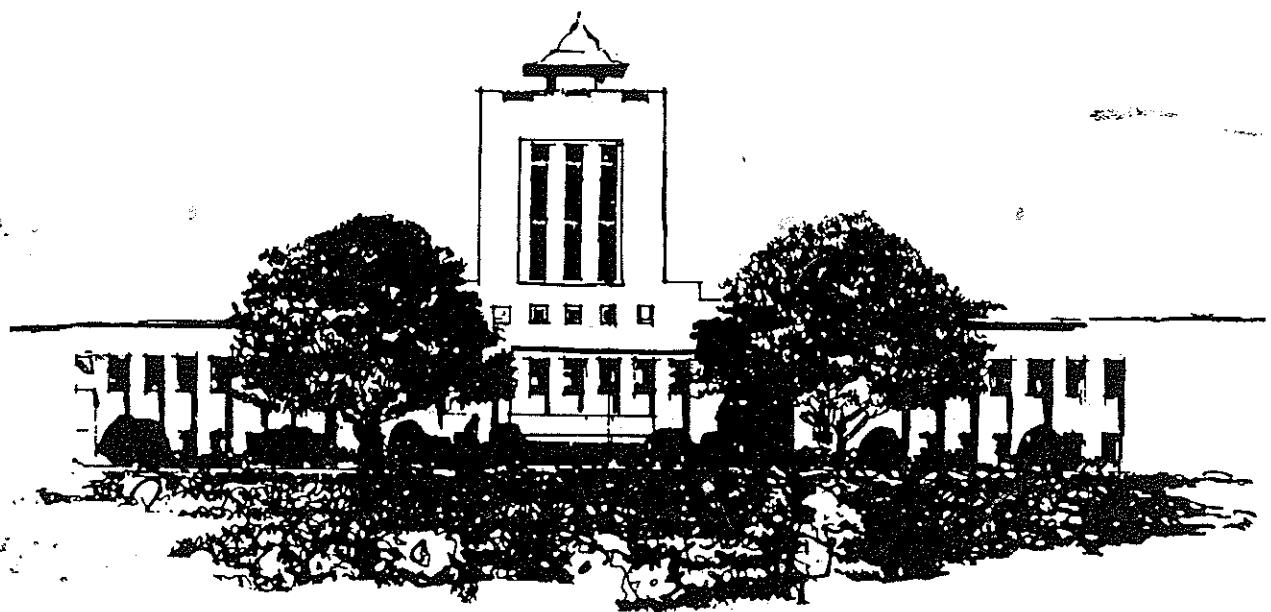
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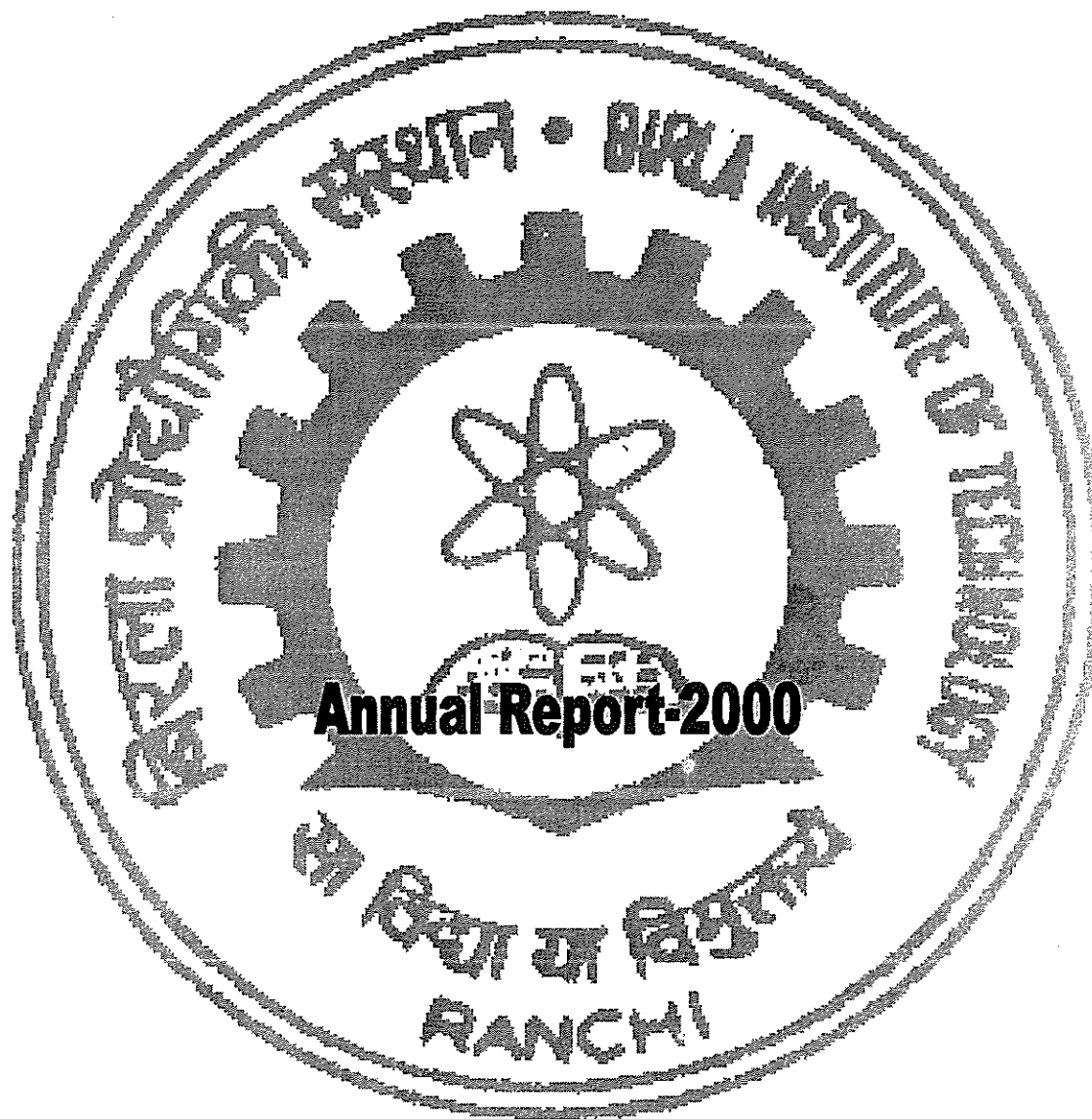
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ANNUAL REPORT

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BIRLA INSTITUTE OF TECHNOLOGY
MESRA, RANCHI (INDIA)



BIRLA INSTITUTE OF TECHNOLOGY
MESRA, RANCHI

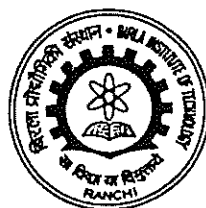


BIT-PRAYER

प्रार्थना

यं शैवाः समुपासते शिव इति, ब्रह्मेती वेदान्तिनो
बौद्धाः बुद्ध इति प्रमाण पटवः कर्तेती नैयायिकाः !
अर्हन् नित्यथ जैन शासनरताः कर्मेती मीमांसकाः
सोऽयं नोविदधातु वाञ्छित फल त्रैलोक्य नाथो हरिः ॥

Annual Report
1999-2000



BIRLA INSTITUTE OF TECHNOLOGY
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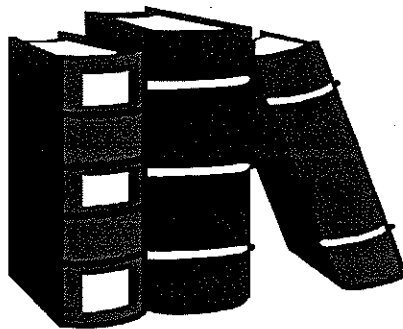
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About This Report



Report-2000

Vice-Chancellor's Report

Birla Institute of Technology during the period covered under the present report has consolidated all its on-going academic programmes as well as introduced a few new programmes through its Extension Centres. The innovative, collaborative programme with the Indian Railway Institute of Mechanical & Electrical Engineering (IRIMEE), Jamalpur, Ministry of Railways, has been progressing satisfactorily and the first batch of students shall be appearing the 2nd Semester Examination during April/May 2000. The collaborative programmes with Generic Education Society for BCA and MCA programmes are also continuing satisfactorily since last year. The other collaborative programme in the area of Information Technology with the Technical Teachers' Training Institute (Eastern Region), Calcutta of the Ministry of HRD, Government of India, is expected to be vetted by AICTE between June-July, 2000. The Super-Computer PARAM-10000 received as a 'gift' from the Ministry of HRD, Government of India, through the Ministry of Information Technology, Government of India, has been received and is expected to be operational during the early May 2000.

The 17,000 Sft. basement of the Hi -Tech R&D Building has become operational and the Central Computer Laboratory is expected to be shifted to its new location during the coming summer vacation. The PARAM-10000 will also be installed in the same floor of the building. This new space is expected to provide a facility by, which about 200 students will be able to perform their computer, related sessional work simultaneously starting from the Monsoon 2000 academic session. The Department of Remote Sensing has also been shifted to its new location in the same building.

The extension of the girls' hostel with additional facility for the accommodation of 40 girls has also been initiated and it is expected that by December 2000 the extension would be complete in all respects. The first floor of the Lalpur Technology Centre annexe is also at its completion stage and is expected to become operational by July 2000. The NOIDA Development Authority has approved the Plan for the 2nd floor of the existing building of the Extension Centre at NOIDA and the construction work is expected to start from June 2000.

A 2-Year (4 Semester) Post-graduate (M. Sc.) programme in Information Technology has been introduced exclusively for the girl students through the Lalpur Extension Centre. The 3-Year BCA has also been introduced at the Jaipur and Naini (Allahabad) Extension Centres of the Institute. The All India Council for Technical Education and the University Grants Commission has formally approved the M. Tech. (Remote Sensing) programme of the Institute. The AICTE has further approved the M. Tech. (Computer Science & Engineering) and M.E. (Software Engineering) programmes. An expert committee of AICTE is expected to visit the Institute for the purpose of granting approval for three more M.E. programmes in the areas of (i) Fuels & Combustion, (ii) Quality Engineering and (iii) Automated Manufacturing Systems. The committee is expected to undertake the visit in June/July 2000. The proposal for introducing M. Pharm. with specialisation 'Ethnopharmaceuticals' will be re-submitted to the AICTE shortly as recommended by the relevant screening committee.

The Institute through its Extension Centre at Lalpur has continued offering short-term (3-6 months) certificate programmes in the area of DTP/ORACLE developer. Further, the Institute shall be starting 6-12 weeks programmes in the area of Web-designing and other Internet related employment oriented topics. Four such courses are also being planned to be offered through Calcutta Extension Centre.

The Institute organised eight academic interaction programmes in the form of international/national Symposia/Seminars. The International Conference on "Computer Simulation Modelling and Communication" was organised at Jaipur during December 1-3, 1999. This programme was organised in collaboration with the Association of Modelling and Simulation Enterprises, France. More than 100 delegates including 15 foreign delegates participated in that International Conference. At the national level the activities started with the "Unnayan'99" organised by the IEEE students Chapter of our Institute at Mesra which was held between 1st to 3rd October, 1999. The second programme was a National Conference on "Agile Engineering: Search of New Path to Excellence" organised by the Department of Production Engineering at BIT, Mesra on October 4-5, 1999. The third one was organised by the Architecture Department - "ZONASA 2000" held during 22nd to 24th October, 1999.

The fourth Seminar on "Application of Mathematics in Social and Industrial Sectors in Next Millennium" was organised by the Mathematics Department during 26th to 27th October, 1999. The fifth Seminar on "Energy Technologies for Sustainable Development" was organised by the Department of Mechanical Engineering during 17th to 18th December, 1999. The sixth programme in the form of a "Refresher Course-cum-Workshop" on Pharmacy Education' sponsored by the Pharmacy Council of India held during 21st to 23rd January, 2000 was organised by the Department of Pharmaceutical Sciences. The "14th National Convention of Production Engineering jointly organised by the Institutions of Engineers (India) and the Production Engineering. Department was held at BIT, Mesra during 25th to 26th March, 2000. More than 300 out-station delegates/participants from various academic institutions through-out the country participated in the seven national level programmes organised at BIT, Mesra. Besides these programmes, invited lectures by eminent personalities of different fields of Engineering, Applied Sciences and Management were organised during the period under report.

During the year under consideration 16 research projects funded by the UGC, AICTE, DST (Government of India), BCST (Government of Bihar) and CSIR were initiated. The total values of these projects were to the tune of 150.00 lakhs. 47 faculty members were sponsored by the Institute to attend/ present papers in different national and international level seminars held at India while 3 faculty members were supported to attend international conferences held at South Africa and Bangladesh. One patent was approved while applications of a few others were pending before appropriate authorities during the period under consideration.

The Science & Technology Entrepreneur's Park continued their activities with active support from BIT. The SIMAP programme and training for rural youths in skill for repairing television and other electronic product was organised by the STEP.

The Institute has signed a MoU with MECON Limited to enhance industry institute collaboration.

The North-East zonal Inter University Kho-kho competition organised by the Association of Indian Universities was hosted by the Institute during 22nd to 27th October, 1999. Further, the Institute teams of

Table Tennis, Tennis, Volleyball and Basketball took part in Inter Engineering Universities/ Colleges Meet-2000 organised by Indian School of Mines, Dhanbad on 11th to 12th March, 2000.

The students of the Institute organised the annual cultural event BITOSAV during October 1999 wherein individual participants as well as the different student activity groups participated. A few students of the Institute have participated in the cultural programmes of the other institutes and won several prizes. The students of MBA programme of the Institute participated in the "Management Quiz" competition at the regional level and could move up to the finals of National level.

It is expected that the Institute will start its activities in the domain of Information Technology with much more vigour in the next year with more liberal and generous support anticipated from the Government of Bihar and Government of India. The Institute looks forward for creation of a model computing facility in which simultaneously 300 students should be able to attend to the sessional works. The Institute further plans to establish network connectivity between its main campus and a few Extension Centres to start with and enter the era of e-Education. The Institute is actively planning to design a Web-based BCA programme, duly coupled with conventional laboratory/computation modules. The Institute is confident to achieve most of these targets with the help, cooperation and good wishes of its students, staff, well wishers and leaders.

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Institute profile at a glance

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 was started 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 (1964-1966) 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 Chancellor of the Universities of Bihar made the Rules for its governance.

The achievements of the Institute, both in terms of research and excellent academic programmes, 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 at its main campus as detailed below:

Course	Intake Capacity	Duration of Course	Year of introduction of the Course
--------	-----------------	--------------------	------------------------------------

Bachelor Degree Courses			
■ Electrical & Electronics Engg.	45	4 years	1955
■ Mechanical Engg.	90	4 years	1955
■ Civil Engg.	60	4 years	1957
■ Electronics & Comm. Engg.	60	4 years	1964
■ Production Engg.	30	4 years	1964
■ Pharmacy	30	4 years	1972
■ Computer Science	30	4 years	1983
■ Architecture	40	5 years	1993
■ Polymer Engg.	30	4 years	1995
■ B.Sc. (Comp. Sc./ Electronics)	30	3 years	1996
■ BCA			
(Girls)	90	3 years	1998
(Boys)	90	3 years	1998

Course	Intake Capacity	Duration of Course	Year of introduction of the Course
--------	-----------------	--------------------	------------------------------------

Master's Degree Courses:			
Electrical	12	1 ½ years	1964
■ Control System			
■ Power system			
Mechanical	06	1 ½ years	1964
■ Heat Power Engg.			
Civil	02	1 ½ years	1964
■ Soil Mechanics			
■ Structural & Foundation Engg.			
Electronics & Communication	12	1 ½ years	1965
■ Instrumentation			
■ Microwave			
Space Engg. & Rocketry	10	1 ½ years	1965
■ Rocket Propulsion			
■ Aerodynamics			
Business Management	30	2 years	1980
■ Marketing			
■ Finance			
■ Systems			
■ Industrial Management			

Pharmacy	10	1 ½ years	1983
■ Pharm. Chemistry			
■ Pharmaceutics			
■ Pharmacology	2	1 ½ years	1998
■ Pharmacognosy	2	1 ½ years	1998
■ Pharm. Biotechnology	2	1 ½ years	1998
M.E.			
■ Computer Aided Analysis & Design	--	1 ½ years	1999
■ Tribology	--	1 ½ years	-----
M.E (Production)			
AMS	--	1 ½ years	
Computer Applications (MCA)	30	3 years	1984
M.Sc. Bio-Medical Instrumentation	15	2 years	1992
M.Sc. Information Science	15	2 years	1993

M.Tech Remote Sensing	15	1 ½ years	1996
M.Sc. Information Technology (girls)	15	2 years	1999

Continuing Education (part time) Post-Graduate Programme

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

■ A certificate of Merit after Completing 5 units.
■ A diploma after completing 10 units.
■ 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
P.G. Diploma Courses			
■ Computer Applications	30	1 years	1988
Master of Engineering			
■ Civil Engineering	--	3 years	1974
■ Electrical Engineering			
■ Mechanical Engineering			
■ Industrial Automation			
■ Computer Aided Analysis & Design	--	2 ½ years	1999
■ A.M.S.	--	2 years	1997
Management			
■ M.B.A	30	3 years	1980
Computer Applications			
■ M.C.A.	30	4 ½ years	1984
■ D.C.A.	30	1 ½ years	1988
M.Tech Computer Sc.	30	1 ½ years	1996

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

Doctor of Philosophy

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

Extension Centres

In order to cater 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, Noida and Ranchi offer MCA, MBA, M.E., M.Tech, and P.G.DCA, B.Sc. (Comp.Sc.) / B.Sc (Electronics) and BCA Courses. The Extension Centre at Naini, Allahabad established in the year 1997-98 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 and Bachelor of Business Administration Degree programmes have already been started at our extension centre at Noida. Other Post-Graduate Programmes in the areas of Business Administration, Computer Applications, Software Engineering and Interior Design, are in the planning stage. A Post Graduate Programme M.Sc (Information Technology) has been introduced at the Lalpur Extension Centre for girls.

About the Administration

B.I.T Mesra is a "Deemed University" under Sec.3 of the U.G.C. Act 1956. It functions under the overall supervision, direction and control of a Board of Governors, comprising representatives of the Ministry of Education, Government of India, the U.G.C., the State Government, the Chancellor, the A.I.C.T.E, the trust and the Institute Faculty. Shri G.P Birla is the chairman of the Board of Governor's The Governor of the state of Bihar is the Chancellor of the institute. The composition of the Board of Governors is given in Annexure.

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 both facilities and standards. The Vice Chancellor of the Institute is the chairman of the technical council. The composition of the Technical Council is given in the Annexure.

The Finance committee gives financial advice to the Institute. Similarly, The building and works committee advises the institute in matters relating to building works activity. The composition of the Finance Committee and Building & Works Committee are given in Annexures.

In addition, there are a number of other committees like the Regulation Committees for Under-Graduate/ Post-Graduate Courses, Semester Programme Coordination Committee, Admission Committee, Scholarship Committee, Student's Welfare Committee etc. These Committees assist the administration in the efficient running of the Institute.

Student Intake

There are 2177 students who have been enrolled during the current Academic year 1999-2000. The branch-wise enrollment is detailed below. Of these there are 593-girl students and 84 NRI and 68 foreign student:

Course	Full-time	Part-time
Bachelors of Engineering	1231	---
Bachelors of Architecture	91	---
Bachelors of Pharmacy	103	---
B.Sc. (Computer Sc. / Electronics)	126	---
BCA	206	---
MBA	32	26
MCA	110	51
DCA	23	---
Master of Pharmacy	22	---
M.E. / M.Tech.	62	38
Bio Medical Instrumentation	28	---
Information Science	28	---
Total	2062	115

Total = 2062 + 115=2177

Faculty Members

Against the sanctioned strength of 213 Faculty positions, 174 are filled with 39 vacancies. The break-up is as follows:

Category	Sanctioned	In Strength	Vacancies
Professor	57	40	17
Associate Professor	62	41	21
Asstt. Prof./Lecturer/ Associate lecturer	94	93	01
Total	213	174	39

The figure in the parentheses represents last year's (1998-99) figures.

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 has been provided accommodation on the campus. About 60% of the administrative and other supporting staff have been provided accommodation on the campus.

About the campus

The Institute is fully residential and extends over 780 acres. The main building of the Institute covers an area of 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.

■ Main building & Administration block	3700
■ Class room & laboratory, Drawing halls, Staff room's etc.	9300
■ Library block	2600
■ Space Engg. & Rocketry block including Explosive and Fuel centre	930
■ Workshop sheds, General stores, Garage / Godown	3721
■ Gymnasium	850
■ Animal House	400

Residential Complex

■ Staff quarters in different types	300 Nos.
■ Residential complex for supporting services: Forest Guards, Dairy, Shopkeepers, Washerman etc.	70 Nos.

Hostel Accommodation

■ Seven Boys Hostel	1410 Rooms(single)
■ Two Girls Hostel	140 Rooms
■ One Foreign Student's Hostel	100 Rooms(single)

Guest Accommodation

The Institute maintains three Guest-Houses. Two general purposes Guest-Houses with 38 furnished rooms and VIP Guest-Houses with 3 deluxe double bedrooms to accommodate Guests appropriately.

Auditorium

To meet the growing needs of the community for public function there is an Open Air Theatre which can seat 2500 persons.

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

Games & Sports

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

■ Field Tracks for Sports / Athletics	-----	1
■ Cricket ground	-----	1
■ Football grounds	-----	2
■ Hockey grounds	-----	2
■ Basket Ball grounds	-----	4
■ Volley Ball grounds	-----	6
■ Tennis courts	-----	6
■ Badminton courts (one indoor and five outdoor)	-----	6

Dispensary-Cum-Health Unit

An Eight-Bed hospital provides the medical facilities to the large campus community mainly as an outdoor-patient unit. The three full- time and one part-time doctor and other para medical staff support this unit. Excellent rapport exists for acute medical needs with the Government Medical College & Hospitals at Ranchi.

Shopping Centre

A well 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 bookstore to meet the growing needs of the Campus has been completed .the annual commodities sold through these outlets of the campus is around Rs.2 crores in value.

Others:

	sq. mtrs.
■ Consumers co-operative stores	500
■ NCC Block	400
Rifle Firing Range	1Nos.
NCC Parade ground	1 Nos.
■ Primary / High School(temporarily Housed in Mechanical Engg. Block)	744

Central Library & Core Labs



COMPUTER CENTRE

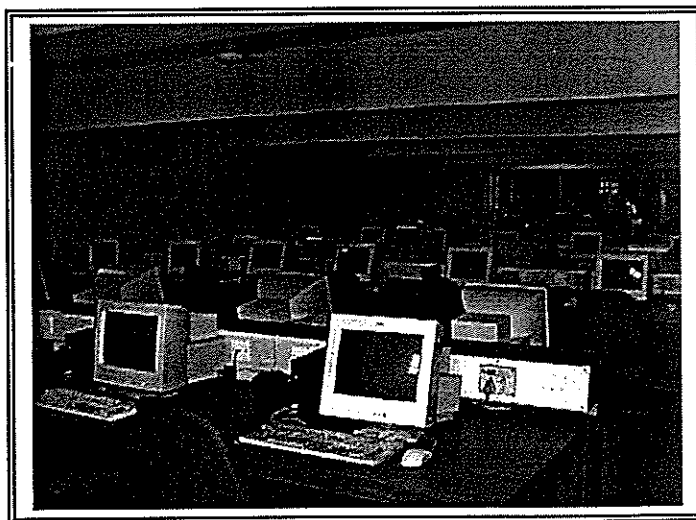
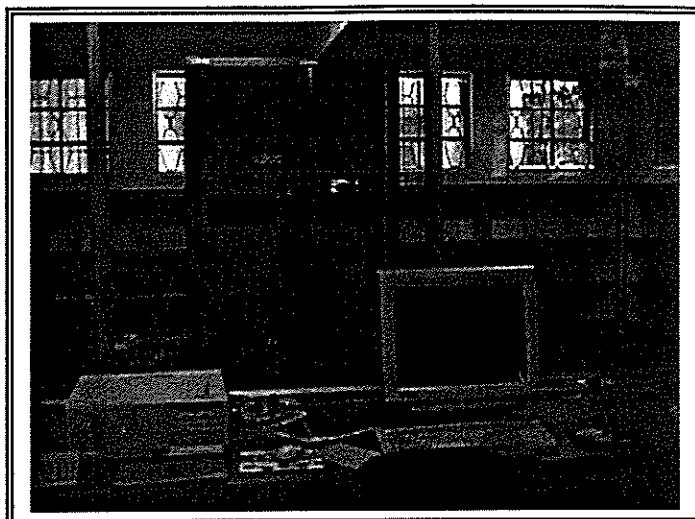
The Computer laboratory is equipped with six high end systems known to be qualified under the super minicomputer and one PARAM-10000 Super Computer category, the details of each one is described below:

- ◆ PARAM-10000 Super Computer, 8 CPU (Ultrasparc 11 @ 450 MHz), 2 CPU/node, 2.5 GB aggregate memory, 10×9.1 GB Ultra SCSI HDD, 32 × CD ROM drive per node, 1.44 MB FDD per node, 2×360W power supply per node, PG×32 Graphics card per node, 101100 fast Ethernet Card in each node, 8 port PARAMNET switch, 4 Nos. PARAM NETCPP2 Card, 12 port fast Ethernet switch, console 21", 4 mm 12124 GB DAT, Solaris 7 server unlimited user license, university workshop softwares, C, C++, F-7, F-90, Pascal, Visual XP, Teamware, on PACT, SPARC works, NEO works,
- ◆ Java, JOE and performance libraries. This system will be installed in our new site and will be connected with 110 PC's in a switched network.

There are a number of Dot Matrix Printers and a line printer with a printing speed of 600 lpm as a common facilities to the above mentioned system. All these system are networked on Ethernet with TCP/IP and NFS. Apart from the above 20 Pentium range of machines with SVGA, 8 MB or more RAM and 80 MB or more hard discs. The microcomputer based software packages include FOX-Pro for Windows 3.1, MS Fortran, MS Word 6.0 for Windows 3.1,

MS Visual Basic 6.0, Borland C++, Turbo Pascal 7.0, JAVA, J++, Visual Studio etc. There is also 2 Trnsputer based parallel processing workstation with parallel C, parallel Fortran and one Tektrnix 41 15B graphics workstation. Recently institute has started E-mail and plan to start Internet access facility through Department of Telecommunication, Government of India, for students and staffs. The Department currently providing computing facilities for 200 students at a time in one slot and kept open for all 7 days from 8 am to 8 PM for the users and plan to start Internet access facility through Department of Telecommunication, Government of India.

- ◆ DEIL 5100 from Digital India with RISC CPU, R3000 and the floating point unit R3010, 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 1.85GB. It has 95 MB CTD and 32 terminals. The operating system is ULTRIX and supports C, Pascal, Cobol and FORTRAN compiles along with INGRESS RDBMS package.



- ♦ TUL U6000/65, a high-end system from TATA UNISYS with two i80486 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 CDROM. 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 software.
- ♦ DEC-Alpha-600 has Alpha@175MHz with 2.5 GB Hard disc, 600 MB CDROM, 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-600 has Alpha@125MHz with 2.5 GB Hard disc, 600 MB CDROM 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 window-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, Speaker Mouse, 535 MB HDD, CDROM, IRIX Operating system with C, C++, Pascal, Cobol compilers, Multimedia showcase.
- ♦ SUN ULTRA 140 workstation/64MB/2GB HDD/17" color monitor/CD ROM Drive/Microphone/Built in Ethernet/Solaris 2.5 operating system/Java workshop/C/C++/FORTRAN Compiler installed in July, 1997.
- ♦ One high end IBM Netfinity Server Pentium-II having clock speed 450 MHz/256 MB SDRAM/9.00 GB HDD/ 40X CD ROM/ Floppy Drive IBM Mouse and 17" SVGA Color monitor with Window NT Operating system and is networked with 50 Nos. NET PC purchased from IBM Singapore.
- ♦ 20 Nos. IBM PC_GL_300 Pentium-II system with 350 MHz clock speed 350 MB SDRAM/ 4.3 GB HDD 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 HDD/ 1.44 FDD/SVGA with 2 MB color Monitor Digital 32X 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 4MB VRAM/4GB Ultra DMA Controller/2*16550 Fast Serial Port/1 EPP-ECP Port/2USB Port/96 MB SD-RAM/104 KBD/Win 98/14" Monitor with Multimedia Kit/40X CD Drive/SBS 10 Creative speaker sound card/Microphone.

DOCUMENTATION AND LIBRARY SERVICES

Collection Development

An upto date collection of publications like books periodicals, conference proceedings, technical reports, CD-ROM databases, standards, etc. reported through literature, catalogues and bibliographies etc. has been maintained for use at national level.

List of Additions

It is quarterly classified lists, which includes new Publications like books, reports, standards and Conference proceedings are added to the library.

Technical Processing

Publications added to the collection were classified, catalogued, indexed and well maintained for efficient retrieval.

Xeroxing and Printing Services

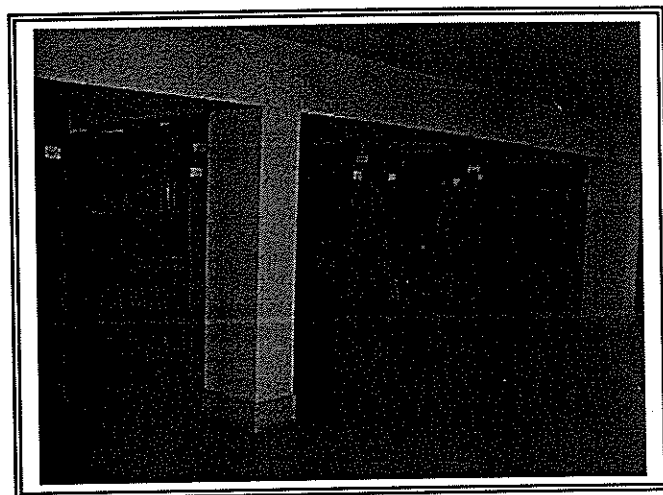
As the central facilities in the Institute, Xeroxing, Microfilming, Printing Services were provided for in-house publications, day-to-day circulars, office orders, special reports etc.

Library Statistics

Books added during the period	=	1265
Total Number of Books	=	63,426
Back volumes	=	1660

Computer based Information Storage and Retrieval System

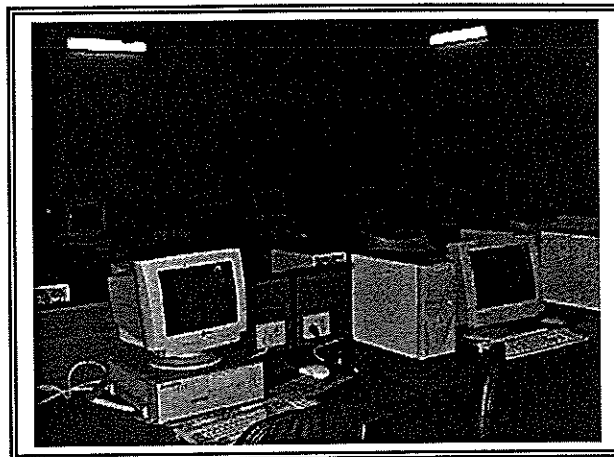
The library is fully equipped with one CDNET (with four drives), one server and 20 nodes, all connected in LAN and two workstations attached with one laser printer for getting the full text. A TCP/IP account for Internet with necessary hardware and accessories have been added recently. Six more terminals are being added to existing Internet facilities.



CENTRAL CAD LABORATORY

Hardware Facilities:

PC-486 10 No.
Celeron 5 No.
Pentium-I 9 No.
Pentium-II 1 No.
Pentium-III 7 No.
CD Writer 1 No.
Printer (LQ-1050.DX, Canon BJC-4550)
Plotter(ENCAD-CADJET-2)



Software Facilities:

This is a central facility used by the students from almost all the disciplines. This laboratory is well equipped with a good number of latest models of PCs connected to a server. This laboratory is made mainly for graphics applications under various platforms- DOS, Novel NetWare, Windows NT, Windows 95 and Windows 98. Students from Under Graduate and Post-Graduate Programmes are getting the facilities to work on the packages like Auto CAD, 3D-Studio, I-DEAS(Artisan Series-3), SMARTCAM, MATLAB, Circuit Maker, Smart Work, STAAD-III, Math CAD, Financial Analyst, SYSSTAT, Principle of Economics, Visual C++, Turbo C++, Visual Basic and Fox Pro etc. An A0 size colour Plotter is also available here for the users to get the hardcopy of the Graphics output.

The Graphics packages are being used to do two or three dimensional drawing and analysis of machine parts, Civil and Architectural Designs. Circuit Maker and Smartwork are used to design and analysis of Electronic Circuits. Users, students and research scholars, are solving the complex mathematical problems using MathCAD package. We are providing the facility to the users to develop their own software packages by using Visual C++ and Visual Basic. MATLAB provides a technical computing environment for high performance numeric computation and visualization. It is integrated with numerical analysis, matrix computation, signal processing and graphics in an easy to use environment. A number of tool boxes- Signal Processing, Control Processing, Statistics, Image Processing, Neural Network, Fuzzy Logic and Optimization are available under MATLAB.

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, and Management disciplines have been revised and upgraded.

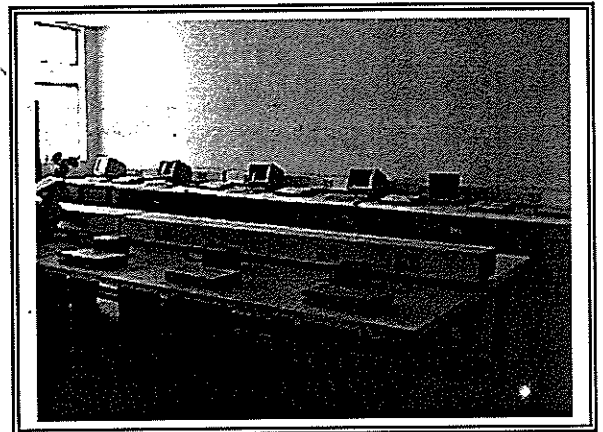
To keep pace with the technical advances and future trends in industry, the institute industry interaction has been encouraged. Several new programmes offering consultancy, testing facilities, trouble shooting and technology development, are being pursued.

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 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 expansions. The HP 9000 system is networked with two HP64000 Development stations to constitute HP-Design Centre.

ROBOTICS LABORATORY

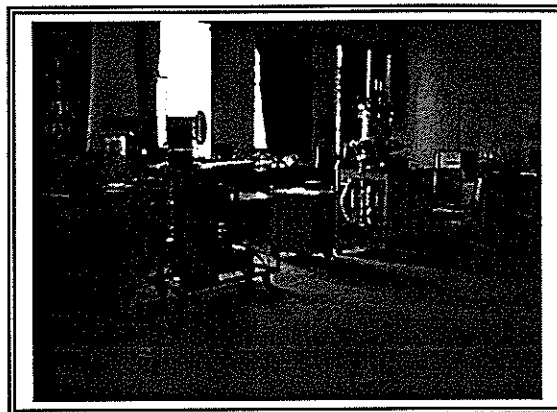
An updated intelligent Robotics laboratory consists of three robots:

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 areas 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 depositions 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 density in low-pressure gas discharges are being fabricated for undergraduate students.

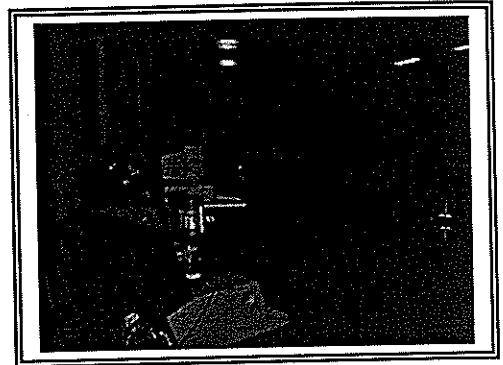
Some of the major facilities existing in the plasma laboratory are:

- Anodic Plasma Deposition Unit
- Sputtering Deposition Unit
- Low Temperature Plasma Generation Units (HHV and IBP Torr)
- Cascade Plasma Torch (Hypertherm, U.S.A.)
- Optical Emission Spectroscopy Unit consisting of Monochromator (JOBINYVON, 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 variety of products, models and styles. Planners for new facilities require their machines, robots and material handling systems to be 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 realised. Realising 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.



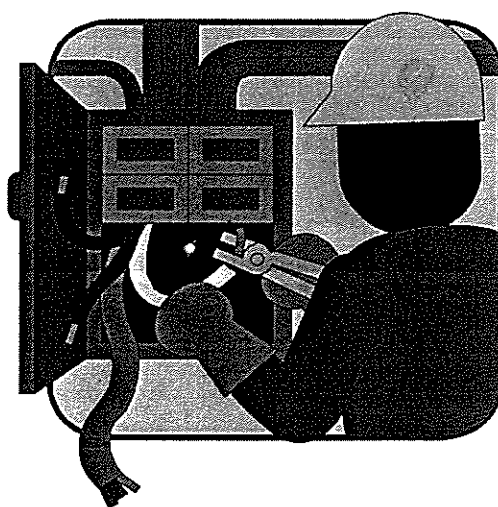
ENVIRONMENTAL ENGINEERING LABORATORY

The Laboratory is well organised for testing of various Environmental Pollution's 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 CRT. 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.

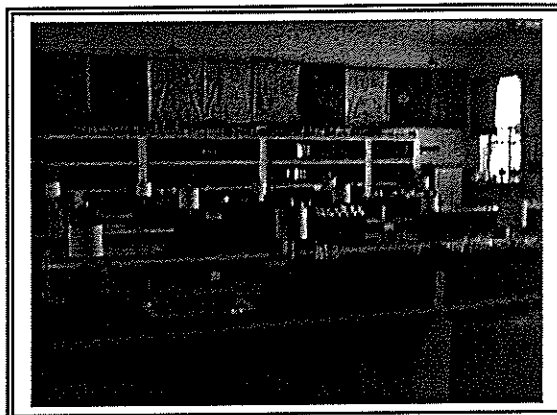
The Laboratory is being used for regular training to Under-graduate and Post-graduate students and also for carrying out consultancy work of various industries.

R&D Activities



Department of Applied Chemistry

Besides catering to the teaching load, the Department is Actively engaged in analysis and testing of variety of substances e.g. water, sewage, aluminum, lime, cement, concrete, metallic ores and alloys. The consultancy work is also undertaken as and when approached.



On Going Research Projects/ Consultancy Work:

	Name of Investigator	Title of Projects	Agency
I.	Dr. Bimal Verma	Synthesis and Applicable of High Temperature Plastics	A.I.C.T.E
II.	Dr. Bimal Verma	Synthesis and Characterizata of Dye Based Polymers	U.G.C

Department of Applied mathematics

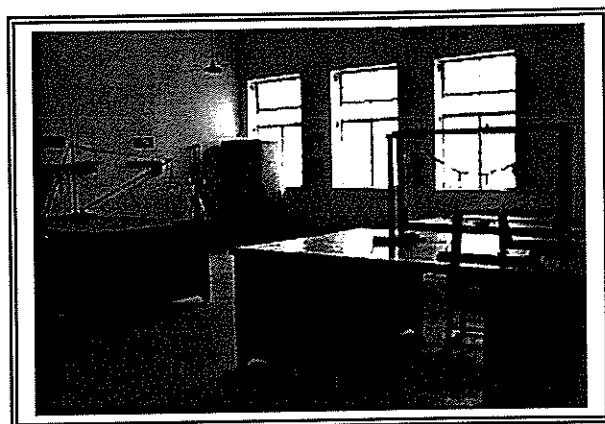
Apart from participating in teaching programme in both Under-Graduate and Post-Graduate Courses of the Institute, the faculty members of the Department are actively involved in research and consultancy work in various fields such as MHD Flows, Mathematical Modelling, Water Waves, Environmental Pollution etc.

Adding a Laser Printer and a Scanner has enriched a Computer Laboratory of the Department. Dr. S. K. Jain guided projects of Mechanical Engineering students in Finite Element Analysis of vibration of beams and plates.

The Department Organised a National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium during 26-27 October 1999. AICTE, CSIR, INSA, New Delhi and Indian Overseas Bank sponsored the seminar. Prof. D.K. Sinha, Vice-chancellor Viswabharati University Shantiniketan, inaugurated the seminar and about Sixty delegates/invited speakers attended it from all corners of the country. Dr. N.C.Mahanti, Prof. & Head of the Department were Organising Secretary of the Seminar.

Department of Applied Mechanics

The Department is involved in teaching and research in the broad areas of Computer Aided Analysis and Competitive Product Design, Fluid Mechanics, Stress Analysis, Tribo-Technology, Reliability, Maintenance Engineering and Structural Dynamics. It runs a Post-Graduate Programme in M.E.(Computer Aided Analysis and Design) to provide students with an in depth understanding of Computational Modelling.



It intends to run Post-Graduate Programme in M.E. (Tribology and Maintenance Engineering). Manufacturing Analysis, Tribo-Technology, Competitive Product Design, Fracture Mechanics, Material Characterization and Composite Materials are the areas of research activities and Ph. D. programme of the Department. The Department is in interaction with various industries and other Technical Institutes to support its M.E. Course. The Department also shares the courses of other Departments at Under-Graduate and Post-Graduate level.

The Department is in the process of establishing a CAAD centre specially for the training for the CAAD, opportunity for industrial research and projects. It includes IT facilities. A computational facility having a number of Networked Workstations and Pentium Machines and an extensive array of Software for Engineering Analysis and Competitive Product Design is already established. Recently ANSYS 5.4, an user-friendly software for structural analysis in various fields such as Mechanics, Electromagnetic Field, Thermal Analysis, Heat Transfer, Fluid Flow and ADAMS 9.1 for analysis of Rigid Body Dynamics as well as Kinematics Analysis, have been acquired.

The Department is aiming at the active interaction between Institute and Industry, related to the Post-Graduate Course 'Computer Aided Analysis and Design'. In this regard the attempt is being made to make the course industry relevant. For effective design of the course, the interactions with eminent academicians of some leading institutions and prominent technologists of leading industries are planned. The interactions with I.I.T., Delhi, I.I.T., Kharagpur, Jadavpur University and B.E. College Shibpur have been made with an effective course structure as an output. The same is planned with the industry for the design of industry-relevant course structure.

On Going Research Projects/ Consultancy Work:

	Name of Investigator	Title of Projects	Agency
I.	Dr. S. Kumar & Prof. A. Kumar	"Development of Water Jet Technology"	A.I.C.T.E
II.	Dr. S. Kumar & Dr. S.C. Prasad	"Formability of Sintered Preforms"	D.S.T.

Seminar

The Department organized a seminar on Finite Element Formulation and its Applications to Machine Design. The talk delivered by Mr. A. K. Roy, the Technical Advisor of Ruia Group of Industries on March 13, 2000 at B.I.T. It was well attended by the faculties and students of various Departments.

Department of Applied Physics

The Department is actively engaged in the development and modification of the Under-Graduate Physics Laboratory and Engineering Materials Laboratory. The modification of the courses and addition of new Equipment to the Laboratories have taken place. The faculty members of the Department are also actively

engaged in research and development work. The main features of these existing central facilities are:

Anodic Vacuum Arc Coating Unit

The Anodic Vacuum Arc Coating unit which was developed during the last two years has been further improvised for non-metallic coating also coatings of ALN has been developed. The current rating of the power supply has also been upgraded to 600A D.C. at 100V D.C. by the addition of a new Power supply.

Cascade Plasma Arc Generator:

Cascade Plasma Arc Generator (Hypertherm, USA) with power of 18 KW has been used to study Argon Plasma under LTE conditions. Spectroscopic method using Carl Zeiss Spectrograph has been developed for the characterization of the Plasma produced by this arc generator.

Vacuum Coating Unit for Sputters Deposition:

This is an additional unit for sputter deposition of thin-films. This unit can be used for production of thin-films.

Shimadzo Atomic Absorption/Flame Emission Spectrophotometer (AA680)

The main features of this facility are:

- a) Automatic selection of optimum operation parameters (lamp current, wavelength, slit width, fuel gas flow rate, type of flame)
- b) Color CRT for display of all operational parameters and analysis of results.

The typical areas of applications are: Analysis of Water Samples, Airborne Dust, Gasoline, Oils, Plastics, Elements Like Iron, Steels, Alloys, Glasses, Cements, Fibres, Cosmetics, Food, Food Additives, Animal Tissues, Plant, Plant Tissues, Soils, Fertilizers, Bio-Fluids, Drugs etc.

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

The main features of this facility are:

- a) Laser Velocity Signals and Digital feed back
- b) Automatic Curve fitting Software
- c) Computer Controlled Automatic Temperature Controller



Holography Unit (Polytec, West Germany):

The holography Unit is ready for construction & reconstruction of holograms. Double exposure holography is in developmental stage, which will be used for material testing. A project on this area has been approved by AICTE under R&D program.

Equipment Added During The Year

The laboratories of Applied Physics Department have been improved by addition of new equipment and new experiments. Some laser-based experiments have been introduced in the laboratory courses. The equipment added is:

- i) Four He-Ne lasers (0.5 mw, 1 mw, 5 mw and 10 mw) have been added. The ruby laser, which had been procured in the sixties, is being brought to working condition soon and both course level and Research level studies will be taken up.
- ii) A new DC power supply (ESAB, INDIA) with maximum capacity 600 A has been acquired for the Anodic Vacuum Arc Coating Unit.
- iii) Two semiconductor Lasers of 2mW along with Optics of Laser quality are the new equipment added to the Physics laboratory.

List Of New Experiments Added to UG Courses

- (i) Single and double slit diffraction using lasers.
- (ii) Measurement of angle of divergence of laser beam.
- (iii) Measurement of Hall voltage of semiconductor sample.
- (iv) Measurement of mass susceptibility of paramagnetic solutions.
- (v) Absorption characteristics of liquid solutions.

Academic Innovation, Research & Development

- (i) Work on characterization of Arc plasma produced by cascade arc generator using optical emission spectroscopy is in progress.
- (ii) The technique of real-time holography is being employed to study and analyze thermal properties of thin sheet materials.
- (iii) Ellipsometric technique for characterization of thin films is also under development.
- (iv) Developed a nanoampere-current source for the electrical characterization of metallic thin-films developed by Anodic Vacuum Arc.
- (v) Theoretical tools for the study of coherent radiation-quantum dot interaction has been developed.
- (vi) Quantum optical theoretical tools are employed to predict new quantum phenomena in nanostructures.

Active collaborations have been established with Theoretical Physics Division, Bhabha Atomic Research Center, Mumbai, Department of Applied Physics, Shri G S Institute of Technology, Indore as well as Satyendra Nath Bose National Center for Basic Sciences, Calcutta for R & D work on quantum dot nanostructures.

The following seminars had been organized in the Department of Applied Physics:

Name of Speakers	Topic
J. T. Andrews	Quantum nanostructures
R. K. Popli	Concepts and Misconcepts in physics
J. T. Andrews	Some experiments with lasers
M. K. Sinha	Electronic power supplies
Manoj Kumar	Modified Saha equations
P. K. Barhai	Laser and plasma assisted surface processing
J. T. Andrews	A study of radiation-matter interactions
G. Gupta	Few new experiments for Engineering materials
R. K. Popli	Some interesting points about the special theory of relativity
Dr. Vijay Kumar	Preparation of Quantum dot materials

Achievement of faculty members:

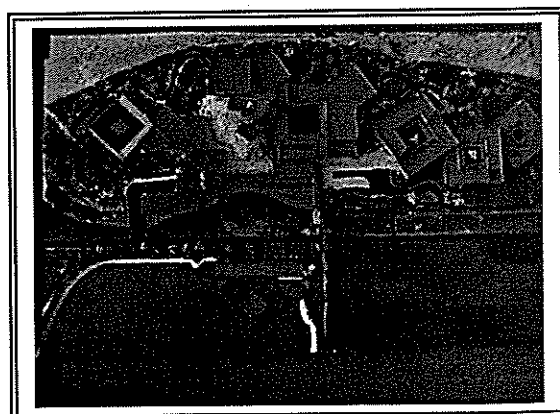
Completed and on-going consultancy work, Research/Industrial Projects, Conferences/Seminars/Symposia organized in the Department and those attended by a staff of the Department

On Going Research Projects/ Consultancy Work:

	Name of Investigator	Title of Projects	Agency
I.	Dr. P.K. Barhai	"Metallic Multilayers Surface Coating Using Vacuum Arc"	ISRO
II.	Dr. J. Thomas	"Non-destructive testing of thin metallic sheets using Rea-Time hology"	AICTE

Department of Architecture

The Department was established in the year 1993-94. The first two batches (total 40 students) have already Graduated and have found gainful employment. This year all 14 students of 1995 batch are expected to Graduate and most of them already secured jobs (some through campus interview). In this short period of time the Department has already earned the reputation of one of the best four schools of Architecture among 104 schools nation-wide in



delivering Quality education in Architecture. New senior faculty members have joined the Department during 1999-2000. In December 1999, an educational tour to West Bengal for more than a week 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 Bangalore where they won numerous top prizes. But their main achievement this time was the hosting of ZONASA at B.I.T., Mesra with grand success. The students have also been participating in different national and international design competitions. Regular Departmental seminars are being conducted by external experts both from academic institutions and industry.

In the central computer lab, all 42 computers have been loaded with AutoCAD 14 other important software, like 3D Studio, Auto Desk, etc., are needed soon.

The Department has maintained a library of its own. More new books have been added. Some important National and International Architectural Journals are presently available in the Central Library. More Journals and Books are in the process of purchase.

Department of Bio-Medical Instrumentation

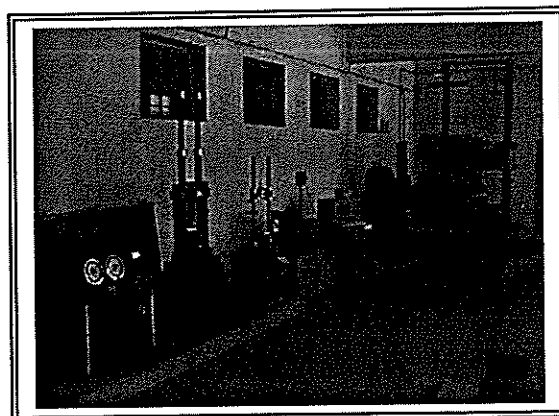
The Department has been steadily processing under the untiring efforts of teaching faculty and supporting staff. Apart from teaching and research work. With the existing facilities of sister developments. A new laboratory for carrying work on "Bio-signal acquisition" experiments has been set up.

Department of Master in Information Science

The course structure and syllabus of courses of M.Sc. (MIS) were revised and upgrade to meet the challenges in Information Science.

Department of Civil Engineering

The Department of Civil Engineering is one of the prime Departments of the Institute. Besides running M.E.(full-time/part-time) and Ph.D. programme, it offers Consultancy in Structure, Soil Mechanics, Environmental, Water Resources engineering . In fact, the Department has been recognised as one of the best centres for material testing in the field of construction and other allied fields. It has a computer laboratory well equipped to cater to the needs of



U.G. and P.G. student's scholars also work in this lab. In order to further improve the academic standard and to make the students face up to the highly competitive job market, the courses were revised to include More of computer oriented subjects. This innovation has

been done with great care so as not to sacrifice the traditional courses, which are fundamental in nature in the marketing of a civil engineering.

Consultancy:

Geotechnical Investigations for foundation design of fifteen Multistoried of Building were carried out.

Department of Computer Science & Engineering

Academic Innovation, Research & Development

Dr. L. Sahoo, Associate Professor of this Department has been awarded a major Research Project from University Grant Commission, New Delhi to undertake a Design and Development Fuzzy and Database System.

Dr. P. K. Mahanti, Professor & Head of this Department has been awarded a major Research Project from University Grant Commission, New Delhi to undertake the Development of a Simulation Model for Multistage assignment problem.

Dr.P.K.Mahanti Professor & Head of this Department has been awarded a major Research Project from University Grant Commission, New Delhi to undertake research on Application of Mathematics Concepts to Develop learning Model for a period of 3 years.

Dr. P.K. Mahanti, has been elected as Vice-President of Association of Modeling and simulation Enterprises, Lyon, France from September 1999 for a period of 3 years.

Students' activities:

Department will start an Hardware and software integration and PC maintenance including trouble shorting from April 2000 for 3rd & 4th year Computer students on Saturday/Sunday for practical exposure on actual system handling.

Short-term Programme Seminar/Conference Organised Attended:

Organised an International Conference on computer Modelling Simulation & Communication (CMMS-99) in association with the Association of Modelling and Simulation Enterprises, Lyon, France, December 1-3, 1999.

Six month short term Desk Top Printing & Multimedia course has started at BIT Lalpur extension centre from January 1999 on regular basis to impart training to local Ranchi resident's Computer awareness Programmes.



Six-month short-term course on Oracle Developer 2000 has started at BIT Lalpur extension centre from April 1999 for Computer professionals in and around Ranchi.

Ms. M. Bhattacharya attended a short course on Generic Algorithm at IIT, Kharagpur in July 1999.

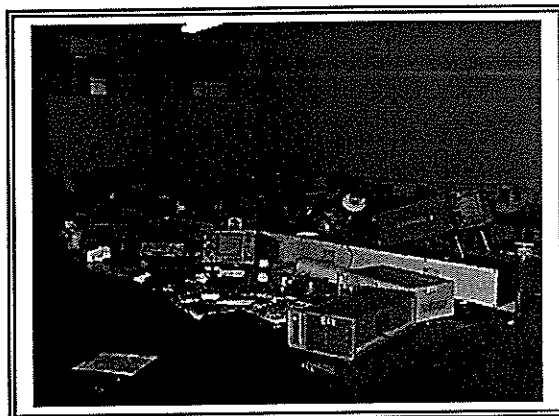
Mr. S. K. Chatterjee attended writer course in object Oriented Programming in C++ sponsored by AICTE, at Bengal Engineering College, Howrah, January 1999.

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, Power Meters, Optical Couplers and Attenuators, Optical Video and

WDM, Monochromator, SM/MM tapered Erbium 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 Microwave Frequency Counter Milliwatt and Power Meter 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 laboratories is well equipped based on 486 DX/2 systems with full motion video frame grabber for capturing image from remote through optical fibers, digital processing with high quality real time video and audio compression and decompression conforming to ADPCM and PCM standards.

Laboratories Established and Equipment Added During the Year 1999-2000:

25 Microprocessor kits have been added in the year 1999

Academic innovations, Research & Development:

	Name of Investigator	Title of Projects	Agency
I.	Dr. D. Pal	"Robotic Vision for Automating Production System"	UGC

On Going Research Projects/ Consultancy Work:

A virtual classroom has been established to teach in the Department on Digital Image Processing for signal processing in the Department.

Department of Electrical & Electronics 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.



Existing Central Facilities

Microprocessor Development Centre is existing for past many years. Recently the center has acquired facilities interems of signal processing boards i.e. TMS320C25, TMS320C30, TMS320C50 AND A WORK STATION WITH TMS320C30.

Laboratories established and equipment added during the year.

Facilities in Power system laboratory, Power electronics laboratory, A High voltage laboratory are being augmented.

On Going Research Projects/ Consultancy Work:

Development Work for Intelligent EEG machine and Intelligent Induction Motor Drive is in progress.

Student Activities

Special prizes won at National level Seminar of IEEE UNNAYAN-99 held from 1st October to 3rd October 1999.

Achievements of faculty member:

Completed and on-going Consultancy work, Research/Industrial Projects, Seminar/Conference/Symposia Organised in the Department and those attended by a staff of the Department.

S. No.	Name of Project	Principal Investigator	Funding Agency
1	Control of Dynamic Systems using Neural Networks & Fuzzy Systems	Prof. B.M. Karan	Government of Bihar (B.C.S.T)
2	Control Systems for Desired Tensions/Compression Rolling in Continuous Hot Rolling Mill	Prof. B.M. Karan	RDCIS, SAIL
3	Study and Design of Intelligent observer and Controller for Induction motor control.	Prof. B.M. Karan	AICTE

Department of Management

The Department has been steadily processing 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.

Infrastructure Development (Central facilities)

Department purchased Mathcad Pro Ae Ver 8.0 On CD, Principle of Economics On CD, Financial Analyst On CD, Systat Ver 8.0 On CD.

Students Activities

- A team of 4 Students of the session 1998-2000 and won the 3rd position in the Eastern Region contest of the Management games Organised by All India Management Association in September 1999.
- Samina Ahmad, won the 2nd position in the Eastern Region Final of the CNBC, complete Manager contest held in New Delhi on 25th November, 1999.
- A team of 4 Students stood won the 3rd position in the National finals of the Management Games contest Organised by All India Management Association on 25th March to 26th March, 2000.

Department of Mechanical Engineering

The Department has been steadily processing 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.

The Department successfully organized a National Seminar on "Energy Technologies for Sustainable Development" on 17th and 18th December 1999.

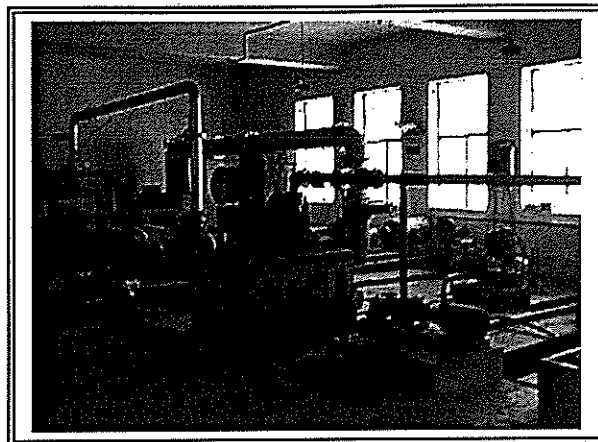
Altogether 51 papers were received out of which 39 papers were presented. Dr. T.C. Tripathi, Advisor & Head, SEC, Ministry of Non-Conventional Energy Sources inaugurated seminar, New Delhi who also delivered the keynote address. Large number of Technical papers were presented by number of participants from Industries e.g. CCL, CMPDI, SAIL (R & D), MECON, ONGC, TISCO etc.

Number of Technical talks by competent people from Industries & Technical Institutes of repute were arranged during the session. The infrastructure facilities of the Department have been improved with addition of E-mails, Xerox machine, Duplicating machine, etc.

Institute signed a MOU with Indian Railway Institute of Mechanical & Electrical Engineering, Jamalpur, Munger under which the special classes Railway Apprentices are studying the courses of Mechanical Engineering and will be awarded degree in B.E. Mechanical Engineering. Number of faculty members visits IRIMEE, Jamalpur for taking lectures etc. The Department has added a portable flue gas analyser capable of measuring the pollutants in the gas from engines, boilers, etc.

Number of faculty members presented technical papers and attended courses at various Institutes. The details are given separately.

Numbers of undergraduate and post-graduate projects were completed. Two M.E. Thesis on Computer Simulation in the field of I.C. Engines were submitted and examined.



Department of Pharmaceutical Science

The Department of Pharmaceutical Sciences have improved its activities during session 1999-2000. In compliance with the requirements of the Pharmacy Council of India, New Delhi, the office of the Department of Pharmaceutical Sciences got renovated. Provision also has been made for a minicomputer room to accommodate computers for research purposes. The instrument laboratory of the Department has



been provided with HPTLC - from Camag, Switzerland. Refresher course cum workshop sponsored by Pharmacy Council of India: Three days programme of Refresher Course cum Workshop sponsored by Pharmacy Council of India (January 21-23, 2000) began with its inauguration on January 21, 2000 at 2.00 p.m. by Mrs. Laxmi Singh, Regional Development Commissioner, Ranchi. Inaugural function was presided over by Dr. S. K. Mukherjee, Vice Chancellor B.I.T., Mesra. Participants coming from Bihar, Orissa, W. Bengal, Punjab and large audience including local guests and faculties attended it. The first lecture on a topic "New Drug Delivery System" was delivered by Dr. S.K. Gupta, Executive Director, Alza Corporation, U.S.A. Second lecture was by Dr. T. Roychoudhary, District Manager, Johnson & Johnson Co. Calcutta on "Role of Marketing Manager in Pharm. Industries". On January 22, 2000, programme began with the lecture of Dr. B.K. Razdan, Ex. Head of the Department of Pharmaceutical Sciences and Dean, PG & Research, BIT, Mesra on a topic entitled "Evaluation of Dosage Forms".

His lecture was followed by Dr. S. K. Gupta's second lecture on "Concepts in clinical pharmacology". The third lecture of the second day's schedule was delivered by Dr. S.P. Basu, Head, Department of Pharm. Sciences, B.I.T., Mesra on "Role of Pharmacist in Health care". Dr. Basu's lecture was followed by another interesting lecture by Ms. Vanita Sinha, Executive, Health Scanning Management, Apollo Hospital, Ranchi on "Computerized Health Scanning Technique for Life Style Management". Post lunch session started with the lecture of Mrs. S.G. Panpalia, Associate Professor, Deptt. Of Pharmaceutical Sciences, B.I.T., Mesra on "Drug Food Interaction".

Her lecture was followed by a lecture entitled "Perspectives of Herbal Drugs", delivered by Mr. B. N. Sinha, Associate Professor, Department of Pharmaceutical Sciences, B.I.T., Mesra. Second day's programme got over with Workshop (Instrumental), where participants were exposed to modern instruments used in Pharmaceutical practice and research. Dr. G.M. Panpalia, Professor of Pharmaceutics, MR. S. Samanta, Associate Professor, Pharm Chemistry & MR. P.R.P. Verma supervised the workshop. Verma, Associate Professor, Pharmaceutics. On January 23, 2000 programme began with visit to Medicinal Plant garden, guided by Dr. S. Jha, Asstt. Professor, Pharmacognosy followed by lecture of Mr. N.K. Singh, Asstt. Professor, Department of Pharmaceutical Sciences, B.I.T., Mesra on a topic "Drug Interaction". Prof. Singh's lecture was followed by the Valedictory function. The Chief Guest was Dr. R. Arya, Chief Medical Superintendent, and CCL Hospital. Function was presided over by Prof. S. H. Kekre, Dean UG Studies, BIT, Mesra. Dr. S.P. Basu, Head, Deptt. of Pharmaceutical Sciences had introduced the Chief Guest and welcome address was delivered by Dr. D. Sasmal, Professor of Pharmacology & Convenor of the Workshop. Vote of thanks was proposed by Prof. B. N. Sinha, Associate Professor & Jt. Convenor of the programme. The Research activities of the Department are boosted up due to sanction of a few of the New Research Projects by various funding organisations.

On Going Research Projects/ Consultancy Work:

	Name of Investigator	Title of Projects	Agency
I.	Dr. D. Sasmal.	"Isolation and Identification of Mycotoxins and Mycotoxin Producing Fungi in Foods and Agricultural Products and their Pharmaceutical Studies"	U.G.C
II.	Prof. N. K. Singh.	"An Alternative Therapy for Kala-azar by Herbomineral Sources"	AICTE
III.	Prof. S. P. Bhatnagar	"World Bank funded Project - Eucalyptus Wood Conversion"	World Bank

IV.	Dr. D. Sasmal, Dr. S. P. Basu & Prof. B.N. Sinha	"Preparation of Edible Grade Pongamia Pinnata Seed Oil And its Toxicological Studies for probable utilization in Pharmaceutical Industry",	U.G.C
V.	Dr. S. Jha & Dr. S.P. Basu	"Standardisation and Quality Control of some Drugs Recommended by WIIO for Re-investigation"	U.G.C.
VI.	Dr. S. P. Basu	"Modernization and Removal of Obsolescence of the Laboratories MODROB"	AICTE
VII.	Dr. S. P. Basu	"New Anticonvulsant Drug From Sources and Search For better Active Molecules through Computer Aided Drug Design"	AICTE
VIII.	Dr. S. Jha	"Ethno-botanical Study of Antidiabetic Plants of Ranchi District"	AICTE

Achievements of faculty members:

Dr. Saumya priya Basu, has been declared as a chartered chemist at the meeting of the Council of Institution of Chemistry (India) on 18 August 1999.

Biographical note of Dr. S. P. Basu has been included in Indo-American Who's-Who by FI Publications, PP64, Vol.2nd, 1999.

Dr. G. M. Panpalia has been associated with the consultancy work of CCL related to problem of Dust Settling involving the preparation of O/W emulsion which in turn would automatically solve the problem of disposal of the oil generated in Coal Fields.

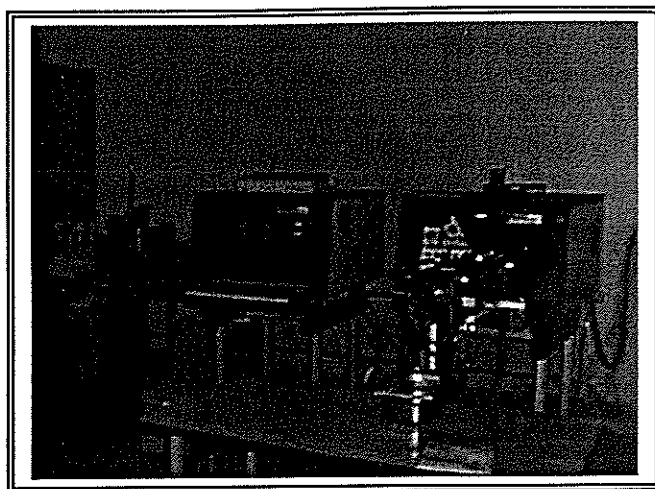
Prof. P. R. P. Verma has been declared as a Chartered Chemist by Institution of Chemist (India).

Dr. D. Sasmal, has been declared as a Chartered Chemist

Prof. B. N. Sinha, has been declared as a Chartered Chemist.

Department of Polymer Engineering

Existing central facilities, which deserve emphasis-indicating developments during the session. The recently established Department offers 4 years undergraduate programme leading to B.E (Polymer Engineering) degree, only its kind in Eastern India. The first batch of students will be graduating in May 2000. The Department has modern laboratory facilities in the major areas of Polymer Engineering-Polymer Science, Polymer Processing, Die and Mould



Design and Fabrication. The existing facilities for Polymer Characterisation are-IR Spectro-photometer, Perkin Elmer, X-ray wide angle Diffractometer Riga-ku, Microscope with Photographic arrangements, IZUMI, Mettler Electronic Balance, Environmental Stress Cracking Apparatus, this academic year the instruments added include Tensile Testing machine, KMI, Impact Testing machine, Shore A & Shore D Hardness Tester and Compression Set apparatus.

The Polymer Processing facilities include WINDSOR Injection Moulding Machine, Compression Moulding, Blow Moulding, Thermoforming, Two Roll Mill and Hot Press, and Record 90, HAAKE, consisting of a mixer Rheomix 600 and a Single Screw Extruder Rheomex-254. The Rheological Testing facilities include Capillary Rheometer, HAAKE and parallel plate and cone & plate Rheometer RT20, HAAKE.

During the Academic year 1999-2000, new faculty member have joined and the Department was engaged primarily in developing new theory and Laboratory Courses. The Academic Programme progressed satisfactorily. During February 2000 an educational tour to Delhi Organised for VIth semester students to visit Plastindia2000, an International Exhibition and conference. The students undertook summer training in Reliance Industries, Hazira, IPCL, Baroda, CIPET, Howrah, XPRO, Delhi and Usha Beltron, Ranchi. The faculty members are actively involved in R&D work. Apart from two on going UGC Projects, the research areas are Polymer Blends & IPNs, Intelligent Polymer materials, development of grooved rubber sole plates for Railways, Optimisation and Simulation of PVC batch reactors.

Laboratories Established and Equipment Added During The Year:

During the academic year Rubber Technology Laboratory has been established. The equipment procured for this are DIN Abrasion Tester, Shore A & Shore D Hardness Tester, Compression Set apparatus. A rotational viscometer RT20, HAAKE with parallel plate and cone & plate attachment, Tensile Testing

Academic Innovation, R&D

During this academic year the Department offered two new laboratory courses namely Computer Aided Engineering and Die & Mould Design and Fabrication. Faculty members compiled laboratory manual on

Auto CAD and Die & Mould Design. The faculty members of the Department are actively involved in R&D works. Some of the outgoing research areas are:

Polymer Blends & IPNs, Intelligent Polymer materials, development of grooved rubber sole plates for Railways, Optimisation and Simulation of PVC batch reactors.

The Department under-took the following testing works:

1. Environmental stress Cracking of HDPE Jerry Can for 201 Engineering Regiment of Indian Army.
2. PVC Cables for Central Coalfields Ltd.

On going research projects/ consultancy work:

	Name of Investigator	Title of Projects	Agency
I.	Dr. (Mrs.) M. Mukherjee	"Rheological Studies of Commingled Plastics Recyclates"	U.G.C
II.	Mrs. S. Goswami	"Development of Injection Grade Polyethylene, Polystyrene and Polypropylene/Polystyrene Blends with improved weldability"	U.G.C

Production Engineering

The Department of Production Engineering have improved its around activities during session 1999-2000. The Department of Production Engineering got renovated, Provision also has been made for a Minicomputer room to accommodate Computers for Research Purposes. 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. Machines, KMI, Impact Testing machine have been added to the existing Polymer Characterisation facilities.



Existing Central Facilities

Flexible Manufacturing Systems Laboratory:

In today's multi-option market there is greater need for flexible production that can be used on a variety of products, models and styles. Planners for new facilities now want their machines, robots and material handling systems to be integrated into a flexible manufacturing system (FMS). The keyword is "System",

FM takes advantage of the flexibility of robots, NC machine tools, industrial logic controllers and microprocessors in creating an over all flexible system. Realizing this trend of switchover from hard automation of 1950s to flexible automation in today's industry, a Flexible Manufacturing Systems laboratory has been set up in the Department of Production Engineering. Setting up of this laboratory is a step in the methodology of unmanned manufacturing.

The laboratory is designed to carry out experiments that give an insight to students regarding fast changing manufacturing scenario in today's industry. The equipment and machines installed in the laboratory include

1. CNC Trainer Lathe (EMCO)
2. CNC Trainer Milling Machine (EMCO)
3. A complete FMC comprising of
 - a) TRIAC CNC Milling Machine
 - b) ORAC CNC Trainer Lathe
 - c) Conveying System with Conveyor
 - d) Two Move Master Robots
 - e) PC and PLC Control System for Co-ordinations control actions of different elements (DENFD)
4. Co-ordinate Measuring Machine (CMM-KEMCO)
5. Flexible Machining Cell Comprising of
 - a) Machining Center
 - b) Linear Movement continuous path robot

Equipment Added during the Year:

1. Single Spindle Automatic Lathe (Model – D-25)
2. Hydraulic Universal Cylindrical Grinding Machine (Model – U127/500)
3. Tool Dynamometers
4. Breadth by Breadth Exercise Test system

On Going Research Projects/ Consultancy Work:

The following are the areas of Research & Development / interest of the Faculty Members

1. Agile Manufacturing
2. Robotic Vision
3. Effect of Manufacturing Parameters on wear and tear of machine tools.
4. Work Design and ergonomics
5. Manufacturing Automation
6. Water Jet Technology
7. Formability of Sintered Preforms

National Conferences and Seminars Conducted in the Department:

1. A National Conference on "Agile Engineering" has been conducted in the Department of Production Engineering on 4th & 5th October 1999 and near about 20 papers were presented and discussed during Six Technical Sessions.
2. 14th National Convention of Production Engineers, IE (I) and the National Seminar on "Mechatronics in Manufacturing systems" have been conducted in the Department of Production Engineering on 25th & 26th March 2000 and about 20 Technical Papers are presented and discussed in four Technical Sessions and G.C.Sen Memorial Lecture and F.W.Taylor Memorial Lecture were delivered by Dr.P.K.Mishra and Dr.R.N.Sharma respectively.

Students Activity:

The following seminars were arranged by the Department for the benefits of the students

1. Dr. S. K .Basu former Director CMERI has delivered a lecture on " Frontiers of Manufacturing" dated 21st September, 1999
2. An in-house Workshop on Robotic Grippers and Sensors was conducted on 27th July, 1999.

Achievement of faculty member:

With active participation of the faculty of the Department, the progress of the work on the following ongoing projects are at advanced stage

- a) Automation in Steel Industry
- b) Development of Infrastructure Facilities for carrying out Design Manufacturing and testing of specially Forging Dies.
- c) Agile Manufacturing.
- d) Plant Design
- e) A short-term Training programme for technicians in the workshop has been started.

Prof. Dr. S.K. Mukherjee, Vice-chancellor has been nominated to council of the Institution of Engineers (India) as one of the four outstanding Engineering Personalities. Ha has also been made the Chairman of the Production Engineering Division Board for the year 2000.

Department of Remote Sensing

The Department is actively engaged in modernisation and development of its various laboratories.

Laboratory Established and Equipment's Added

A new Lab. has been established in the R&D building of B.I.T, Mesra. Four Intergraph TD260 desktops and one Wipro Acer machine has been added to the Lab.

Department also purchased Magellan ProMarkV Global Positioning System (GPS), Umax Scanner, Yamaha 16X CD Writer, HP Scanjet Printer, Kilburn Drafting Table and Four Mirror Stereoscopes. Department procured Intergraph software for GIS, Cartography and Digital Image Processing such as Arc Info7.2, Image Analyst, Modular GIS Environment (MGE), I/RAS, Geomedia Professional, Geomedia, Intersite, Interplot Professional, Microstation SE, Oracle 8.0, Window NT 4.0.



Academic Innovations, Research & Development.

India has Launched several Remote Satellites for Mapping and Monitoring the Natural Wealth of the Country. In future, many other Satellites with Better Resolution and enhanced features are likely to be launched. This calls for a large number of trained personnel to take up the advanced education in RS and GIS. The second batch (1998-99) of M.Tech. Students have 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 Sc. and Technology-Asia and Pacific, Dehradun;

National Institute of Oceanography, Goa; RRSSC, Jodhpur; RRSSC, Kharagpur; RRSSC, Dehradun. The topics of the thesis work included ANN applications for the classification of remote sensing data, textural analysis, software development for Image Processing, Town Planning, Hydrological Investigation, Flood Mapping, Resource Analysis etc.

The faculty members of the Department and M.Tech students of 99 batch are actively engaged in Research Work in various areas like GIS, Digital Image Processing, Resource and Environmental Studies.

On Going Research Projects/ Consultancy Work:

Preparation of landuse and Land Cover maps using RS and GIS Techniques for Subarnsiri Power Projects, NHPC with MECON. Ranchi.

Department of Space Engineering & Rocketry

The Department is actively engaged in modernisation and development of its various laboratories. The faculty members have carried out and guided R & D work in the areas of Aerodynamics, Composite Materials, Propellant Technology, Combustion, and Rocket Propulsion. The postgraduate course of the Department has been redesigned, and several emerging areas have been included in the Syllabus. The research work carried out during the period of report is summarized below:

Aerodynamics Division:

Extensive investigations have been initiated to obtain unsteady aerodynamics load on the launch vehicles with particular reference to PSLV and GSLV along with pressure spectrum, r.m.s. Sound pressures levels, spectrum of sound pressure, r.m.s. Deviations in pressures on and around protrusions which are inherent features of the launch vehicle's geometry. In order to meaningfully monitor the aforesaid parameters, a 4 - channel PC based High Speed Data Acquisitor software along with associated electronics, only of its kind in the Eastern Region has been procured from OROS, France. Besides developing indigenously mechanical pressure sensors, for capturing unsteady pressures and velocity together with Flow Angularity, Piezoresistive type differential Kulite pressure transducers have been procured from Kulite Semiconductors, USA. Work is in progress on PSLV model in transonic- supersonic flows. The R&D work on the UGC Project, "Buffeting of High Rise Block: A Study of Unsteady Industrial Aerodynamics", is in progress to monitor SPL, r.m.s. Pressure deviations, spectrum of pressure and SPL, and to obtain buffeting air load on a high rise block placed in the wake of an upstream high-rise structure. Models simulating a 20-storeyed building in earth type boundary layer at low speed have been employed for subsonic wind tunnel testing.

Patent Application:

Patent for the following device has been cleared from the Patent Office, Calcutta for Gazette notification:

A device to measure unsteady pressure

Patent for the following devices are under consideration:

- I. High Speed Deviation Meter.
- II. Device to Measure R.M.S. Deviations in Flow Angle.

III. A Device to Measure Circumferential Unsteady Pressure

IV. A Device to Measure R.M.S. Flow Deviation.

Composite Materials Section:

Fibre reinforced laminates have found increasing applications in many structures during the last two decades. Few studies have been reported on creep of these composites at room temperature and under typical laboratory conditions, however, in service the materials encounter many hostile environments. The experimental studies have been conducted on specimens exposed upto 500 hours in tap water prior to test. It has been observed that creep of the composite increases due to the exposure in tap water and sufficient degradation in strength takes place due to constant application of creep load. The effect of temperature on the creep of composites is being studied.

The work on fatigue of carbon fibre reinforced composites under adverse environmental conditions has also been carried out with a view to understand the effect of various environmental conditions like water, saline water, acidic water, organic fuel, ice temperature and slightly high temp (60°C), on fatigue life of carbon composites.

The obtained experimental results on fatigue stress and crack propagation are quite interesting. Besides, during this year, a Microcontroller based static strain indicator with automatic channel selector has been purchased for measuring strains at 24 places at a time. A Dynamic strain indicator and a thermal conductivity apparatus are also acquired for measuring strains of vibrating structures and thermal conductivity of composites respectively.

Propellant Technology & Rocket Propulsion Division:

The condensed phase combustion studies on Eco-friendly oxidizer and several newly developed HTPB-AN based composite solid propellants have been conducted. The emphasis was given on obtaining suitable systems with improved ignition and combustion characteristics. Efforts have also been made to prepare phase-stabilized ammonium nitrate at laboratory scale using inexpensive technique. The role of promising catalysts in altering the sub-surface and surface combustion phenomenon is also being investigated.

The pot life of composite solid propellant slurries assumes special significance in development of high-energy solid rocket propellants. The research and development work covering bimodal oxidizer particle distribution and extent of Aluminization on slurry pot life is being carried out. The combustion studies on Metallized (boron and Aluminum) composite solid propellants using a star-configuration grain have been conducted by static rocket test firings with a view to assess performance gains and metal combustion efficiency.

Numerical analysis of transient heat transfer to the cryogenic rocket propellant tanks has been carried out with a view to establish time dependent temperature profile across the integrated insulation package of the cryogenic rocket propellant tanks during ground- hold and flight conditions. Finite difference approach, both simple-explicit and simple-implicit methods of solutions is studied. In order to compare the data obtained in finite difference schemes the other numerical methods like finite element analysis and semi-analytical solutions are also being applied.

Design fabrication and testing of Herringbone- Grooved Journal Bearings for Cryogenic Turboexpander rotors has been another area of activity. High-speed turbine expansion devices are used for efficient Liquefaction of Gases like Oxygen, Nitrogen, Hydrogen, Helium etc. The journal is to be rotated by expanding compressed dry air through a miniature size turbine.

The speed of the journal is expected to be of the order of 1.5 lakh r.p.m. The design of the complete setup including the journal, bearing housing, driving mechanism etc. has been carried out. Fabrication of some of the components like turbine, nozzle ring etc. has already been made by using the existing in-house facilities.

The fabrication of herringbone grooves on the journal is to be made by chemical etching, from BARC. This work will be useful in setting up a cryogenic facility in the Department. Work in the direction of theoretical prediction of thermal stratification of cryogenic propellants stored in an insulated container is being carried out with an objective to establish the time-dependent temperature gradient in the cryogenic liquid due to the heat in-leak from the outer environment. Numerical solutions are being explored to solve the differential equations for momentum and energy (developed for natural convection) simultaneously. Liquid depth is divided into several nodes for finding times dependent temperature of the liquid from the energy and mass balance in each node of the liquid.

On Going Research Projects/ Consultancy Work:

Details of sponsored Projects being progressed by the Department/ New Project Proposals submitted:

	Name of Investigator(s)	Title of Project	Agency
I.	Dr. A. K. Chatterjee Dr. Mohan Verma	“Modernisation of Rocket Propulsion Laboratory”	AICTE
II.	Dr. J. N. Mishra	“Transonic Buffeting :Shock Boundary Layer Interaction	ISRO
III.	Dr. J.N. Mishra	“Buffeting of a High Rise Block A Study of Unsteady Industrial Aerodynamics of Earth Fixed Structural”	U.G.S
IV.	Dr. T. K. Nandi	“Development of Herringbone Grooved Journal Bearing For Cryogenic Turboexpander Rotors	D.S.T.

SCIENCE & TECHNOLOGY ENTREPRENEUR'S PARK (S.T.E.P)

The growth of industrial units based on new technology is a vitally important issue, which can be nurtured by the initiation of some linkage mechanism between R&D institution and industries. To manufacture quality products with scientific and technological sophistication, but with relatively low level of investment, more and more people with science and technology background need to be motivated and encouraged to establish technology- based intelligent industry by interaction with and assistance from Technical institution. With this mind, the Department of Science & Technology (DST), Govt. of India initiated the programme of Science & Technology Entrepreneur's Park (STEP) in a number of institutions of higher learning in various states.

The STEPs were planned at the premier Institutes of the country with the objectives:

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

The experience of Small Industries Research Training & Development Organization (SIRTDO) initiated by the Institute in a collaboration with Birla Institute of Scientific Research (BISR) since, 1972, was a positive example of such a possibility. While SIRTDO was taken as a role model by National Science and Technology Entrepreneurship Development Board (NSTEDB), the first STEP was set up at the Institute, namely BIT-STEP in march, 1985.

The existing infrastructures facilities, such as Central Workshop, Laboratories, Industrial Sheds, etc. have been augmented, and Library, Communication etc. have been created at BIT-STEP to meet the requirements of the existing and viable technology-oriented Small Scale Industrial Units. 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 of rupees.

BIT-STEP has also conducted a number of programmes for various academic target group generally towards developments / improvement of skill and providing purposeful employment. Various Government and financial agencies have duly supported it, like Department of Science and Technology, Government of India, Department of Science and Technology Government of Bihar, Department of Welfare, Government of Bihar and, Small Industries Development Bank of India.

BIT-STEP organised a skill Development Training Programme for Data Entry Operator/Desktop-Top Publishing / Electrician / Welder sponsored by Department of Science and Technology, Government of India during the year, and about 50 youths were trained in above disciplines.

BIT-STEP conducted a 1-year Radio & Television Repair Training Programme for Adivasi youth sponsored by Department of Welfare (Tribal Welfare), Government of Bihar in which 30 candidates got trained. Many of them got employment and a couple of them have started their own venture in the area.

Besides the above programmes, an entrepreneurship Development Programme (EDP) sponsored by Department Of Science and Technology, Government of India and Industrial Development Bank of India was conducted at the Lalpur Extension Centre of the Institute. The six-week programme was designed in such a way that it makes individuals to assess their entrepreneurial capability, imparts the necessary information and skills so that the participants can involve with confidence to become a successful entrepreneur. The programme thus included class room sessions taken by faculty, drawn from our own Institute as well as from SISI, DIC, IED, and Banking and Insurance Sectors, experience sharing by a number of successful entrepreneurs, and field visits to BIT-STEP Industrial Estate. Nine participants got benefited by the programme, which can come up with detailed Project Report at the end of the programme.

The following Technical Papers were presented during the EDP:

Dr. A. K. Chatterjee	:	Entrepreneurship as a career Planning of an Enterprise New Project Opportunities Project Planning in Small Scale Industries Business Communication
Shri. Abinash Prasad	:	A Model of Project Report
Shri Ram Kesh	:	Preparation of Project Report & New Project Opportunities
Shri B. Pathak	:	Computer Applications Computer & Communications
Shri P. C. Behari	:	Training Management Model Project Report on Printed Circuit Board

Conference, Seminar and Workshop Attended by Teachers



Participation of Faculty in National and International Conferences / Seminars Papers presented and Awards Won

Department of Applied Mathematics

Conference and Seminar

- Dr S C Prasad presented the paper "Contour-Deforming Zone in Indentation of Rotary Forging" in the National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium, organised by the Department of Applied Mathematics, B.I.T., Mesra held on 26th and 27th October, 1999
- Dr C Thakur presented a paper "A Study of Magneto-Hydrostatics Equilibrium" in the National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium organised by the Department of Applied Mathematics, B.I.T., Mesra held on 26th and 27th October, 1999
- Dr S K Jain presented the following three papers:

1. Buckling of Elastically Restrained Circular Plates using Method of Collocation by Derivatives
2. Axisymmetric Vibrations of Polar Orthotropic Annular Plates of Varying Thickness
3. A Model Expansion Method of Analysis for Elliptical Microstrip Patch

in the National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium, organised by the Department of Applied Mathematics, B.I.T., Mesra held on 26th and 27th October, 1999

- Dr S K Chakraborty presented the paper "Disturbance due and a Shear Wave in the Immediate Roof of a Mining Face" in the National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium organised by the Department of Applied Mathematics, B.I.T., Mesra held on 26th and 27th October, 1999
- Dr S K Samal presented the paper "Propagation of Surface Wave in a Liquid Saturated Porous Solid Layer Overlying a Transversely Isotropic Elastic Half Space" in the National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium organised by the Department of Applied Mathematics, B.I.T., Mesra held on 26th and 27th October, 1999
- Sri S S Sana presented the paper "An Inventory Model with Stock Dependent Demand Deterioration and Productivity Flexibility" in the National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium organised by the Department of Applied Mathematics, B.I.T., Mesra held on 26th and 27th October, 1999

- Dr. N.C. Mahanti, attended National Seminar organised by the Department of Mathematics, Ranchi University on occasion of Ramanujam Day, 19th January, 2000 and delivered an Invited Lecture in Mathematical Model on Environmental Pollution Problems.
- Dr. S.K. Chakraborty and Dr. S.K. Samal, presented the paper on "The Influence of Pre-stressed Lossy Medium on the Propagation of Plane Elastic Waves" in International Conference on Manufacturing, Dhaka, Bangladesh.
- Dr. S.C. Prasad attended National Seminar on the occasion of Ramanujam day organised by the Department of Mathematics Ranchi University and chaired a technical session.
- S.K. Samal attended and presented the paper on "Mathematical Modelling of Tensional Wave in Self-Reinforced Rod" in National Conference on Non-linear analysis and Applications, Andhra University Waltair.
- C. Thakur attended the International Conference in Geometry and its Application held at Kuvempu University, Bangalore, Jan. 2000 and presented the paper entitled, "A Solution of Steady Plane Orthogonal MHD Fluit Flows".
- S.S. Sana attended the National Conference on Operations Research and Technology held at Devi Dayal Institute of Vocational Education, Dr. B.R. Ambedkar University, Agra. in April, 2000 and presented the paper entitled, "An EPLS Model with Machine Reliability".

Department of Applied Mechanics

Conference and Seminar

- Prof. S. Sengupta attended Conference of Indian Society of Theoretical and Applied Mechanics held at Warangal in Dec. 99.
- Sri R. K. Ranjan attended Conference on Manufacturing at B.H.U., Varanasi, January 2000
- Sri R. K. Ranjan and Sri Rajiv Ranjan attended Conference on Agile Engineering held at B.I.T., Mesra, Ranchi in Oct. 99
- Prof. Rampal Singh attended National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium, held at B.I.T., Mesra, Ranchi in October, 1999.

Workshop:

- A Course on "Neuro-Fuzzy System" at B.I.T., Mesra, Ranchi in Nov. 99 was attended by Prof. N. R. Rao.
- A Course on "Design for Manufacturing" at R.E.C., Warangal in Dec. 99-Jan. 2000 was attended by Prof. N. R. Rao.

- A Training Course on "Micro-Controller based Portable Strain Gauge Data-Logger" at Roorkee in Jan. 2000 was attended by Prof. R. P. Singh and Sri Rajiv Ranjan.

Department of Applied Physics

Conference and Seminar

- Dr. P. K. Barhai attended the Conference on Challenges before Manufacturing Sector in 2000. (COMIM 2000) held at RDCIS, SAIL, Ranchi organized by Indian Institute of Metals, Ranchi chapter in collaboration with MECON Ltd., Ranchi and RDCIS, SAIL, Ranchi, 3rd and 4th February, 2000 and presented a paper entitled "Plasma Deposition of Metallic Thin – Film Utilizing Anodic Vacuum Arc Technique and their Characterization".
- Dr. P. K. Barhai attended the National Conference on Agile engineering held at B.I.T., Mesra, Ranchi, 4th and 5th October, 1999 and presented a paper entitled "Plasma Technology and its Applications".
- Dr. J Thomas Andrews has participated in the DAE-BRNS workshop on Thin Film Multilayers on 6th and 8th, October, 1999 at Bhabha Atomic Research Center, Mumbai and presented a paper entitled; "Pump-probe absorption spectroscopy of semiconductor quantum dots".

Workshop

- Dr. Gagan Gupta attended the Workshop on Laser material processing for Mechanical Industry (WALMI – 2000) held at Jadavpur University, Jadavpur organised by LMPG of Jadavpur University, Jadavpur.
- Dr. J. Thomas Andrews attended the Workshop on Laser material processing for Mechanical Industry (WALMI – 2000) held at Jadavpur University, Jadavpur organised by LMPG of Jadavpur University, Jadavpur.
- Shri Manish Kumar Sinha underwent a week Long Training at the Research and Development Center for Iron and Steel, Steel Authority of India Limited, Ranchi.
- Shri Manish Kumar Sinha participated in the Zonal Workshop on "Scanning Electron Microscopy (SEM)", held on 22nd and 25th August, 2000 at the University Science Instrumentation Centre, Burdwan University, Burdwan.
- Shri Manish Kumar Sinha attended a short-term Course on "Vacuum Science and Technology" held on 6th and 17th March, 2000 at the Cryogenic Engineering Center I. I. T. Kharagpur.
- Shri Manish Kumar Sinha attended the "Advanced Workshop on Non structure Materials" held on 16th and 20th August, 1999 at the Inter University Consortium for D.A.E. Facilities, Indore.

- Shri Balendu Pathak underwent a week's Training at the Research and Development Center for Iron and Steel, Steel Authority of India Limited, Ranchi.
- Shri Balendu Pathak participated in the Zonal Workshop on Scanning Electron Microscopy (SEM), held on, 22nd and 25th August, 2000 at the University Science Instrumentation Centre, Burdwan University, Burdwan.
- Shri Balendu Pathak attended a short-term Course on "Vacuum Science and Technology", held on, 6th and 17th March, 2000, at the Cryogenic Engineering Center I. I. T. Kharagpur.

Nomination for Dr. N. S. Satyamurthy memorial National Award

Dr. J. Thomas Andrews has been nominated for the prestigious N. S. Satyamurthy National award for young scientists. He presented his research work on 24, Mar. 2000 at Bhabha Atomic Research Center, Mumbai.

Department of Architecture

Conference and Seminar

- Prof. N.Sengupta attended on "Housing and Urbanisation for the 21st Century" an International Conference in Bangalore.
- Mr. Mukesh Bajpai attended International Conference "Constro 2000" held in New Delhi on 29th February and 1st March -2000.
- Mr. Pawan Kumar presented papers on "Traffic Management: Some Measures for Sustainable Development " in an International Conference on Environmental Challenge for the New Millennium, Jamia Millia Islamia, New Delhi from 25th and 27th November, 1999.
- Mr. Pawan Kumar presented paper in World Congress on "Natural Disaster Management: A Challenge for Sustainable Development" organised by the Institutions of Engineers (India), Calcutta From 20th and 23rd January, 2000.

Workshop:

- Mr. Nikhil Ranjan Mandal attended a Workshop/Seminar on "Solar Architecture" at I.I.T., New Delhi.

Department of Civil Engineering

Conference and Seminar

- Dr Gopal Pathak attended All India Seminars on sustainable Development at Patna on 13th and 14th February, 1999.
- Mr. V. C. S. Rao attended the "Neurofuzzy and Expert System analysis Applications in civil Engineering", Osmania University, Hyderabad from 3rd and 15th January 2000.
- Prof. C. Thakur and Mr. B. Singh presented papers in an International Conference on Geometry, Analysis, Fluid Mechanics and their Application on "Hydrographic study of steady plane rotating MHD second grade fluid Mechanic flows" held on 15th and 17th January, 2000 at Kempenpu University, Department of studies in Mathematics Jana Sahyadri, Shankaraghatta-577451 Shimoga Dist Karnataka (India).

Workshop:

- Mr Binay Kumar Singh attended Short Term Course entitled "observation and computation of strain data using digital strain indicators", Rohit measurement, Roorkee from 11th and 14th January, 2000.

Department of Electronics and Communication Engineering

Conference and Seminar

- Mr. B.B. Pal and Mr. D. Pal presented a paper "Moment Method and analysis Elliptical Microstrip Antenna" in the National Seminar on Application of Mathematics in Social and Industrial Sector in the new Millennium held at BIT.
- Mr. B.B. Pal and Mr. D. Pal presented the paper in the National Seminar "A Model Expansion Cum Line Current Technique and analyse Rectangular Microstrip Patch".
- Mr. B.B. Pal and Dr. D. Pal presented the paper on National Seminar "A cavity associated two slot Radiator Model for Rectangular Microstrip Antenna".
- Mr. B.B. Pal and Dr. D. Pal presented the paper "A model expansion method of analysis for Elliptical Microstrip patch".
- Dr. D. Pal attended National Seminar on "A current mode approach" Application of Mathematics in Social and Industrial Sectors in Next Millennium, Organised by Department of Applied Mathematics, B.I.T. Mesra, Ranchi from 26th and 27th October 1999.

- Dr. D. Pal attended International Seminar on "Medium range BFSK/BPSK wave generation using Active-R Oscillatodrs suitable for Computer and Computer Communication", International AMSE Conference on Computer Modelling, Simulation and Communication, Jaipur (India) from 1st and 3rd December, 1999.
- Mrs. Nisha Gupta presented the paper on "Constraint Satisfaction Problems in Engineering Electromagnetic" presented in CMSC-99, International AMSE Conference on Computer Modelling, Simulation and Communication, Jaipur (India) from 1st and 3rd December, 1999.

Workshop:

- Mr. B.B. Pal attended summer school at ANNA Universities on "Recent Advances in Biomedical Instrumentation", from 2nd June and 2nd July
- Mr. B.B. Pal attended Short Term Course on "Neural Networks, Fuzzy Logic, Parallel Processing and Genetic Algorithm" conducted by Department of Electrical and Electronics Engineering, Birla Institute of Technology, Mesra, from 10th December and 15th December 1999.

Department of M.I.S.

Conference and Seminar

- Bhaskar Karn attended XXII IASLIC Conference at B. R. Ambedkar University, Agra in 28th and 31th December 1999, presented paper entitled "Information Society and its Impact".
- Bhaskar Karn attended CALIBER-2000: Information Services in a Networked Environment in India, Jointly Organised by University of Madras, Chennai and INFLIBNET Centre, Ahmedabad. He has presented paper entitled "Information needs and Services Required for Medium Scale Industries of South Bihar-A case Study".
- Bhaskar Karn attended Conference on, "Information Technology and Management Science Application" as a Delegate at II Sc., Bangalore.

Department of Computer Science and Engineering

Conference and Seminar

- Dr. P. K. Mahanti attended International Conference on Artificial Intelligence held at Technical University of Natal, Durban, South Africa, from 24th and 26th September, 1999.
- Dr. L. Sahoo attended International Conference on "Computer Simulation Modelling and Communication" held at B.M. Birla Science Centre, Jaipur, from 1st and 3rd December, 1999.

- Ms. M. Bhattacharya attended International Conference on Computer Simulation Modelling and Communication held at B.M. Birla Science Centre, Jaipur, from 1st and 3rd December, 1999.

Department of Electrical and Electronics

Conference and Seminar

- K. Chatterjee and B.M. Karan presented the paper, "Optimal Energy Saving by Capacitance Inductance Switching in Power System" presented in the Conference of Energy Technologies for Sustainable Developments" organised by Department of Mechanical Engineering, B.I.T. Mesra, Ranchi held on 17th and 18th December 1999.
- K. Chatterjee, T. Ghosh, B. M. Karan and S. Paul presented the paper, " Development of a User Interface for Power System Education Software", and be presented in the Conference of SASESC-2000, held at Dayalbagh, Agra on 4th march and 5th march, 2000.
- P. K. Sadhu and B. M. Karan presented the paper,, "New Generation Fluid Heating in Non-metelic Pipeline Using High-Frequency Load-resonant BJT Inverter", and be presented in the Conference of SASESC-2000, held at Dayalbagh, Agra on 4th march and 5th march, 2000.
- M. Gopala Krishna, A. K. Santra, S.C. Khan and B. M. Karan presented the paper, "Application of Artificial Neural Network for Estimation of Cross Sectional area of Bloom at Bhilai Steel Plant", National Seminar –Mechatronics in Manufacturing Systems Organised by Department of Production Engineering, B.I.T. Mesra, Ranchi. held on 25th and 26th March 2000.
- P.K. Upadhyay and B. M. Karan presented the paper,, "Wavelet Transform Based EEG Signal Classification ",in National Seminar- Mechatronics in Manufacturing Systems Organised by Department of Production Engineering, B.I.T. Mesra, Ranchi held on 25th and 26th March 2000.
- T. Ghosh and R.C. Jha presented the paper,, " Optimisation of Energy Loss Reduction in Distribution Systems by Genetic Algorithm", presented in the Conference of Energy Technologies for Sustainable Developments held at B.I.T. MESRA, Ranchi on 25th and 26th March 2000.
- P. R. Thakura presented the paper, "State Variable Modelling of Machine Electronics" in National Seminar on Application of Mathematics in Industrial and Social Sector in Next Millennium, held at B.I.T. Mesra, Ranchi on 26th and 27th November 1999
- T. Ghosh, R.C. Jha, K. Chatterjee and D.K. Mohanta presented the paper,, "Microprocessor based variable speed Dc series motor control", in National Seminar- Mechatronics in Manufacturing Systems Organised by Department of Production Engineering, B.I.T. Mesra, Ranchi held on 25th March and 26th March 2000.

Workshop:

- Many Faculty members actively participated in a "Short Term Course on Neural Networks, Fuzzy Logic, Parallel Processing and Genetic Algorithm" Organised by Department of Electrical and Electronics Engineering B.I.T. Mesra, Ranchi from 10th December and 15th December 1999.

Department of Mechanical Engineering

Workshop:

- Mr. A.K. Roy and Dr. R.K. Das attended short-term Course entitled "Experimental Methods in Thermal Sciences" sponsored by the QIP, Ministry of Human Resources Development, New Delhi from 2nd and 7th August, 1999 at Department of Mechanical Engineering, Indian Institute of Technology, Kanpur.
- Mr. A.K. Roy and Dr. R.K. Das attended short-term Course entitled "Neural Networks, Fuzzy-logic, Genetic Algorithm and Parallel Processing", conducted by Department of Electrical and Electronics Engineering, Birla Institute of Technology, Mesra, from 10th and 5th December 1999.
- Mr. Arvind Kumar attended a Workshop on "Diagnostics of Rotating Machinery" held at B.M. Birla Science Centre, Hyderabad from 13th and 17th September 1999.

Department of Management

Conference and Seminar

- Mr. U. Baul presented a paper on "Augmenting Relationship- The role of organisational customers in a Seminar on "Marketing by Internet at Invertise Institute of Management Study", Bareilly on 19th and 20th February, 2000.
- Dr. S. K. Mukherjee presented the paper, "Scheduling of Employee Using cost Flow Network and Transshipment Models" 13th Engineering Congress Organised by the Institution of Engineers (India) held at Chandigarh on 25th and 26th April, 1999.
- Dr. S. K. Mukherjee presented the paper, "Assessment of Engineering Man Power Selected Industry Group using Fuzzy Associative Memory Neural", Eastern Regional Conference on IT- Opportunities and Challenges, organised by Computer Society of India, Calcutta Chapter at the Park, Calcutta on 11th and 12th June, 1999.

- Dr. S. K. Mukherjee presented the paper, "Assessment of Engineering Man Power Requirement in certain Selected Industry Group in the State of West Bengal for the next Three Years using Fuzzy Time Series Model –ibid".
- Dr. S. K. Mukherjee presented the paper, "Assessment of Engineering Man Power in certain Selected Industry for Transport Operations using Fuzzy Linear Programming Method- ibid.
- Dr. S. K. Mukherjee presented the paper, "Trend in Growth of Engineering Man Power in some Selected Industries using Orthogonal Polynomial- ibid.
- Dr. S. K. Mukherjee presented the paper, "Forecasting of Engineering Man Power in Certain Selected Industry Group in West Bengal using Fuzzy Time Series Model -ibid"
- Dr. S. K. Mukherjee presented the paper, "Geometric Programming (GP) Based Replacement Analysis of a LHD Machine", National Seminar as Mining Machinery; Present Status and Future Development, organised by Indian School of Mines, Dhanbad on 26th and 27th November, 1999.
- Dr. S. K. Mukherjee presented the paper, "Placement of Personnel using Analytic Hierarchy Process (AHP)", 14th Indian Engineering Congress organised by the Institution of Engineers (India) held at New Delhi on 29th and 31st January, 2000.
- Dr. S. K. Mukherjee presented the paper, "Rule Based of a Fuzzy Experts Selection System", National Seminar on "IT for Innovation" organised by Computer Society of India held at Bombay on 1st and 4th December, 1999.
- Dr. S. K. Mukherjee presented the paper, " Assessment of Engineering Man Power in Certain Selected Industry Group in the State of West Bengal using Fuzzy Feed forward Back Propagation Neural Network Model", 5th International Conference on Cognitive Systems in New Delhi on 15th and 18th December, 1999.

Workshop:

- Dr. A.N. Jha attended a Faculty Development Programme Organised by ICFAI in association with NISIEI on the current Development in Industry and Business on 3rd May and 6th May, 1999.
- Mr. S. C. Misra attended a QIP Course on "The Recent Trends in the Reliability Engineering", at I.I.T. Kharagpur on 1st November and 6th November, 1999.
- Dr. R.N. Bhagat attended a workshop on "Logistics and Supply Chain Management" at I.I.T. Bombay.

Department of Pharmaceutical Science

Conference and Seminar

- Dr. S.P. Basu attended the 51st IPCA at Indore, 18th and 20th December, 1999 and presented a Research paper.

- Dr. S.P. Basu and Dr. S.Jha attended UGC Sponsored National Seminar on "Medicinal Plants Diversity in Chotanagpur Plateau and Human Welfare at Ranchi", 21st and 23rd may, 1999 and delivered invite Popular Lecture and also presented a paper.
- Dr. S. Jha attended an International Seminar on Ayurvedic Medicines at Jamnagar, in January 2000 and presented a Research paper.

Workshop:

Ms. Rupa Mazumder and Mr. Avijit Mazumder attended Summer School for Young Pharmacy Teachers at Jadavpur University, Calcutta.

Department of Polymer Engineering

Conference and Seminar

- Dr. (Mrs.) M. Mukherjee and Mr. S. Datta attended International Conference "Plastics 2000, Indian Millennium conducted by Plast India Foundation on 20th February and 23rd February at New Delhi.

Workshop:

- Mrs. S. Goswami (Sharma) attended International short-term Course on "Rubber Processing and Product Engineering " conducted by Rubber Technology Centre, I.I.T. Kharagpur from 31st January and 4th February 2000.
- Mr. C. Guria, attended short-term Course on " Neural Networks, Fuzzy logic, Parallel Processing and Genetic Algorithm" conducted by Department of Electrical and Electronic Engineering, B.I.T. Mesra on 10th and 15th December 1999.

Department of Production Engineering

Conference and Seminar

- Dr. S.Kumar and Mr. S.K. Jha attended a National Conference on "Manufacturing challenges in 21strategy Century" in January 2000 at B.H.U and Dr. S.Kumar delivered a keynote address and Chaired one of the technical sessions and Mr.S.K.Jha presented a paper in the Conference.
- Mr. Somnath Chattopadhyay attended an International Conference on Manufacturing, in Feb. 2000, at BUET, Dhaka, Bangladesh and presented a paper.
- Dr. S.K. Mukherjee delivered the inaugural address "Next Generation: A Manufacturing Enterprises" in National Conference on "Manufacturing Challenges in 21strategy Century" in January 2000 at BHU.

- Dr. S.K. Mukherjee attended the 4th Indo-Japan joint Seminar on “ Advanced Manufacturing System” held at Gangtok, Sikkim on February 20-25, 2000 and presented a paper.
- Dr. S.K. Mukherjee has attended a Seminar on “Condition Monitoring” at Bhubaneshwar and delivered the valedictory address.

Best paper Award:

- Mr. Vinay Sharma received the best paper award for his paper entitled “Rapid Prototyping – An Agile Technology for Product Development” in one of the technical sessions in the National Conference on “Agile Engineering”.
- Mr. Somnath Chattopadhyaya received the best paper award for his paper entitled “Smart Layer Approach for Built Diagnostic”, in one of the technical sessions in the National Conference on “Agile Engineering”.
- Mr. S.K. Jha received best paper award for his paper on “Manufacturing Challenges in 21st Century” held at BHU.
- Mr. Somnath Chattopadhyaya received the best paper award for his paper entitled “Design of a Mechatronic Factory - A case study on a Conveyer Belt Manufacturing unit”, in one technical session in the National Seminar on “Mechatronics in Manufacturing Systems ” and 14th National Convention of Production Engineers, IE (I).

Workshop:

- Mr. Sudhir Kumar attended training Programme on “Diagnostics of Rotating Machines ” at Hyderabad.
- Mr. Atul Anand attended a training programme on Information Technology at Bangalore.
- Mr. Somnath Chatandpadhyay attended a Course on “ Heuristics Approach in Algorithms” at the extension Centre of Birla Institute of Technology, Hyderabad.
- Mr. D.K.Mondal attended a Course on "Laser Technology" at Jadavpur University, Calcutta.
- Mr. Prasanth Kumar Singh attended a training programme on “ Manufacturing Engineering" at Jadavpur University, Calcutta.

Department of Remote Sensing

Conference and Seminar

- Dhabriya S. S. presented the paper, "Depletion of life Saving Ozone Layer : A Challenge and the Survival of the Biotic Life on the Planet Earth", 21st National Geographic Congress, 2nd and 4th January, 2000 at NBSS and LUP, Nagpur.
- Dr. S. S. Dhabriya presented State of the Art Report on Remote Sensing, 1999 as Convenor of Task Force on remote Sensing constituted by the National Association of Geographers, India at NBSS and LUP, Nagpur in the 21st National Geographic Congress on 4th Jan. 2000. He also chaired plenary session on Application of Remote Sensing and GIS at NGC, Nagpur.

Workshop:

- Mrs Richa Sharma attended a four month training program on "Photogrammetry and Remote sensing " at IIRS, Dehradun, April-June 1999.

Department of Space Engineering and Rocketry

Conference and Seminar

- Dr. J.N. Mishra attended the AIU Symposium jointly sponsored by AIU and CSIR at Bhopal on September 20, 1999 and presented the paper "Direction of R&D work in Indian University with Reference and Birla Institute of Technology, Mesra".
- Dr. A.K. Shrivastava presented the paper, "Effect of Water Unceep Behavior of Carbon Fiber Reinforced Composite", National Conference on Agile Engineering, held at BIT, Mesra on Oct. 4 -5, 1999.
- Prof. Arnab Roy attended the National Seminar on Energy Technology for Sustainable Development, held at BIT, Mesra on Dec 17- 18, 1999 and presented a paper "A Study on Air Turbines for Wave Energy Application".
- Dr. A.K. Chatterjee attended the Seminar on Advances in Aerospace Technologies (SAAT- 2000) at Hyderabad on Jan 21-22, 2000 and presented a paper.
- Dr. T.K. Nandi attended the Seminar on Advances in Aerospace Technologies (SAAT - 2000) at Hyderabad on Jan.21 - 22, 2000 and presented a paper "Transient Heat Transfer through Cryogenic Propellant Tanks".

Research Papers, Books and Articles Published



Research Papers, Books and Articles Published or Accepted for Publication

Department of Applied Chemistry

- R.R.Jha, D.K.Jha, and Usha Jha, "Metal Complexes with 1, 2-diphenyl 2-anilimino-1 hydroxyimine ethane- Ultrascience", Int. J. of Physical Scs., Vol. 11 (3), 1999.
- B.L.Gupta and M.Verma, "Ignition and Combustion Studies of UDMH-RFNA Gelled Propellant Systems", Ind. J. Engg. and Mat. Sc., Vol.6, Feb.1999, pp.13-21.
- P.K. Srivastava, S.S. Majhi and R.P. Rastogi, "Moving Fronts of Acrylic Acid Polymerisation" Oriental. J. Chem. 15, (403), 1999.
- P.K. Srivastava, "Mosaic Structure in Phenol-Bromate-Sulphuric Acid Oscillator", Oriental. J. Chem. 16, (1), 2000.

Department of Applied Mathematics

- S.S. Sana and K. S. Chaudhury, "On a Volume Flexible Stock-Dependent Inventory Model", KJCAM, Korea.
- S.C. Prasad, "Investigation into Tribological Aspects On Forming of Sintered Performs", Proc. of 2nd International Conference on Industrial Tribology, Hyderabad, Dec. 1-4, 1999.
- S.K. Chakraborty and S.K. Samal, "The Influence of Pre-Stressed Lossy Medium on the Propagation of Elastic Waves", Prof. Intn. Conf. Manufacturing, 2000, BUET, Dhaka, Bangladesh.
- C. Thakur and Balram Singh, "Study of variably inclined MHD Flows through Porous Medium in Magnetograph Plane, Bull. Cal. Math. Sec. Vol. 92, pp. 34-44, 2000. (In press)

Department of Applied Mechanics

- R. K. Ranjan, Rajiv Ranjan, Dr. S. Kumar and Dr. S. C. Prasad, "Developments of Sintered Products: Present Status and Future Potential", National Conference on Manufacturing, I.T., B.H.U., January 2000.
- R. K. Ranjan, Rajiv Ranjan and Dr. S. Kumar, "Optimal Design of Valve Gear through Virtual Prototyping", International Conference on " CMSE' 99 " held at Jaipur, December, 1999.

- Rajiv Ranjan, Dr. S. C. Prasad and Dr. S. Kumar, "Investigation into Tribological Aspects on forming of Sintered Preforms", International Seminar On Tribology, Hyderabad, December, 1999.
- R. K. Ranjan and Rajiv Ranjan, "Design Optimization through Virtual Prototyping", National Seminar on agile Engineering, at B.I.T., Mesra, October, 1999.
- Prof. Ram Pal Singh, "Transverse Vibration of Polar Orthotropic Annular Plates", in National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium, held at B I T , Mesra, Ranchi in October 1999.
- Prof. K.R.R. Choudhary and Binay Kr. Singh, "Long Term Deflection of RC Beams (Analytic Approach) in Proceeding of National Seminar on concrete for Infra Structural Development at Roorkee in December, 1999.
- Prof. K.R.R. Choudhary and Binay Kr. Singh, "Design of Precast Ferro Cement Roofing Channels- A Cost Effective Approach" in Proceedings of National Seminar on Recent Trends in Civil Engineering Materials at Kota (Rajsthan), October, 1999.

Department of Applied Physics

- Raman Puri and P. K. Barhai, "Integrated Services Digital Network (ISDN) Technology", Journal of the Instrument Society of India , Bangalore (In Press).
- P. K. Barhai, M. K. Sinha, S. Keshri and B. Pathak, "Plasma Deposition of Metallic Thin-Film Utilizing Anodic Vacuum Arc Technique and their Characterization", in Proceedings of Conference on Challenges before Manufacturing Sector in 2000 (COMIM 2000) held at RDCIS SAIL, Ranchi, 3rd and 4th January, 2000, P-79-82.
- P. K. Barhai , M. K. Sinha, S. Keshri and B. Pathak, "Deposition of Al-Films Using Anodic Vacuum Arc Technique and their characterization", presented at the Third Conference of the International Academy of Physical Sciences held at University of Allahabad, India, 17th and 19th December, 1999, Abstracts.pp.20.
- S. Keshri and P. K. Barhai, "Analysis of Thermoelectric Power of High-Tc Samples Using Hubbto Model", presented at the Third Conference of the International Academy of Physical Sciences held at University of Allahabad, India, 17th and 19th December, Abstracts.pp.21.
- P. K. Barhai, "Plasma Technology and its Applications", in Proceedings of National Conference on Agile Engineering, held at Birla Institute of Technology, Mesra, Ranchi 4th and 5th October, 1999, pp.31.
- J. Thomas Andrews, Pratima Sen and Ravindra R. Puri, "Optical absorption spectra of a quantum dot in a microcavity", J. Phys.: Condensed Matter, 11, 6287-6300 (1999) (UK)
- J Thomas Andrews and Pratima Sen, "Absorption spectra of small semiconductor quantum dots, Supper lattice and Microstructures", 26, 171-180 (1999) (UK)

- J Thomas Andrews and Pratima Sen, "Optical nutation and free induction decay in magnetoactive Indium Antimonide", J. Nonlinear Optical Physics and Materials, 8, 431-441 (1999) (USA).
- Pranay K. Sen and J Thomas Andrews, "Pump-probe absorption spectroscopy of semiconductor quantum dots", Proc. DAE-BRNS Workshop on Thin Film Multilayers, Bhabha Atomic Research Center, Mumbai, 6th and 8th Ocandber, 1999, pp. 95-96.
- Harneet K. Gahir, Pratima Sen, J. Thomas Andrews and Ravindra R. Puri, "Effect of polarization state on squeezed state generation in GaAs", Proc. National Laser Symposium, University of Hyderabad, Hyderabad, 15th and 18th December, 1999.
- J. Thomas Andrews and Pratima Sen, "Dynamical Stark effect in small quantum dots", Proc. SPIE, Photonics West – 2000, San Jose (USA), 22nd and 28th January, 2000.
- J. Thomas Andrews and Pranay K. Sen, "Pump-probe absorption spectra of small quantum dots", Proc. SPIE, Photonics West – 2000, San Jose (USA), 22nd and 28th January, 2000.
- Rakesh Popli, "Scientific Literacy for All Citizens: Different concepts and contents", Public Understanding of Science, 8 (1999), 123-137.
- Rakesh Popli, "A Deceptively Simple Problem illustrating the concepts of dimensions" Bull IAPT, 16 (1999), 244-245.
- Rakesh Popli, "Physics Education in India: Some Unorthodox Thoughts on Curricula", Bull IAPT, 16 (1999), 261-265.
- Rakesh Popli, "Concepts and Misconcepts in Physics - I", accepted for Publication in Bull IAPT.

Department of Architecture

- N. Sengupta, "Architecture Design" ZONASA magazine.
- Manjari Chakraborty, " Architecture and Planning-Perspective 2050-A Non-Conformist View" National Seminar on the Past, Present and Future of Architecture at Delhi on March, 1999
- Manjari Chakraborty, " Energy Conservation Pilot paper on the Andtalistic Approach" National Seminar on Energy Technologies for Sustainable Development" Organised by Mechanical Engg. Department of B.I.T., Mesra, Ranchi, on 17th December 1999.
- Manjari Chakraborty, "Architecture - The Millennium Mandate: A totalistic Approach", Golden Jubilee Celebration Com Memorative Souvenir of the Department of Architecture , town and Regional, Planning , B.E. College Shibpur December, 1999.

Department of Civil Engineering

- Binay Kumar Singh, "An Experimental Study of residual compressive strength after fatigue damage on Glass/Epoxy Composite", Journal of the Institution of Engineers (India) Mechanical Division vol.80,March 2000,p-158.

- Binay Kumar Singh, "Design of Pre-Cast Ferrocement Roofing Channels- A cost effective approach" Proceeding of the National Seminar on- "Recent trends in Civil Engg. At REC, Kota, Rajasthan on 15th and 16th December 1999.
- Gopal Pathak, "Trace Metals in Soil with special reference and Coal Mining Environment" at the 15th International Conference of contaminated soils and water, Amherst, U.S.A, on 18th and 21st October, 1999.
- Gopal Pathak, "Sustainable Development: A challenge" in All India Seminar on Sustainable Development-clean and green productivity held at Patna on 13th and 14th February, 1999.
- Gopal Pathak participated in the "World Class Congress on Sustainable Development" held at Calcutta on 20th and 23rd January, 2000.
- Gopal Pathak, "Air Pollution: Characteristics and Perspective" in the National Seminar on "Environment and Development", Pune on 25th and 26th March, 2000.
- Gopal Pathak, "Anaerobic Biological Treatment of Industrial Wastes: An Overview" in International Seminar on combined wastewater treatment, Hyderabad on 23rd and 24th March, 2000.
- C. Thakur and B.Singh, "Study of variably inclined MHD Flows through porous Media in Magnetograph plane", Published in Bulletin of the Calcutta Mathematical Society.

Department of Electronics and Communication

- M.D. Khalid, V.V.P. Swamy and M. Puri, "Seamless Communication Network and Technology system in CCL Ranchi" Vol.29, no2, pp108-114, 1999, Journal of Instrument Society of India.
- W. Gupta, N. Gupta and L. Shafal "Grooved Microstrip Lines" accepted in IEEE Transactions on Microwave Theory and Techniques.

Department of Electrical and Electronics

- P. K. Sadhu and B. M. Karan "Energy Conversion by Resonant High Frequency Inverter for Induction heating" published on National Seminar NSE-99, on 17th and 18th December 1999, Organised by Department of Mechanical Engineering, B.I.T. Mesra, Ranchi
- B. M. Karan and P.K. Upadhyay, Application of Neural Network in EEG Analysis-A Review. Publication of Mathematics in Social and Industrial Sectors in Next Millennium, on 26th and 27th October 1999. Organised by Department of Applied Mathematics, B.I.T. Mesra, Ranchi.

- P. R. Thakura, "Machine Electronics for Mining" presented and Published in proceeding in National Seminar on Mining Machinery Present Status and Future Development", on 26th and 27th November 1999 at I.S.M. Dhanbad.
- P. K. Sadhu, R.N. Chakraborty and B. M. Karan, "Design of resonant high frequency inverter for induction heating" published in W. Bengal State Science and Technology Congress from 28th February and 1st March 2000, Organised by Jadavpur University, Calcutta.

Department of Computer Science and Engineering

- Mahanti. P.K. and M. Bhattacharya "Where and find our best object", Comsomath, Vol-2, No.1, pp36-38, 1999.
- Mahanti. P.K., et.al "A Survey on Interpretation and Design of Medical Expert System" accepted for presentation in the International Conference on artificial Intelligence (ICAI-99), Durban, South Africa, from 24th and 26th September, 1999.
- Mahanti. P.K., et.al "Caching of Multimedia Objects: A Review", published Int. J. Information and computing Science, Vol-2, No2, December 1999.
- Mahanti. P.K., et.al "Y2K problem and Solution", Comsomath, Vol-2, No.2, September, 1999.
- Mahanti. P.K., "Software Reliability Modeling: A Review", J. Int. System Analysis Modelling Simulation, Vol-00, pp, 1-12, Gallery Proof received, December, 1999.
- Mahanti. P.K., et.al "Push-Pull Model in WWW: A Review", presented International Conference Computer Modelling Simulation and Communication (CMSC-99) at Jaipur, from 1st December and 3rd December, 1999.
- Mahanti. P.K., et.al "An Algorithm for in Memory Reversal of a One Way Linked List" presented International Conference Computer Modelling Simulation and Communication (CMSC-99) at Jaipur, from 1st December and 3rd December, 1999.
- Mahanti. P.K., "Object Oriented Programming in C++" (textbook), published by khanna Publication Ltd., New Delhi, January 2000.
- Sahoo. L., "Some Higher Order Multistep ODE Solvers, presented at Publication of Mathematics in Social and Industrial Sectors in Next Millennium, on 26th October and 27th October 1999. Organised by Department of Applied Mathematics, B.I.T. Mesra, Ranchi.
- Verma K. K., and Sahoo. G, "On the Design of Runge-Kutta – Nystrom Formula Pairs for solving $y'=f(x,y)$, $y(x_0)=y_0$ $y'(x_0)=y'(o)$ ", presented at National Seminar on AMSIS in Next Millennium, held on 26-27, October, 1999.

- Sahoo, L., "Formal Data Manipulation in Fuzzy Relational Database Management System", Int. Conf. On Simulation and Modelling', Jaipur, December 1-3, 1999.
- Jana, P. K., "Polynomial Interpolation on Mesh of Trees", and appear in ASME Journal.
- Jana, P. K., et, al., "Mapping Algorithm on Augmented Tree (AT)", in Proc. Of 7th Int. Conference on Advanced Computing and Comm. (ADCOM '99), Roorkee, India, pp-172-176, December 20-22, 1999.
- Jana, P. K., et, al., "Efficient Parallel Prefix Computation and List Ranking on Multi Mesh topology", in Proc. Of 7th Int. Conference on Advanced Computing and Comm. (ADCOM '99), Roorkee, India, pp-73-77, December 20-22, 1999.
- Jana, P. K., "Systolic Design for Generating Sturm Sequence for Solving Eigen Value Problem", accepted in Int. AMSE Conference on Computer Modelling Simulation and Comm. (CMSC '99), Jaipur, December, 1999.
- Jana, P. K., "Finding Polynomial Zeros on a Multi Mesh of Tree (MMT)", in Proc. Of the 2nd Int. Conference on Information Technology (CIIT'99), Bhubneshwar, pp. 202-203, Dec. 20-22, 1999.
- Jana, P. K., "Parallel Algorithm for Statistical Forecasting on Illiac Network", presented at National Seminar on Application of Math's in Social and Industrial Sectors in Next Millennium, B.I.T., Mesra, October 26-27, 1999.
- Jana, P. K., et, al., "Efficient Parallel Algorithms for Finding Polynomial Zeros", in Recent Trend in Advanced Computing, P. K. Sinha and C. R. Das (Eds), New Delhi, : Tata McGraw Hill, pp. 189-196, 1999.

Department of Mechanical Engineering

- Kumar Arvind presented a paper entitled, "Agility In Automotive Systems " in the National Seminar on "Agile Engineering" Organised by Production Engg. Department of B.I.T., Mesra, Ranchi, on 4th October. 1999.
- Kumar Arvind presented a paper entitled, "Hydrogen: tomorrows Limitless Fuel" approved for paper meeting and its publication in the Journal of Institution of Engineers (I).
- Kumar Arvind presented two technical papers entitled, "Environment And Sustainable Development" and 'Uprating Of Large Hydel Power Plant For Sustainable Development" in IVth Maharashtra-Goa ISTE convention and National Seminar on 23rd November, 1999, at B.N.College of Engg., Pusad (M.S.).

- Kumar Arvind presented paper entitled, "Using Hydrojets for Eco-friendly Coal Mining" published in the proceeding of the National Seminar on "Mining Machinery" Organised by Indian School of Mines, Dhanbad, on 27th Nov. 1999.
- Kumar Arvind presented a paper entitled, "Biological Production of Hydrogen: the Fuel of the Future" in the National Seminar on "Energy Technologies for Sustainable Development" Organised by Mechanical Engg. Department of B.I.T., Mesra, Ranchi, on 17th December 1999.
- Kumar Arvind a paper entitled, "Hydrogen: A Renewable Energy Source of the Millennium" accepted for presentation in the National Seminar and Mechanical Engg. Convention of the Institution of Engineers (I), Roorkee University, Roorkee, and be held in Sept. 2000.
- Kumar Arvind presented paper entitled, "Mechatronics in Hydrojetting Application for Futuristic Mining" has been accepted for the presentation in the National Seminar on "MECHATRONICS" Organised by Production Engg. Department of B.I.T., Mesra, Ranchi and Institution of Engineers (I), Ranchi.
- Singh K.P. presented a paper entitled, "On Power Scenario in India and Role of Gas Turbine" in NSE held on 17th and 18th December 1999 in Mechanical Engineering Department of B.I.T., Mesra, Ranchi.
- Giri B.N. presented a paper entitled, "Dessiccant Air-Conditioning – An Eco-Friendly Energy Conserving Techniques" in the National Seminar on "Energy Technologies for Sustainable Development" Organised by Mechanical Engg. Department of B.I.T., Mesra, Ranchi, on 17th December 1999.
- Roy A.K. presented the paper entitled, "The Influence of an Unequal Axial Clearance Between Impeller and A Casing on Centrifugal Fan Parameters: A Case Study" in National Seminar on Energy Technologies for Sustainable Development held at Birla Institute of Technology, Mesra, Ranchi from 17th and 18th December, 1999.
- Sharma R.P. presented paper in International Seminar on Computer Modelling Simulation and Communication (CMSC'99) held at Jaipur entitled "Modelling and Simulation of Combustion Chamber of Petrol Engine".
- Sharma R.P. submitted a paper in National Seminar on Agile Engineering at Mesra, 1999 entitled "Selection, Use and Evaluation of Software Language".
- Kumar Arvind presented a paper in National Seminar on "Application of Mathematics in Industrial and Social Sectors in Next Millennium", organized by Department of Applied Mathematics. The topic was "Simulation Modelling of Flexible Manufacturing Systems".
- Das Randip presented the paper entitled, "Reduction of NO_x in Gasoline Engine Exhaust over Copper and Nickel exchanged X-zeolite catalysts" in the Sixteenth National Conference on I.C. Engines and combustion" held by Mechanical Engg. Dept. of Jadavpur University, Calcutta on January 20-22, 2000 .

- Das Randip Published a paper entitled, "Catalytic Control of Automotive NO_x: A Review" in International Journal of Energy Research, Vol. 23, pp. 351-369, 1999.
- Das Randip Published a paper entitled, "Theoretical and Experimental Analysis of Iron-Exchanged X-zeolite catalyst for SI Engine Emission Control", Experimental Thermal and Fluid Science, Vol. 19, No. 4, pp. 214-222, 1999.
- Prabhakar B.K. presented a paper entitled, "Uprating of Large Hydel Power Plant for Sustainable Development" held at B.N. College of Engineering, Pusad, on 23rd and 24th November, 1999.

Department of Production Engineering

- Surender Kumar, "Transfer of Agile Manufacturing Technology and Rural , Small and Medium Scale Industrial" Proceedings, International Conference on Manufacturing , Feb. 2000, Dhaka, PP 763-772
- S. Chattopadhyay, and A.K.Basu, "Facility System Analysis in the Agile Engineering of the Environment " Proceedings National Conference on Agile Engineering, October 1999.
- S.Kumar, "Mechatronic Aspects of Manufacturing Systems", Proceeding National Seminar on "Mechatronics in Manufacturing systems", 14th National Convention of Production Engineers, IE(I).
- Aditya Shah, Alok Varma, and S.Chattopadhyay, "Smart Layer Approach for Built Diagnostic", Proceedings National Conference of on Agile Engineering, October 1999.
- S. Chattopdhyay and. Alok Varma, "Design of a Mechatronic Facandry - A case study on a conveyer Belt Manufacturing unit", Proceedings, National Seminar on "Mechatronics in Manufacturing Systems", 14th National Convention of Production Engineers, IE (I).
- Somnath Chattopadhyay and A.K.Basu," Facility System Analysis of a Conveyor Belt Manufacturing Unit", Proceedings National Seminar on Application of Mathematics in Social and Industrial Sectors in Next Millennium, October 1999.
- C. Pandey, "Agile Engineering Concept and Philosophy", Proceedings National Conference of on Agile Engineering, October 1999.
- S.K.Jha, and S.Kumar, "Robotics and Manufacturing Automation", Proceedings, National Conference on "Manufacturing challenges in 21strategy Century" January 2000, PP S –II B3.1 – 3.12.
- Sudhir Kumar, "Environment Scanning and Business Development", Proceedings National Conference of on Agile Engineering, October 1999.

- B.K. Singh, "Performance Modeling of a Mechatronics Equipment", Proceeding National Seminar on "Mechatronics in Manufacturing systems", 14th National Convention if Production Engineers, IE (I).
- S. Kumar and K.S. Bhat, "Learning in Agile Organisation", Proceedings National Conference of on Agile Engineering, October 1999.
- C. Pandey, "Condition Monitoring and Mechatronics", Proceeding National Seminar on "Mechatronics in Manufacturing Systems", 14th National Convention if Production Engineers, IE (I).
- Alok Varma and Vinay Sharma, "Rapid Prototyping – An Agile Technology for Product Development", Proceedings National Conference of on Agile Engineering, October 1999.
- Alok Verma, and Somnath Chatandpadhyay, "Mechatronics For Intelligent Manufacturing", Proceeding National Seminar on "Mechatronics in Manufacturing systems", 14th National Convention if Production Engineers, IE (I).
- P. Basak and S. Kumar, "Accelerating Innovation: Improving the process of Product Development through holistic Approach", Proceedings National Conference on Agile Engineering, October 1999.
- Surender Kumar, " Agile Manufacturing Technology for Rural, Small and medium Scale Industries", Proceedings, National Conference on "Manufacturing challenges in 21st Century" January 2000, PP S –I A1.1 – 1.10.
- Arbind Kumar, Vinay Sharma, and Surender Kumar, "Automation in Hydro Jetting Technology for Coal Mining", Proceedings, National Seminar on "Mechatronics in Manufacturing systems", 14th National Convention if Production Engineers, IE (I).
- S. K. Mukherjee and S. Kumar, "Logistics in Agile Manufacturing Environment", Proceedings National Conference on Agile Engineering, October 1999.
- Hans Raj Misra, S. Kumar and S. K. Mukherjee, "Manufacturing in the Next Millennium and role of Ancillary unit Development – a Pathfinder in Indian Automobile Sector", Proceedings, National Conference on "Manufacturing challenges in 21strategy Century" January 2000, PP S –I B3.1 – 3.9.
- Alok Verma, and S. Chattopadhyaya, " Eco-Friendly Manufacturing through Green Technologies", Proceeding International Conference on Manufacturing , Feb. 2000, Dhaka, PP 684-690
- R. K. Ranjan, Rajiv Ranjan, S. C. Prasad, and S. Kumar, " Development of Sintered Products: present status and future potential", Proceedings, National Conference on "Manufacturing challenges in 21strategy Century" January 2000, PP S –IV A3.1 – 3.18.
- P. K. Singh and Alok Verma, "Concepts and Philosophy", Proceedings of National Seminar on "Mechatronics in Manufacturing systems", 14th National Convention of Production Engineers, IE(I).
- Surender Kumar, A. K. Jha, and M. Agarawal, "High Speed Forging of Hollow Metal Powder Preforms", IE(I), Journal-production, Vol. 80,1999 PP 8-15.

- S. K. Mukherjee, and Surender Kumar, "User friendly supply chain management – A tool for Improving Effectiveness of Advanced Manufacturing Systems", Proc. of 4th Indo-Japan joint Seminar on "Advanced Manufacturing System", Feb.2000, PP 37-46.
- Surender Kumar and S. K. Mukherjee, "Recent Developments as an Aid and Design and Develop Wire Manufacturing Machines", Proc. of Conference on "Challenges before Manufacturing Sector in 2000", PP 57-67.
- Dilip Mondal, "Replacement of Grinding by Hard Turning by means of Mechatronics devices", Proceedings, National Seminar on "Mechatronics in Manufacturing systems", 14th National Convention of Production Engineers, IE (I).

Department of Pharmaceutical Sciences

- Basu, S. P., Prasad, D.N., Srivastava, A.K., "Antispasmodic activity of the crude and purified oil of *Mesua ferrea* Ancient Science of Life", April, 1999.
- Basu, S. P., "Nature is God" - An invited popular talk in the U.G.C. Sponsored National Seminar on Medicinal Plant Diversity of Chotanagpur and Human Welfare -held in Ranchi, May, 1999.
- Basu, S. P., Sindhe, Anil Kumar, Shiva A presented the paper, "Application of Mathematical Models in Drug Research", paper presented at the National Seminar on Application of Mathematics in Social and Industrial Sector in Next Millennium", at B.I.T., Mesra, October 26-27, 1999.
- Basu, S. P., Sindhe, A., Mahli, S.S. and Singh R.C.P. presented the paper, "Anticonvulsant Activity of 5-[1',3' - Dione - 3'-Phenyl) - Propyl-4-Methoxy Benzofuran Analogs" - paper presented at the American Association of Pharmaceutical Scientists Annual Meeting, New Orleans, LA, Nov.14-18, 1999.
- Basu, S. P., Prasad, D.N., and Srivastava, A. K., "Antibacterial activity of Mesuol" - paper presented in the 51st IPCA at Indore, Dec. 18-20, 1999.
- Singh, B.K., Sasmal, D. and Mukherjee. S.K., "Evaluation of Physical Working Capacity for work allocation" - accepted for publication in the Journal of the Institute of Engineers.
- Sasmal, D., and Lakshmi, G.S. presented the paper, "Hypoglycemic Effects of Mammordicacharantiain combination with Zinc and Ascorbic Acid on Alloxan Induced Diabetic Rabbits" - presented in the International Congress of Frontiers in Pharmacology and Therapeutics. In 21st century held in New Delhi, Dec. 1-4, 1999.
- Sasmal, D. and Lakshmi, G.S. presented the paper, "Hypoglycemic Effects of Nyctanthes arbortristis in combination with Zinc and Ascorbic Acid on Alloxan induced Diabetes Rabbits" - in the 51st Indian Pharmaceutical Congress held in Indore, Dec. 18-20, 1999.

- Tiwary, A.K. and Panpalia, G.M., "Influence of Crystal Habit on Trimethoprim Suspension Formulation" - Pharm. Res.,16(2), 261-265 (1999).
- Sinha, B.N., Sasmal, D. and Basu, S.P., "Biochemical and Hematological Evaluations of Bryonia epigaea tubers" - Ancient Science of Life, January, 2000.
- Verma, P.R.P. and Iyer, Sunil S., "Controlled Transdermal Drug Delivery of Propranolol Using HPMC Matrices : Design, In-vitro and In-vivo Evaluations", Journal of Pharmacy and Pharmacology (U.K.) - Accepted.
- Verma, P.R.P. and Iyer, Sunil S., "Transdermal Delivery of Propranolol using Mixed Grades of Eudraget on Design, in-vitro and in-vivo Evaluation", Drug Dev. and Ind. Pharmacy (USA) - Accepted.
- Verma, P.R.P., D. Das and Gurule, Sanjay, "Formulation and Evaluation of Transdermal Films of Ephedrine Hydrochloride" 51st Indian Pharmaceutical Congress, Indore, December, 1999.
- Verma, P.R.P., Jha, Lalit Lata and Sharan, Neha, "In-vitro Release Profile of Flurbiprofen From various ointment bases through cellulose Acetate Films", 51st Indian Pharmaceutical Congress Indore in December, 1999.
- Verma, P.R.P., Murthy, T.E.G.K., Gurule, Sanjay and Kotwani, Pankaj, "Computation of Bioavailability Parameters and Statistical Parameters", National Seminar on Application of Mathematics In Social and Industrial Sector in Next Millennium", Birla Institute of Technology, Mesra, October 1999. Accepted for publication in the Proceedings by the Narosa Publishing House, New Delhi.
- Verma, P.R.P., Ram Kumar P, Gurule, Sanjay and Kotwani Pankaj, " Computer Simulation for In-vitro drug dissolution data and its Kinetic interpretation", National Seminar on Application of Mathematics in Social and Industrial Sector in Next Millenium, Birla Institute of Technology, Mesra, October, 1999 - Accepted for publication in the Proceedings by the Narosa Publishing House, New Delhi.
- Jha, S., "Quality Control and Standardization of Herbal Drugs" - (An invited lecture), National Seminar on Medicinal Plants Diversity, Ranchi, May 1999.
- Jha, S., Pharmacognosy presented the paper, "Phytochemistry and Pharmacology (Wound healing) Studies of *Argyreia nervosa* (Roxb.) Sweet" - at International Seminar at Jamnagar, January, 2000.
- Rajamanikmundan, B., Mazumder, Abhijit and Gunasekaran, P., "Production of Penicillin A cylase from Soil Micro Organism",- in the National Conference on Biotechnology, Hitherto and Henceforth, at the American College, Madurai, December 28-30, 1999.
- Chandra, R and Basu, S.P. "Antifungal Activity of Pangamol", Communicated for Publication in International journal.

- Verma, P.R.P. and Razdan, B.K. "Studies on Leucaena leucocephala seed gum III Emulsifying Properties" - communicated.
- Verma, P.R.P. and Razdan B.K. "Evaluation of Leucaena leucocephala seed gum in Tabletting I. Binding Properties in Granules and Tablets" - communicated.
- Verma, P R P. and Razdan B.K., "Evaluation of Leucaena leucocephala seed Gum in Tabletting II. Disintegrant Properties - communicated. Verma, P.R.P. and Razdan, B.K., "Studies on Leucaena leucocephala Seed Gum I. Preformulation, and suspending properties", communicated.
- Verma, P.R.P. and Razdan, B.K., "Studies on Leucaena leucocephala Seed Gum II Rheological Properties", - communicated.

Department of Remote Sensing

- Srivastava, A., Tripathy, N.K and Gokhale, K.V.G.K. (1999) "Basement topography and Aquifer Geometry around Ken Graben", International Journal of Remote Sensing, vol.20, no.11, pp.2295-2305.
- Srivastava, A., and Singh, R. P.(1999) "Surface Manifestation over a Subsurface Ridge", International Journal of Remote Sensing, vol.20, no.18, pp.3461-3460

Department of Space and Rocketry

- A. Roy, and S. Sarkar, "Computer Aided Design of a Mixed Flow Pump", Proceedings of the 17th Canadian Congress of Applied Mechanics, Mc Master University, Canada, June 5-7, 1999.
- A.K. Shrivastava and R.K. Singh, " Effect of Aspect Ratio on Buckling of Composite Plates", J. of Composite Science and Technology, Vol 59, 1999, pp.439 - 445.
- P.K.Dash, H.K. Mohanty, and A.K. Chatterjee, "Environmental Effect on Flexural Strength of Carbon / Epoxy Composite- An Experimental Approach", J. of I.E. (I) (Aerospace Div.) Vol.80. No.2, 1999, pp. 25-31.
- A. Roy, "Study of a Self Rectifying Air Turbine in Oscillatory Flow", Proceedings of the 26th National Conference on Fluid Mechanics and Fluid Power, IIT Kharagpur, Dec.15-17, 1999.

- A. Roy, "Wave Energy- A Powerful tool for Sustainable Development", Proceeding of the National Seminar on Energy Technologies for Sustainable Developments, BIT Mesra, Ranchi, Dec.17- 18, 1999.
- A. Roy, " A Theoretical Study of a Modified Wells Turbine with Variable Pitch Blades", Proceedings of the 44th Congress of Indian Society of Theoretical and Applied Mechanics, REC Warangal, Dec.22- 25, 1999.
- A. K. Chatterjee and Rajeev Sharma, " Pressure Dependence of Burning Rate of PVC-AP Composite Solid Propellants", Proceedings of Seminar on Advances in Aerospace Technologies, held at RCI, Hyderabad, January, 21- 22, 2000 .
- T.K. Nandi and A. K. Chatterjee, " Transient Heat Transfer through Cryogenic Rocket Propellant- A Numerical Approach", Proceedings Seminar on Advances in Aerospace Technologies, held at RCI, Hyderabad, January, 21 - 22, 2000.
- P.K. Dash, B.K. Singh, and A. Parashar, "An Experimental Study on Damage Development and Residual Strength of Glass/Epoxy Composite after Cyclic Loading", J. of I.E. (Mech. . Div.) March 2000.
- P.K. Dash, Satish Kumar and A. K. Chatterjee, "Effect of Environment and 'U' Notch in Tensile Strength of Carbon/ Epoxy Composite - A Design Approach", J. of I.E. (I) (Aerospace Div.), Jan., 2000 (Communicated).
- P.K. Dash, and A. K. Shrivastava, " Relationship between Tensile and Flexural Strength of Carbon/ Epoxy Composite", J. of Material Science, Jan. 2000 (Communicated).



ACTIVITIES RELATED TO Ph. D

Following Ph. D Scholars have qualified for the Awarded of the Ph. D. Degree of the Institute during the year 1999-2000 (upto 31st March 2000):

S.NO.	Name of Scholars	Title of Thesis
1.	Sri 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.
2.	Ms. Deepa Kulkarni	Formulation and Evaluation of Oral sustained Release Drug Delivery Systems using Tamarind Seed Polyse.
3.	Sri M. Adiraj	Synthesis and use of Methyl Phosphonate containing Oligonucleotides for the study of B-Z DNA Transition.
4.	Sri B.N.Sinha	Phytochemical and Pharmacological Studies on some Plants used in Indian System of Medicine.
5.	Sri Deepak M.	Standardization of Herbal Drugs.
6.	Mrs. Sunita Kesri	Study of Oxide Superconductors with High Transition Temperatures.

Following staff members of the Institute Submitted the Thesis for Award of Ph. D. Degree during the year 1999-2000

S.NO.	Name of Scholars	Title of Thesis
1.	Sri Arbind Kumar	Investigation on Metal Hydrides as carried to run the future vehicle engine on Hydrogen.
2.	Sri P. K. Dash	Experimental Studies on Fatigue of Glass and carbon Fibre reinforced Composites under adverse environmental Conditions.

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|----|----------------|--|
| 3. | Sri S.K.Ghorai | Study of nonlinear response of certain holographic recording materials to nonsinusoidal intensity distribution:Nonlinear Optics. |
| 4. | Sri B.K. Singh | Some ergonomic Considerations in work Design. |

Following 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 Scholars	Title of Thesis
1.	Sri M. K. Sinha	Development and characterization of metallic and non-metallic thin films using anodic vacuum arc technique.
2.	Sri Ajay Srivastava	Effects of Subsurface Features in the Evolution Of Gangetic Plain: An Integrated approach using Remote Sensing and GIS
3.	Sri Hari Shankar Gupta	Change Detection in the Forest Cover and Tree Density using Remote Sensing Technology- A Case Study of Ranchi District
4.	Mrs. Richa Sharma	Detection of change in the Forest Cover of Chhota Nagpur Plateau using Multi-date Satellite Imagery.
5.	Sri Braja Bihari Panda	Compatibility Studies on Solid State Formulation Of antihypertensive agents(Drugs) through DSC.
6.	Sri Ranjan Rajesh Kumar	Formability Criteria of Sintered Preform.
7.	Sri Hans Raj Misra	Manufacturing Strategies in the Next Millennium and their Impacts on HRD effects of Ancillary Units".
8.	Sri P. K. Chatterjee	Engineering Consultancy Marketing Services in the Domain of Industrial Marketing- a case Study of MECON Ltd.

9.	Ms. Rupa Mazumdar	Studies on Pharmaceutical Compounds Produced by Fermentation on Micro-Organisms from Soil.
10.	Sri Utpal Baul	Study of the Mutuality of Influences Between Industrial Buying Behaviour and Marketing & Strategy.
11.	Sri Arbind Kumar	Stress Induced Magnetic and Electromagnetic Effects in Metals.
12.	Sri Raj Shekhar Prasad	Effects of Weathering of Metasedimentary and Granitic Rocks and Genesis of Economic Minerals in the Area, West of Bishunpur, Bihar.
13.	Sri A. K. Thakur	Oxidation and Wear Behaviour of High Strength Low Alloy Steels.
14.	Sri Sumit Dutta	Developing a Risk Management Matrix for Effective Project Planning.
15.	Sri B. Mallik	Studies on Some Characteristics of AMMC & Applicability in Manufacturing.
16.	Sri Vinay Sharma	Hydrojet System for Mining Under Indian Environment".
17.	Sri Somnath Chattopadhyay	Transfer of Agile Manufacturing Technology for Rural Medium and Small Scale Industries (With Special Reference to Indian Manufacturing Environment.
18.	Sri Bhaskar Karn	Fuzzy Information Retrieval.

Besides the above there are the following Scholars are continuing the work for Ph.D. Degree who were registered in the previous year(s) :

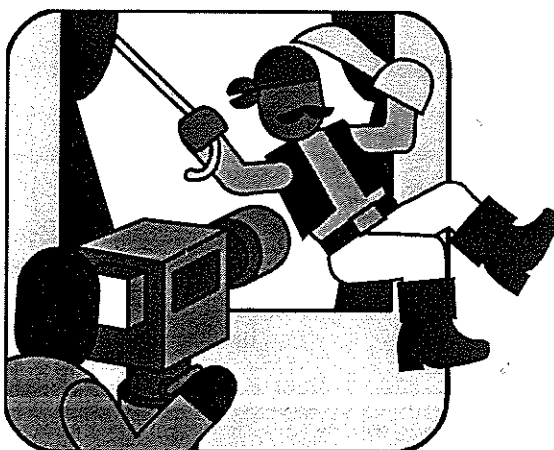
S.NO.	Name of Scholars	Title of Thesis
1.	Sri Rampal Singh	Vibration of Axisymmetric annular polar orthotropic and rectangular plates
2.	Sri K. S. Bhat	Process of Learning for Turnaround in Productivity -Strategy Formulation and its implementation.

3. Ms. S. M. Verma Synthesis and Pharmacology activities of some new analogous of azabicycle nonanes.
4. Sri Ramesh Chandra Studies on L-Asparaginase Production.
5. Sri B. K. Singh Experimental Studies on Buckling Behavior of Fibre Composite Stiffened Plate.
6. Sri I. B. Singh Role of Development Agencies in the Socio-Economic Development of tribes of Chhotanagpur Region..
7. Sri K. Niranjana A Critical Study of inventory management in PSU's : a case study of HEC.
8. Ms. Debjani Basak Metallic Surface Coating Using Anodic Vacuum Arc.
9. Sri K. N. Jha Science in the Periphery- A Scientometric Analysis of Science in the Southern African Countries.
10. Sri Gautam Kumar Saha Transient Fault Control by Software.
11. Sri Manoranjan Pandey Catalytic Influence on Thermal Degradation and Burn Rate of Composite Solid Propellants and their Ingredients.
12. Sri Balram Singh A Theoretical Study On Magneto-Fluid Dynamics Flow
13. Sri S. A. Siddiqui Technological Aspects for Improving Productivity of a Forge Industry
14. Sri Gopal Krishna Artificial Neural Networks Applied to Rolling Mills.
15. Sri K. S. Madanpuri Application of Fuzzy and Expert Systems to Telecommunication.
16. Sri D. N. Prasad Studies on Some Indegenour Speed of For Possible Utilization in Pharmacy.

17.	Sri S. Samanta	Synthesis and Studies on Piperidine Analogs
18.	Sri Arun Kumar	Fatigue Behaviour of Adhesive Lap Joint
19.	Ms. S. V. Subhashini	Numerical Study of Unsteady Compressible Boundary Layer Flows.
20.	Sri Rajendra Prasad	Quality System for Guided Weapon System.
21.	Sri B. D. Choubey	Physio-Chemical Study of Coordinated Malonic Acid and Similar Compounds.
22.	Sri K. R. Roy Choudhary	Buckling of Laminated Composites Plates.
23.	Sri Amit Jana	Theoretical Modelling of Heterounction Field Effect Transistor for High Speed and Opto-Electronics Applications.
24.	Sri S. K. Datta	Some Theoretical Studies on Optically Controlled Microwave Semi Conductor Devices.
25.	Sri S. N. Thakur	Castability, Forge-ability, Machinability and Fracture behavior of Aluminium Silicon Alloys.
26.	Sri Pawan Kumar Rai	Solid waste management in steel plants for improvement Environment.
27.	Sri Prasant Kr. Mukherjee	Quadratic Sruds and method of Approximating them in Ancient and Mediaeval Mathematics.
28.	Ms. Sandhya Rani	Study of some chemical aspects of stres induced Magnetic & Electromagnetic Effects in Transition Metals and Intemetallic compounds.
29.	Sri Arun Kumar	Synthesis and Pharmacological studies of Indian Analogs.
30.	Sri T.R.Ranganath	Studies on Honey Comb Stabilised Saltless Solar Pond.

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| 31. | Sri U.S.Prasad | Stress induced Magnetic and E.M.effects in Metals |
| 32. | Sri Girish Pathak | Tribological Investigations in Mechanical Processing. |
| 33. | Sri K.K.Verma | On the Design of Some Computer Algorithms to Solve Second order ordinary Differential equations. |
| 34. | Sri G.Jagadeesh | Study of Solar Pumped Lasers for Space Applications. |
| 35. | Sri N.K.Singh | Pharmacological Studies of pseudopelletierine Analogs. |
| 36. | Ms. Papiya Mitra Mazumdar | Pharmacological & Toxicological Studies of Some Mycotoxins in Animals. |
| 37. | Ms. Subrata Ghosh | Studies Exploring the Utility of DSC as an Instantaneous Predictor for Drug Excipited Compatibility. |
| 38. | Sri Durgesh Pant | Complete study of Reconfigurable computer systems. |
| 39. | Ms. Swastika Ganguly | Syntheses and study of newer Imidazole Analogs. |
| 40. | Sri P. R. P. Verma | Studies on Pharmaceutical Uses of Some Seed Gums. |
| 41. | Sri N.K.Singh | Pharmacological Studies of udopelletierine Analogs. |

Student Activities



STUDENT ACTIVITIES

Various cultural activities of the students of the Institute are traditionally organised by different students clubs and societies. At present there are 21 such societies and clubs in the Institute. A senior Professor as its in-charge supervises each one. 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 and societies in the year 1999-2000, the following is a list of the various clubs/society in B.I.T., Mesra which offer students in opportunity to channelise their creative energy:

- BITOTSAV*** The annual cultural festival of the Institute-for the year 1999-2000 was celebrated from 5th to 7th of October 1999. Sixty cultural events in all brought the best in the BITians in fields ranging from debating, quizzing, fine arts, music, writing etc. the most appealing part of this festival was the gyrating DANCE NITE and melodius MUSIC NITE.
- 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.
- AudioVideo Education Club*** Let the roller coaster take you on its ride with help from Bollywood every Sunday in B.I.T. itself. "For the spice of life". The society organised Hallowood & Antyakshari in BITOTSAV-2000.
- BITIN'S Nature Club*** "Engulf me in you, thy nature". Bathing the soul with the spirit of nature. The society organised Nature Password & Nature Quiz in BITOTSAV-2000.
- Bhartiya Sahitya Parishad*** "We bring out the best of literacy talents and make you a part of the rich heritage that we are all proud of". The society organising Rachnatmak Lekhan, Vad-Vivad, Hindi Jam & Trahimam
- Dance Club*** "We keep you on your toes. Come with us and dance your way to success". Music club with the help of ROTRACT club arranged a "Music night" during BITOTSAV -2000. 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, Eastern and Western dance, and Solo-Bell-Melled. All events were performed at OAT.
- Dramatics Society*** Life's but walking shadows, a poor player that struts and frets his hour upon the stage, and then is heard no more, it's a tale. "Drama is the image of life". The society organising Skit, Monoacting, Improvisation and memorable plays in BITOTSAV-2000

Engineering Society

Runs an entire plethora of activities from mock G.D.s mock interview, specific updates and I.Q. tests. The society organised different kinds of events that were interesting and knowledgeable. The events conducted were Vateez Quiz, Tech. G.D. & Engg. Recycled.

Fine Arts Society

A place where a medley of sculpture and fine arts amalgamate, giving a new and creative dimensions to the various pursuits art. "We splash colors into your life". FAS organised FAS Rangoli, Painting, Mehndi, AD Designing, and Sketching events during BITOTSAV-2000 and put an exhibition at BIT, Mesra.

High lander Adventure Club

"If you have the spark of an adventurous spirit, come join us in the laughter brotherhood and enthusiasm, which binds us". "Sky is the limit". This year HAC of B.I.T arranged a tracking programme to Bara Bhangal (in Kangara Valley-Himachal Pradesh) with a team. Comprising of B.I.T students under the leadership of its Professor-in charge Shri Rama Shanker Singh. They trekked a height of about 14,500 feet. Besides this several local cycle expeditions were also arranged successfully by this club. Para gliding, Para-sailing and Rock-Climbing course arrangement are in their future agenda. Discovery of India, Bhool-Bhulaiya arranged successfully by HAC.

H.A.M

Encoding the analog pulses you generate and the digital demons of the atom with Morse codes, transceivers and Department of Telecommunication, Govt. of India. "One world, one language". The society organised Ditrcaqdah & Acoustek successfully by H.A.M.

***Indian Association for College
Going Scientists***

A forum to express the scientific faculties of the body and the soul- helping fresher's move seamlessly from simple computer systems to computers networks. This association arranging Technical Debate, Blue Chip Quiz and Reading B/W the lines during BITOTSAV - 2000.

I.E.E.E.

Split with the unified spirit of science into a gamut of scientific expressions along with weekly seminars and paper presentations. "Stay current with today's technology". This association arranging Flip-Flop & Wrong Theory Right Proof.

***Institution of Engineers
(Students Chapter)***

We give you the opportunity to bring out your technical abilities. This society is registered. This society is registered with The Institution of Engineers, (India) in various disciplines of engineering curriculum.

Leo Club

The true Leo has proved to be organized but not obsessed; talented, but not pompous; loyal, but maintaining at all times a wicked sense of humour. Therefore, the unofficial quote; "No motto, all auto". The society organized Controversy successfully by Leo Club.

Music Club

We capture all and make VIPs sway but ... Hey! You don't really have to be a master to join the fry. "The distinct sound of thunder". Music club with the help of ROTRACT club arranged a "Music night" during BITOTSAV - 2000. Instrumental, both Eastern and Western Music songs were presented.

News and Publication Society

They say, "See no evil. Speak no evil. Hear no evil" somehow, they forgot to advise you against using your pen. Spill some ink and prove that the pen is mightier than the sword. We'll keep you on the information highway. "the Information People". The News and Publication Society was involved in information sharing where it started its annual calendar of activities with the welcome information bulletin 'Bonjour' for the new batch. NAPS came up with magazine BITOTSAV-2000 and covered various sports and cultural activities with appropriate previews and reports. It was the point media manager for BITOTSAV-2000 with its involvement in Publicity, Publication, Creative writing, Heady lines, Soup D (P, F), Press Conference, handling and compiling of all results of various competitions.

N.S.S

N.S.S. volunteers in programmes aimed at "Janhit". We not only help the unprivileged but also spread knowledge and help make the world a better place to live in. "Not me, but you." The society organized Independence Password & Kavi Sammelan.

O.B.S.A.

Come festival time and there goes B.I.T., painted red with banners and posters along with artistic designs that engulf you with enthusiasm and excitement that lasts all the way.

Photographic Society

Capturing the flashes of moods and festivals. Let no emotions go unnoticed. "Lights, camera, action." "Photography was just a passing fancy" 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 Framing the Photo, PIC Speak, Explore the world, an exhibition- 'IMAGE-2000'- an exclusive display of colorful experiences during BITOTSAV-2000.

Rotaract Club

Whoever said that technocrats just can't freak out had apparently never experienced the Rotaract joyride. To enliven the spirit and spark, we bring you under one flag. "Interact with Rotaract." The society organized Dumb & Hardshell successfully by Rotaract Club.

SPIC MACAY

A movement dedicated to enriching education through the spread and appreciation of India's cultural heritage. " Let's relish that unmatched glory in true Indian spirit." The society organized Cultural Quiz & Inrovision successfully by SPIC MACAY

UNESCO Club

A dais to express the speaker in you, a reverie that takes you to the world intellectuals. From IITs to ISM UNESCO stays the flagship of B.I.T., The society organized Jam, What's the Good, Mayday, Turncoat, Elocution, Debate & Four Men in a Boat successfully by UNESCO.



Games, Sports & N.C.C

Games & sports

Irrespective of mass participation of students in Games & Sport activities there were specific programmes of intramural competitions in various teams of Games & Sport and Annual Sport meet. The North-East zone Inter University for men Kho-Kho Tournament was organised successfully in which Institute team participated. The Inter Technical Institute (East zone) Cricket Tournament was organised in which B.I.T. was Champion.

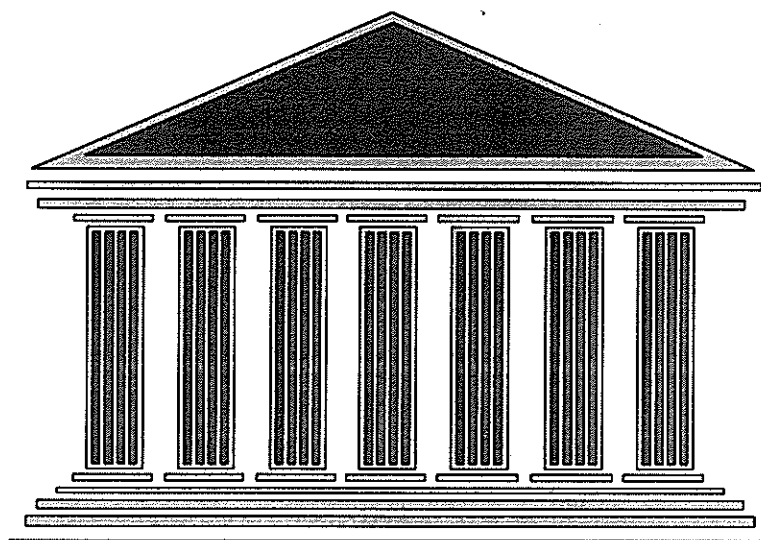
The Annual Sports Meet, Best Physique Competition and Intramural Tournament are also organised. Inter Technical Institute and Inter University Tournaments were organised during academic session 1999-2000.

Indian Sports Medicine Congress 1999 on "Talent Identification for games & sports" organised at New Delhi and International Congress 1999 on "Management of Indoor/Outdoor Sports & Infrastructure needs" in the 21st century with reference to Industries/Coal mines organised at Tamil Nadu, were attended by Sri Mahendra Kumar and he presented a paper in each of these.

N.C.C.

A total number of 81 cadets were enrolled for N.C.C. in the year 1999-2000. The cadets of Ist and IInd semesters were given the basic training of drill, weapons training, firing, adventure activities etc. The cadets also took part in the Independence Day and Republic Day parades. Overall performance of the cadets in the course work and practical training was good. The senior cadets of IIIrd and IVth semesters were given the specialized 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 Halls of Residence & Student Welfare Scheme

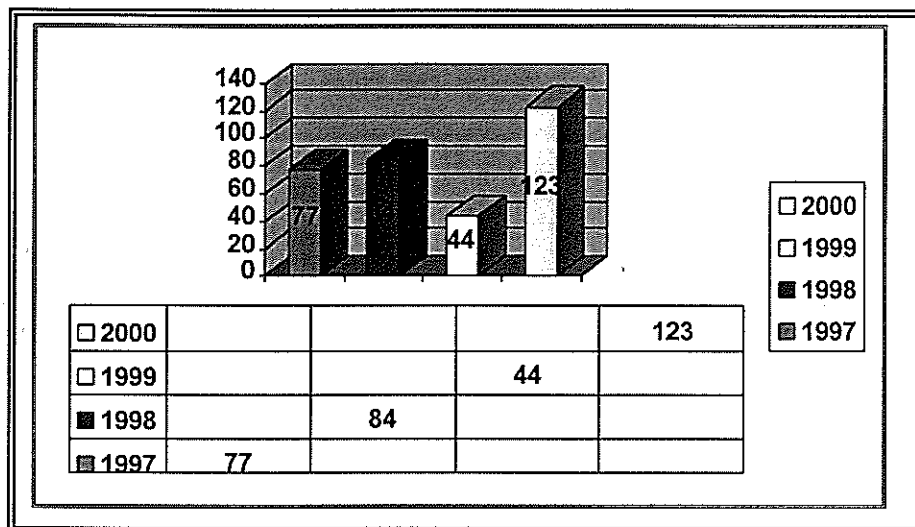


Student welfare scheme

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 1999-2000 were 123

Freeship Chart



Freeships Awarded during 1997-2000

Book bank:

Books are given on to the needy students through the book banks scheme.

The Students Halls of Residence

The Institute is completely residential and all the students are provided with accommodation in one of the hostels or halls of residence. The campus has seven hostels for boys and two 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 flowerbeds, elegant bushes and strategically planted ornamental trees.

The interior of the hostel includes spacious Dining Halls, Reading Rooms, Common Rooms, Reaction Halls, and Photography Dark Rooms located on both sides of the entrance.

The rooms are constructed in a row with a wide veranda all along the length with air gaps and balconies well set for common use.

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

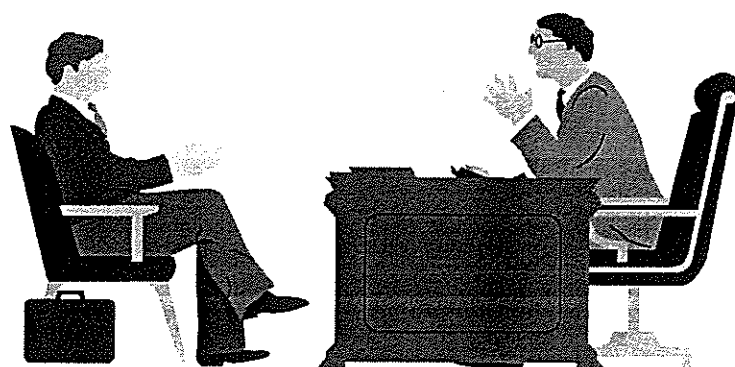
Indoor games like table tennis, carrom and chess etc. are available in each hostel in common room. The reading room subscribes to a large number of magazines, periodicals and newspapers covering wide taste of residents. The entertainment hall has also been provided with colour television set in each hostel.

Inter-hostel tournaments in indoor and outer games, quizzes, competitions and adventure trips are 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 hostels.

Training and Placement



Training & Placement

The Training & Placement Unit 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 3500 graduates and post-graduates have been successful recruited through campus interviews during the past 18 years.

During 1999-2000 (upto March 2000), 36 premier, Organizations visited the Institution offering 270 appointments to students from different disciplines. Some students have got offers from more than one companies. Some Organizations are expected to finalize or increase their selections later. The majority of the Organizations are offering starting salaries of ranges from 80,000 to 2.5 lacs p.a. with an average of Rs. 1.5 lacs p.a.

Bio-data and profiles of students of various disciplines (MBA, M.Sc. Bio-Medical Instrumentation, etc.) have 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 receive training during the Durga Puja and summer vacations every year.

The summary of campus placements during 1999-2000(upto March 2000) is as given below:

Summary of campus placements, 1999 - 2000

Dicipline	Branch	No. of Jobs
B.E.	Mechanical	56
	Production	02
	Electronics & Communication	67
	Electrical & Electronics	42
	Computer Science	45
	Civil	**
	B.PHARM	12
M. Degree	B. ARCHITECTURE	03
	M.B.A	07
	M.C.A	20
	M.PHARM.	**
M.E.	ELECTRONICS	03
	MECHANICAL	**
	ELECTRICAL	02
M.Tech.	REMOTE SENSING(off-campus)	**
M.Sc.	BIO-MEDICAL INSTRUMENTATION	01
	INFORMATION SCIENCE	09
P.G.	D.C.A	01

TOTAL NUMBER OF APPOINTMENTS	270
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NUMBER WAITLISTED	02
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NUMBER SHORTLISTED	02
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The details of confirmed appointments offered to the outgoing students during 1999 - 2000 are as follows:

Composite Campus Placement Status 1999 - 2000

S.NO.	ORGANISATION	APPOINTMENTS
1.	BFL SOFTWARE LTD, BANGALORE	05
2.	TATA CONSULTANCY SERVICES, CALCUTTA	41
3.	WIPRO GE, BANGALORE	07
4.	WIPRO INFOTECH, CALCUTTA	21
5.	COGNIZANT TECHNOLOGY SOLUTIONS, CHENNAI	05
6.	TELCO, JAMSHEDPUR / MUMBAI	07
7.	VSNL, MUMBAI	04
8.	CITICORP INFO. TECH. IND. LTD, BANGALORE	20
9.	TISCO, JAMSHEDPUR	22
10.	HCL TECHNOLOGIES & INFOSYSTEM, NOIDA	09
11.	MOTOROLA, BANGALORE	02
12.	SATYAM COMPUTER SERVICES, SECUND	21
13.	TATA INFOTECH, NOIDA	12
14.	CA-TCG, CALCUTTA	15
15.	INFOSYS, BANGALORE / BHUWANESWAR	12
16.	SCHINLER	02
17.	PHARMACIA & UPJOHN	03
18.	LARSEN & TOUBRO-ECC, CALCUTTA	**
19.	ICIL, PUNE	06
20.	TIMKEN INDIA PVT. LTD.	03
21.	UBEST, CALCUTTA	02
22.	EXIDE, CALCUTTA	03
23.	RANBAXY, DELHI	09
24.	CROMPTON GREAVES, BOMBAY	01
25.	HCL INFOSYSTEMS, NOIDA	07
26.	NTPC, MUMBAI	02
27.	WIPRO TECHNOLOGIES, BANGALORE	06
28.	KOSHIKA - USHAPHONE, NEW DELHI	06
29.	HINDALCO, RENUKOOT	03
30.	ITC TRIVENI TISSUES, CALCUTTA	**
31.	RENUSAGAR POWER PLANT, RENUKOOT	01

32.	HINDUSTAN MOTORS, CALCUTTA	02
33.	PLANETASIA.COM, BANGALORE	04
34.	ELI LILY RANBAXY, NEW DELHI	**
35.	TATA INTERACTIVE SYSTEMS LTD, MUMBAI	07
36.	TECUMSEH	**

TOTAL NO. OF CANDIDATES SELECTED SO FAR	270
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**** Results of final interview awaited**

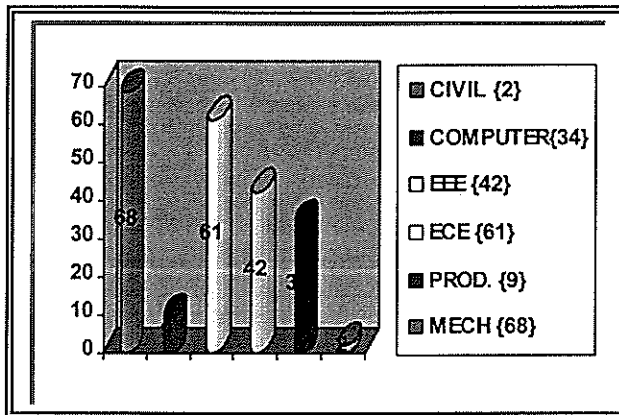
Off-Campus Recruitment 1998-1999

1.	HUGHES SOFTWARE, BANGALORE	02
2.	KHANSAHEB CONSTRUCTION DIVN., DUBAI	01

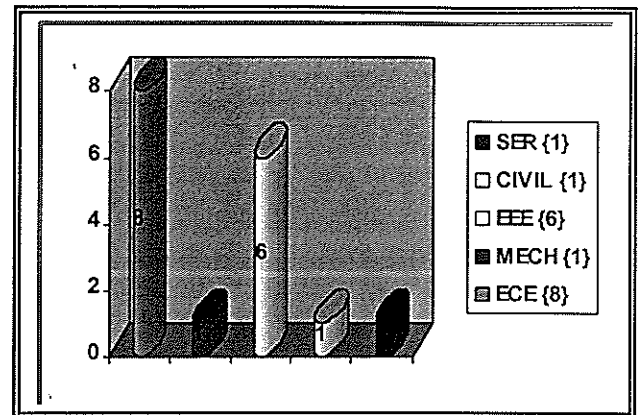
The other Organizations which have planned to visit / asked for biodatas are:

✓	POLICY MANAGEMENT SYSTEMS INDIA PVT. LTD., INDORE
✓	INTERRA, NOIDA
✓	ITC-ISD, BANGALORE
✓	L&T ITL, BOMBAY
✓	NIIT, DELHI / CALCUTTA
✓	N.E.I, JAIPUR
✓	VOLTAS, MUMBAI
✓	SUBHASH PROJECTS, CALCUTTA
✓	BHARTI TELENET, BHOPAL

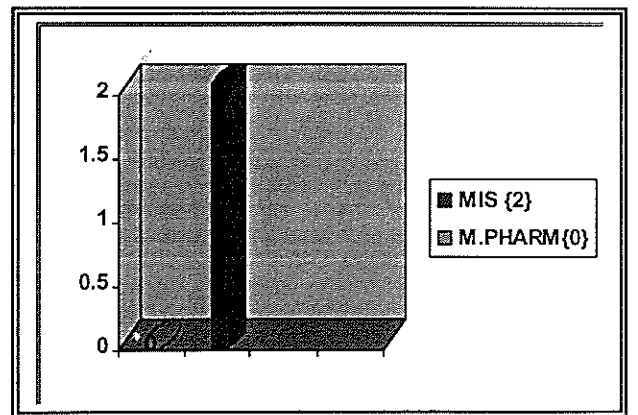
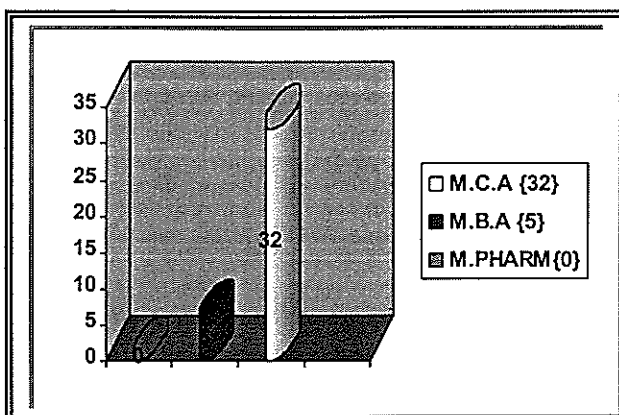
PLACEMENT DURING 1996-1997



BACHELOR OF ENGINEERING

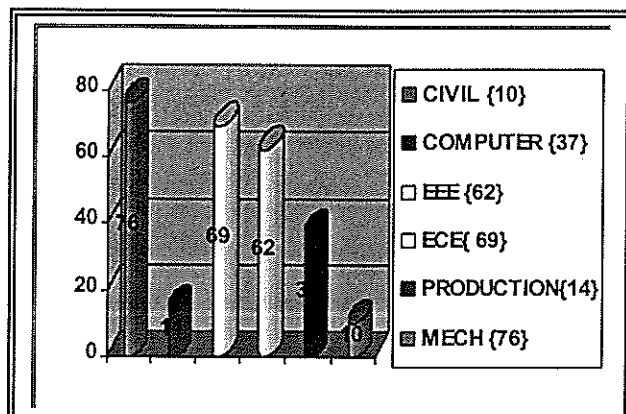


MASTER OF ENGINEERING

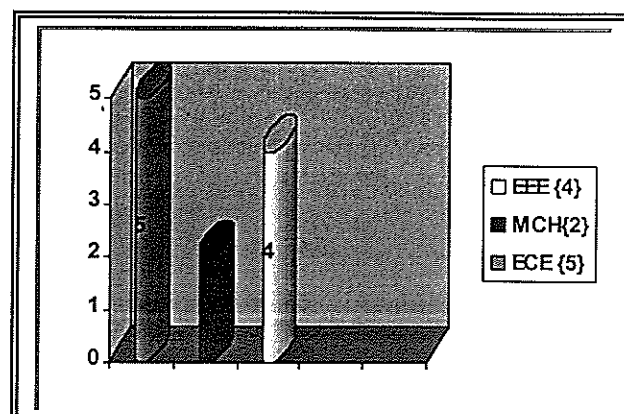


OTHER DISCIPLINES

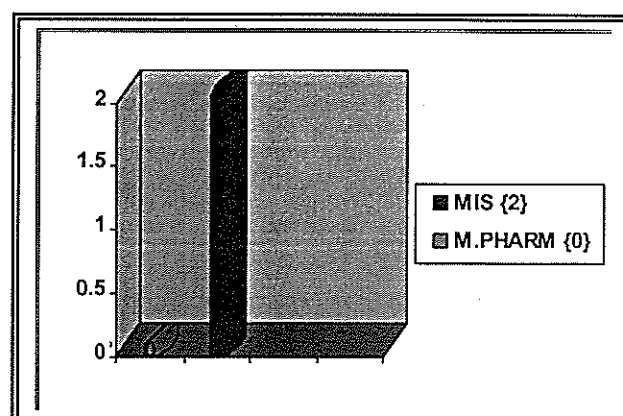
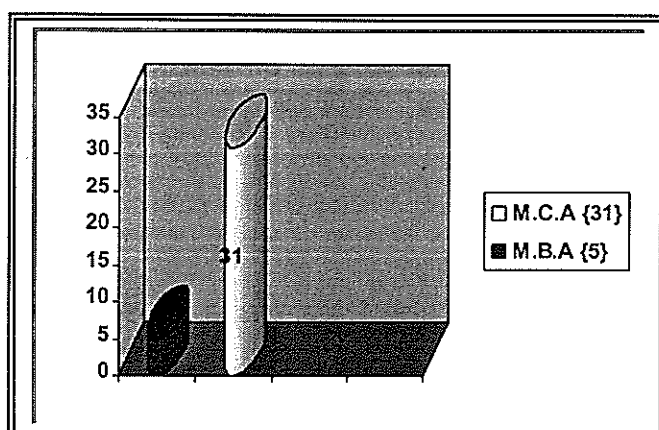
PLACEMENT DURING 1997-1998



BACHELOR OF ENGINEERING

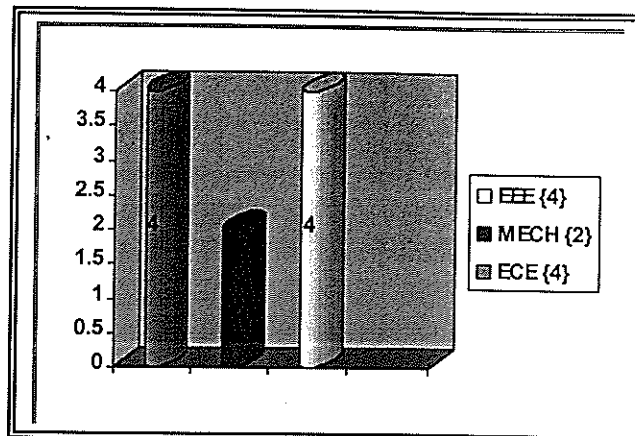
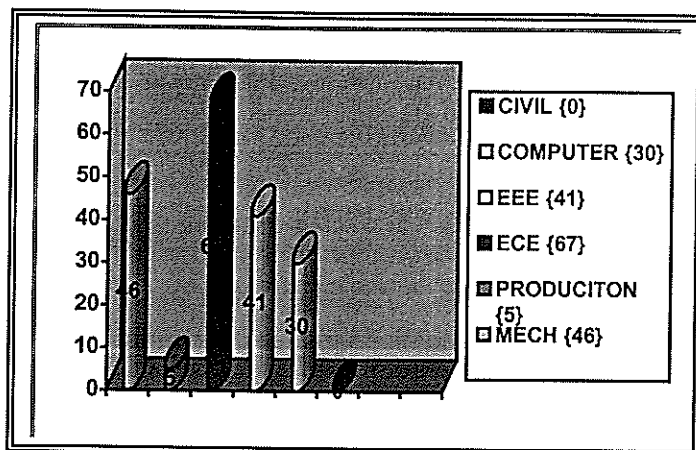


MASTER OF ENGINEERING



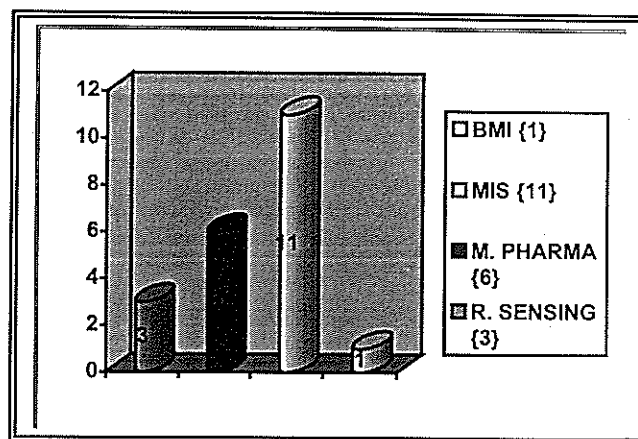
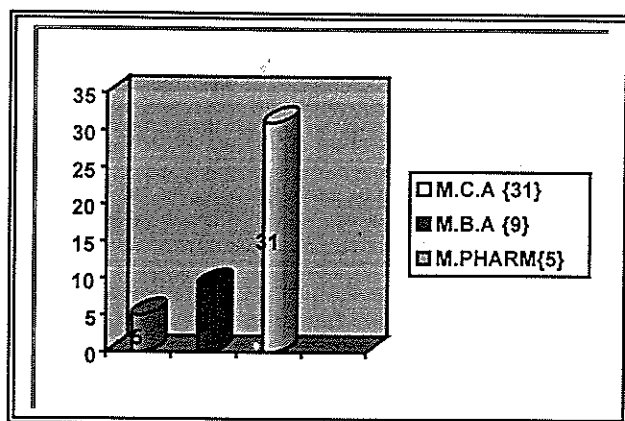
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PLACEMENT DURING 1998-1999



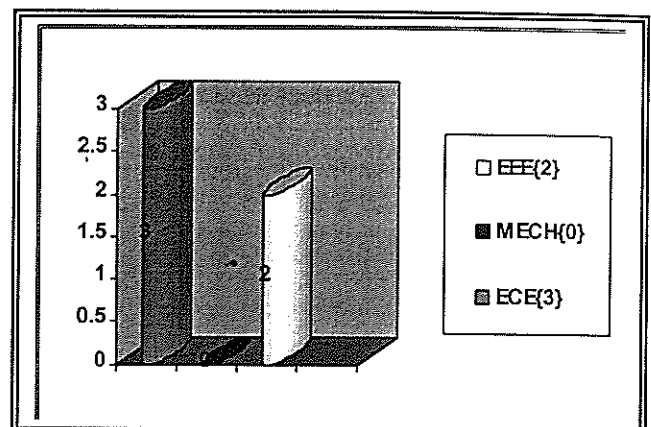
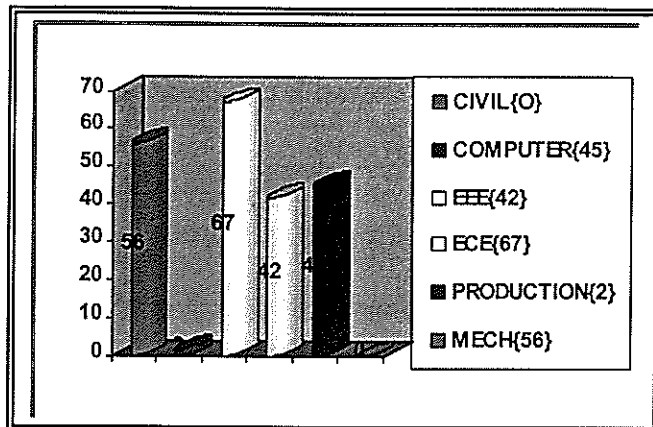
BACHELOR OF ENGINEERING

MASTER OF ENGINEERING



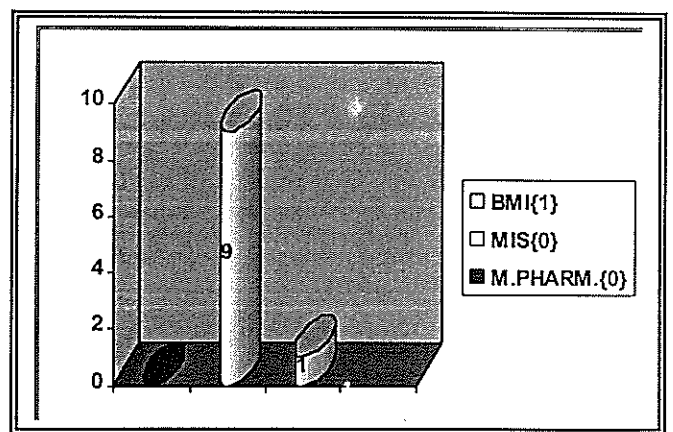
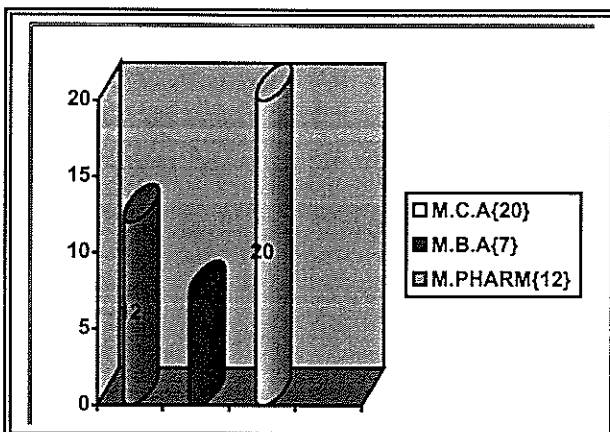
OTHER DISCIPLINES

PLACEMENT DURING 1999-2000



BACHELOR OF ENGINEERING

MASTER OF ENGINEERING



OTHER DISCIPLINES



Board of Governors

Chairman	:	Sri G. P. Birla
Vice- Chairman	:	Sri C .K. Birla
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<i>Nominee of the Government of India Ministry of Human Resources Development</i>	:	Jt. Educational Advisor (T) (Ex. Offico)
<i>Nominee of the University Grants Commission</i>	:	Prof. S .K. Khanna
<i>Nominee of the All India council for Technical Education</i>	:	Dr. M.D. Tiwari
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<i>Commissioner & Secretary, Higher Education Government of Bihar, (Ex. Offico)</i>	:	Shri Vijay Prakash, (IAS)
<i>Commissioner, Chotanagpur Division Bihar, Ranchi (Ex. Offico)</i>	:	Shri Phool Singh, (IAS)
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<i>Nominee of the Hindustan Charity Trust</i>	:	Shri C.K. Birla Shri Deepak Chatterjee Dr. H.C. Pande
<i>Vice-chancellor, BIT, Ranchi (Ex. Offico)</i>	:	Dr. S.K. Mukherjee
<i>Members of Institute Faculty</i>	:	Dr. Surendra Kumar Shri Girish Pathak
<i>Member's nominated by the General Council</i>	:	Shri D.N. Patodia Shri K.P. Singhi Shri G. P. Lal

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Vice-Chancellor, BIT, Mesra Ranchi (Ex. Offico) : Dr. S.K. Mukherjee

Members

Nominee of Chancellor : Dr. D.D. Guru
Dr. R. Badrinarayan
Dr. J.D.Rai

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Government of Bihar, (Ex. Offico)* : Dr. Vidyasagar Yadav

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Prof. S. H. Kekre
Prof. S.C. Goel
Prof. B. S. Rajeevalochanam
Dr. Ashok Mishra
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Prof. N.R. Rao
Dr. B.M. Karan
Prof. K.P. Singh
Dr. B.L. Gupta

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 Prof. R.K. Narayan
 Dr. Mohan Verma
 Dr. G.M. Panpalia
 Dr. K.V. Krishnamurthy
 Dr. D. Sasmal
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 Prof. G.C. Singh
 Prof. B.K. Verma
 Dr. R.K. Popli
 Dr. B.N. Das
 Dr. S.C. Prasad
 Dr. S.S. Dhabriya

Under Clause 4 of the Regulations

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 Dr. Gopal Pathak

Librarian

: -----

Controller of Examinations

: Dr. P.C. Joshi

Secretary***Registrar (Actg.)***

: Prof. G. Sahay

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Nominee of the Chancellor : Shri S. D Saxena

Nominee of the Board of Governors : Shri C.K. Birla

Nominee of the General Council : Dr. H.C. Pande

Vice-Chancellor, BIT, Mesra, Ranchi : Dr. S.K. Mukherjee

Hony. Treasurer, BIT, Mesra, Ranchi : Shri S.S. Jajodia

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Members

Adviser, Planning & Campus Development : Prof. G.P.C. Rao

Hony. 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, Department of Civil Engg. : Prof. B.S. Rajeevalochanam

Member-Secretary

Registrar (Actg.) : Prof. G. Sahay

Executives and Departmental Heads/Incharge: Sections

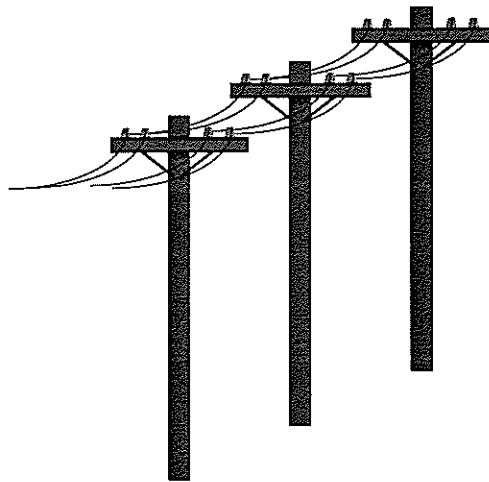
Vice-Chancellor	:	Dr. S.K. Mukherjee
Hony. Treasurer	:	Shri S.S. Jajodia
Registrar (Actg.)	:	Prof. G. Sahay
Deans		
<i>Policy, Planning and Faculty Development</i>	:	Dr. B.G. Varshney
<i>Post-Graduate Studies</i>	:	Dr. J.N. Mishra
<i>Under-Graduate Studies</i>	:	Prof. S.H. Kekre
<i>Collaborative Research Programmes</i>	:	Shri T.R. Ranganath
<i>Extension Centres</i>	:	Dr. P. Dhyani
Assistant Treasurer	:	Shri G.S. Chhaochharia

Departmental Heads/Incharge: Sections

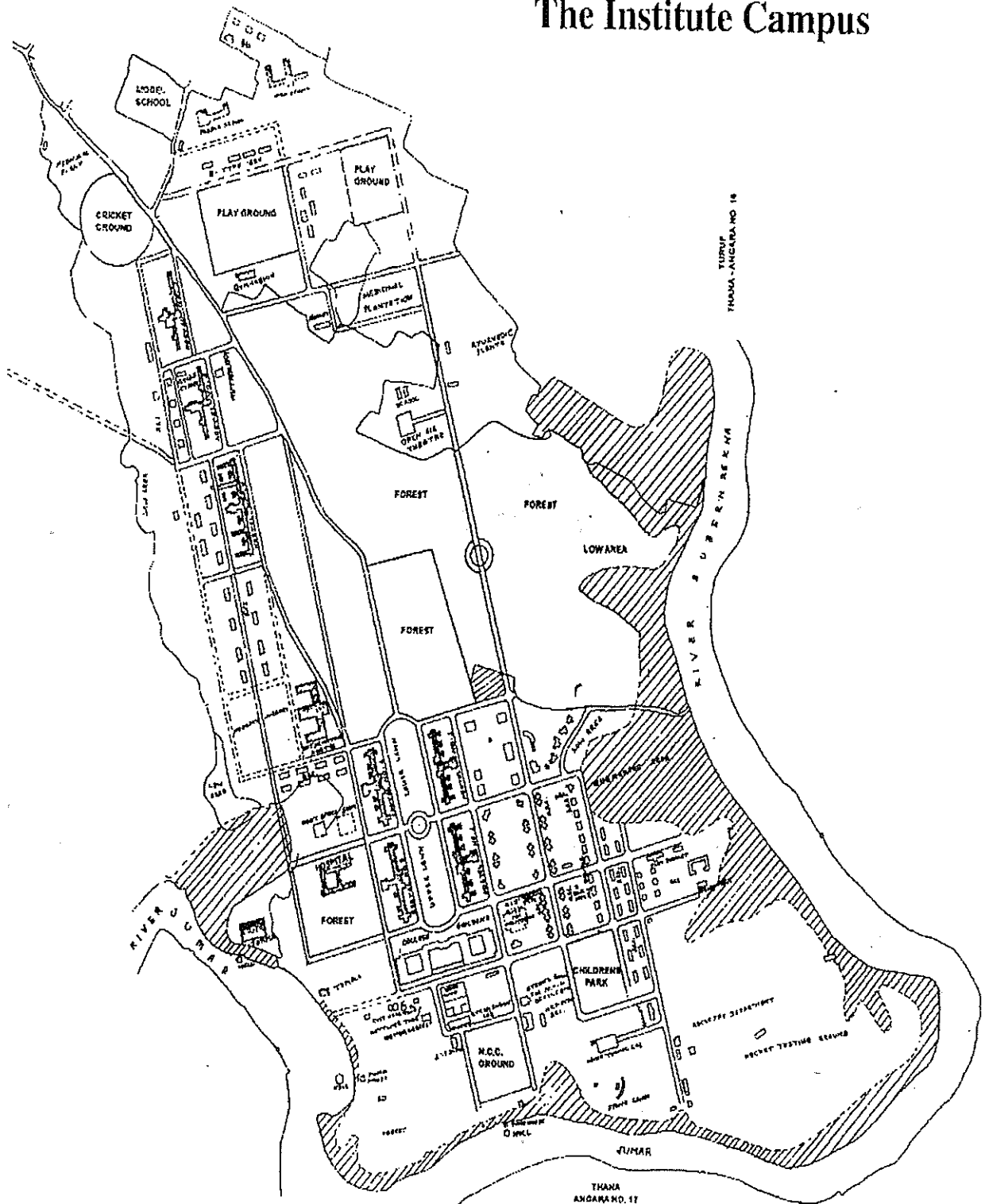
Applied Chemistry	:	Dr. B.L. Gupta
Applied Mathematics	:	Dr. N.C. Mahanti
Applied Physics	:	Dr. P.K. Barhai
Applied Mechanics	:	Prof. S. Sengupta
Architecture	:	Prof. N. Sengupta
Civil Engineering	:	Prof. B.S. Rajeevalochanam
Computer Science & Engineering	:	Dr. P.K. Mahanti
Electrical & Electronic Engineering	:	Dr. B. M. karan

Electronic & Communication Engineering	:	Prof. S.C. Goel
Information Science	:	Prof. S.H. Kekre
Management	:	Dr. S.K. Mukherjee
Mechanical Engineering	:	Prof. A.P. Singh
Pharmaceutical Science	:	Dr. S.P. Basu
Polymer Engineering	:	Dr. (Mrs.) M. Mukherjee
Production Engineering	:	Dr. S. Kumar
Physical Education & Sports	:	Prof. R.S. Yadav
Remote Sensing	:	Dr. S.S. Dhabriya
Space Engineering & Rocketry	:	Dr. A.K. Chatterjee
Continuing Education	:	Prof. Awadh Prasad
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Controller of Examinations	:	Dr. P.C. Joshi
Co-ordinator Semester Programme	:	Dr. D. Sasmal
Finance	:	Shri M.L. Verma
Library	:	Prof. G.C. Singh
Medical Officer	:	Dr. (Mrs.) C. Mishra
Nodal Centre	:	Prof. M.K. Saxena
Training & Placement	:	Dr. D. Jairath
Chief Warden	:	Dr. Gopal Pathak
Cultural Co-ordinator	:	Prof. Ram Pal Singh

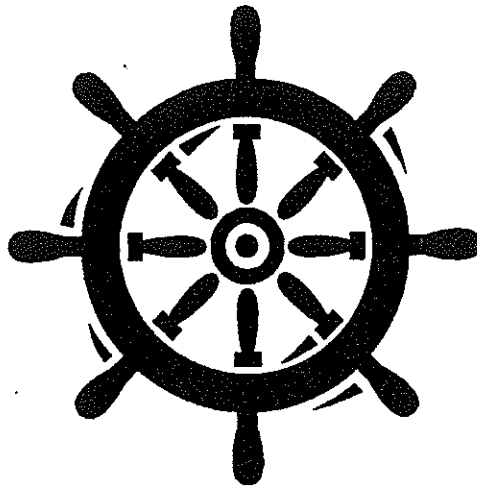
Important Telephone Number



The Institute Campus



Compiled & Edited by Rajiv Ranjan and Rajesh K. Ranjan



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