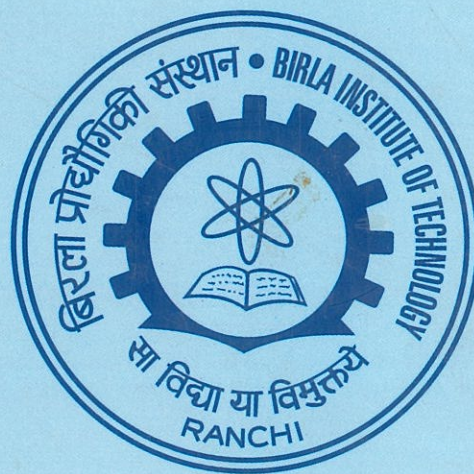


# ANNUAL REPORT

## 2002-2003



**BIRLA INSTITUTE OF TECHNOLOGY**  
(DEEMED UNIVERSITY)  
MESRA, RANCHI, JHARKHAND  
INDIA

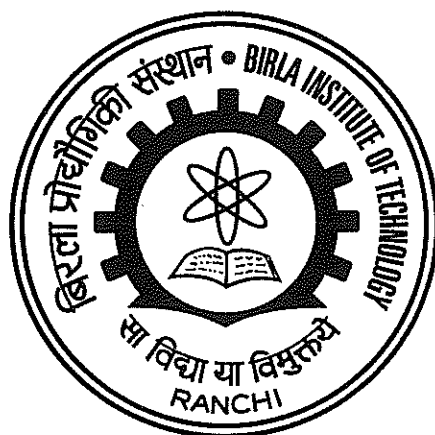




**Convocation 2002-2003**

# **ANNUAL REPORT**

## **2002-2003**



**BIRLA INSTITUTE OF TECHNOLOGY**  
**(DEEMED UNIVERSITY)**  
**MESRA, RANCHI, JHARKHAND**  
**INDIA**

## **प्रार्थना**

यं शैवाः समुपासते शिव इति ब्रह्मोति वेदान्तिनो  
बौद्धाः बुद्ध इति प्रमाणपटवः कर्तेति नैयायिकाः ।  
अर्हन् नित्यथ जैन शासनरताः कर्मेति मीमांसकाः  
सोऽयं नो विदधातु वाञ्छित फलं त्रैलोक्यनाथो हरिः ॥

# CONTENTS

<b>Vice-Chancellor's Report</b>	1
<b>Introduction</b>	4
Administration	4
Institute Campus	5
Institute Building	5
Residential Complex	5
Hostel Accommodation	5
Guest Accommodation	6
Auditorium	6
Games & Sports Complex	6
Dispensary cum Health Centre	6
Shopping Centre	7
Students Hall of Residence	7
Student Intake	8
Admission during 2002-2003	11
Convocation, Results, Degree/Diploma Awarded	18
Faculty Positions	20
New Appointments During 2002-2003	21
Superannuation During 2002-2003	22
<b>Activities of Academic Departments</b>	23
Architecture	25
Applied Chemistry	27
Applied Mathematics	29
Applied Mechanics	31
Applied Physics	34
Bio-Medical Instrumentation	40
Biotechnology	42
Civil Engineering	44
Computer Science & Engineering	48
Electrical & Electronics	51
Electronics & Communication	56
Hotel Management & Catering Technology	58

<i>Information Science</i>	59
<i>Management</i>	60
<i>Mechanical Engineering</i>	63
<i>Pharmacy</i>	65
<i>Polymer Engineering</i>	71
<i>Production Engineering</i>	74
<i>Physical Education &amp; Sports</i>	81
<i>Remote Sensing</i>	82
<i>Space Engineering &amp; Rocketry</i>	85
<i>Centre of Environmental Science and Engineering</i>	90
<b>Extension Centres</b>	91
<i>Jaipur (Rajasthan)</i>	93
<i>Noida (U.P)</i>	95
<i>Kolkata (W.B)</i>	95
<i>Allahabad (U.P)</i>	97
<i>Lalpur (Jharkhand)</i>	99
<i>Bahrain</i>	100
<i>Muscat (Saltanate of Oman)</i>	101
<b>University Polytechnic</b>	103
<b>Central Library &amp; Documentation Services</b>	107
<b>Training and Placement Division</b>	111
<b>Student Activities</b>	117
<b>Student Welfare Scheme</b>	121
<b>Annexures</b>	123
<i>Members of General Council</i>	125
<i>Board of Governors</i>	127
<i>Finance Committee</i>	128
<i>Building &amp; Work Committee</i>	129
<i>Technical Council</i>	130
<i>Executives &amp; Department Heads/Incharge</i>	131
<i>Departmental Board of Study</i>	133
<i>Important Telephone Number</i>	143
<i>Address of Extension Centres</i>	145

## VICE-CHANCELLOR'S REPORT

The Institute continued to consolidate and expand during the period under review. Two new 4-Year Under-graduate programmes in Bio-Technology and Hotel Management & Catering Technology have been introduced with a total intake of 90 students per year. The institution also continued to its efforts to increase the floor space available for academic activities and for laboratories. Construction of the Bio-technology building is in advance stage and above 9000 S.ft. is expected to be available for use during September 2003. To cope up with the increased intake of students at the Under-graduate level four Lecture Halls each with an accommodation of 120 students and equipped with latest audio-visual facilities have been planned and construction of one unit comprising of two such lecture halls has been taken up. The University has also signed a MOU for installation of VSAT facility under INFLIBNET of UGC with UGC. This would provide internet system and online library for journals and publications selected by UGC. The academic floor space has also been added to the Centers located at Noida and Jaipur. MCA full-time programme and MBA full-time programme have been initiated at Noida and Jaipur Extension Centres. The Post-graduate programmes in the area of Fuel Combustion, Quality Engineering & Management, Scientific Computing and Industrial Mathematics have also been introduced at the Main Campus. The annex of Hostel No. 8 (for girls) has been completed and 184 additional seats has been made available to the senior girl students of the Institute. It is expected that another 360 seats would be made available to the girl students during October 2003. 284 more single seated accommodations would also be expected to be made available to the boy students during September this year. The construction of the second additional hostel for boys having 284 single seated accommodation has also been initiated during the period under review.

The Institute has been recognized for its contribution by the European Union with the grant of Asian Link Project for establishing an intentional centre for research and training in Mobile Communication involving leading institutions in India, Denmark, Indonesia, Italy and Netherlands.

The Institute also takes great pleasure in noting that Dr. H.C. Pande, Vice Chancellor *Emeritus*, is one of the recipients of ISTE Honorary 'Fellowship 2002' for his significant contribution to the development of Technical Education system. The Fellowship was presented during the Annual Convocation of ISTE on December 27, 2002.

The second batch of students to the University Polytechnic were admitted in all the four disciplines, i.e. Electronics, Automobile, Computer Science and Manufacturing Technology. The Institute has proposed to the State Government to add a Diploma Programme in the discipline of "Medical Laboratory Technology" with an annual intake of 30 students, keeping in view the ever increasing absorption of Electronics and Computer based equipment in the medical practice.

The Institute has spent about Rs. 600 lakhs in procuring of equipment for different departments each includes Rs. 150 lakhs worth of equipment procured for the Centre of Applied Biotechnology with the funds provided by the Government of Jharkhand.

Several academic interaction programmes in the form of Seminars/Workshops, during the period during the period under review, were organized in the Institute. This year such activities started with an All India Workshop on Application of Mechatronics in Indian Scenario which was organized jointly by The Institution of Engineers (India) and the Department of Production Engineering during Sept. 28–29, 2002. National Seminar on “Indian Power Scenario – Present & Future Perspective” -18<sup>th</sup> National Convention of Electrical Engineers - sponsored by The Institution of Engineers (India) was held in the Department of Electrical And Electronics Engineering during November 1-2, 2002 at the Institute premises. 1st International HEMSI (High Energy Materials Society of India) Workshop on “Advances in Solid Propellant Technology” was held in the Institute between Nov. 12-13, 2002 by the Department of Space Engg. & Rocketry. A Short Term training programme was held on Dec. 16 - 27, 2002 for teachers of engineering colleges and employees of industries by the Department of Management of the Institute. ISTE-AICTE sponsored Short-term training programme on “Intelligent Control Applications” was organized by the Department of Electrical & Electronics Engineering during Dec. 16-28, 2002. The 6<sup>th</sup> Meeting of the Project Advisory Committee (Robotics & Manufacturing) of the Department of Science & Technology, Government of India, was held at the Institute premises on Dec. 12, 2002. In this meeting chaired by Prof. Amitabha Ghosh, former Director, IIT, Kharagpur and presently Professor, IIT, Kanpur, the twenty new proposals along with reviews of one on-going project and two completed projects were undertaken. The 20<sup>th</sup> All India Manufacturing Technology, Design and Research (AIMTDR) Conference was held at the Institute Campus between Dec. 13-15, 2002 by the Production Engineering Department for presentation and discussion of original research and development work in the broad area of Manufacturing. The Conference reflected the ever-dynamic scenario in manufacturing design & research and provided the much-needed focus for the future growth. The Department of Management of our Institute organized its Annual B-School Festival, Samaagam-2003 from Feb.27–March 1, 2003. The AICTE had identified this department for organizing a 7-day Training cum Workshop on “Cultivation and Utilisation of Medicinal Plants of Jharkhand” and it was held from March 3-9, 2003. A National Seminar on “Prediction of Meteorological Events : A Mathematical Approach” was held by the Department of Mathematics during March 25-26, 2003.

During the period under report almost all the Departments of the Institute have been sanctioned grants for a total of seventeen projects by various Government agencies like, AICTE, UGC, CSIR, DST and GOI etc. Out of these seventeen, AICTE had sanctioned 7 Projects involving a sum of Rs. 61.50 lakhs. Another 4 Projects were sanctioned by UGC involving a sum of Rs. 12.40 lakhs. CSIR had sanctioned a total of Rs.6.72 lakhs for



1 Project of our Institute. While DST and GOI had sanctioned 3 and 2 Projects involving a sum of Rs. 28.47 lakhs and Rs. 4.94 lakhs respectively.

The Institute organized during this period a few Games & Sports activities of the Institute very successfully. Some important events of which were the Eastern Zone Inter Technical Chetan Devraj Memorial Cricket Tournament, University Best Physique Competition and 17<sup>th</sup> Annual Athletic Meet of the University. It has also conducted the usual Inter- mural Tournaments in all games. Besides these, the Institute teams also participated in All India Inter University Best Physique Competition and N.E.Z. Inter-University Tennis Tournaments held at Gwalior and Aligarh Muslim University respectively.

The students of the Institute participated in different intramural and extramural collateral activities including cultural events and competitions. They won several distinctions in many such events held at different institutions. The students of our Institute organized the 'Annual Cultural Event' - *BITOTS AV* - in the campus during Feb. 16-19, 2003.

The XIII Convocation of our Institute was held on 16<sup>th</sup> February, 2003 in which a total of 1162 students were awarded several degrees and diplomas, out of which 797 students are recipients of Under-graduate degrees, 347 Post-graduate degrees, 15 Post-graduate diplomas and 3 Doctoral degrees. The first batch of students who had successfully completed B.Tech. Engineering Programmes through our Allahabad Extension Centre, also received degrees in this Convocation. This programme was successfully designed to provide 'Career Development' opportunity to Diploma holders working with different Governmental departments.

The Institute acknowledges the great support it received from all its well wishers including Government of India, Government of Jharkhand and statutory bodies like University Grants Commission, All India Council for Technical Education, Department of Science & Technology, Government of India, Department of Information Technology, Government of India, and Defence Research Establishments for their continuous support and encouragement provided to it during the period under report. The Institute reiterates its commitment for the development and welfare of this newly created State and its people as well as development of the country as a whole.

\* \* \*

# INTRODUCTION

The Institute was established as an All India Institute for imparting technical and research in 15 July 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 recommendation 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 University Act. The Chancellor of the University of Bihar made the Rules for its governance.

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

The Institute has constantly improved on its technical facilities as well as academic 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.

## Administration

B.I.T. Mesra is a "Deemed University" under Sec. 3 of the U.G.C. act 1986. It functions under the overall supervision, direction and control of a high power Board of Governors, comprising representatives of the Ministry of Education, Government of India, the U.G.C., the State Government, The Chancellor, the A.I.C.T.E., The Hindustan Charity Trust and the Institute Faculty. Shri G.P. Birla is the Chairman of the Board of Governor's. The Governor of the state of Jharkhand is the chancellor of the Institute. Composition of the Board of Governors is given in Annexure.

The Technical Council decides the academic policy of the Institute. It control and approves the curriculum, courses and the examination results. It appoints committees like Regulation Committee for Under-Graduate and Post-Graduate Courses, Semester Programme Coordination Committee, Admission Committee, Scholarship Committee, Student's Welfare Committee etc. and Departmental Board of Study 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. Members of the technical council are listed in Annexure. The composition of various departmental board of study are given in 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. The composition of these committees are given in Annexure.

## **Institute Campus**

The Institute is fully residential and extends over 780 acres. The main building of the Institute covers in area of 30.000 sq. mtrs. and accommodates the various research and training laboratories, administrative offices and lecture rooms.

The Workshop annexure has 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
◆ R & D Building	7200
◆ Community Hall (Near completion)	360
◆ Biotechnology Centre (Under construction)	1930
◆ Polymer Engineering	744

### **Residential Complex**

◆ Staff quarters in different categories	300 Nos.
◆ Residential complex for supporting services: Guards, Dairy, Shopkeepers, Washerman etc.	70
◆ Staff Quarters in different categories (Nearing completion)	72

### **Hostel Accommodation**

◆ Seven Boy's Hostel	1410 Rooms (single)
◆ Three Girl's Hostel	198 Rooms (double) &184 Rooms (single)
◆ One Foreign Student's Hostel	152 Rooms (single)

## Guest Accommodation

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

## Auditorium

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

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

## Games & Sports Complex

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

◆ Gymnasium including Multi Gym	_____	1
◆ Stadium for Tracks & Fields for Sports/Athletics	_____	1
◆ Cricket ground including net	_____	2
◆ Football grounds	_____	2
◆ Hockey grounds	_____	2
◆ Basket Ball courts	_____	4
◆ Volley Ball courts	_____	6
◆ Tennis courts	_____	6
◆ Badminton courts (one indoor & five outdoor)	_____	6
◆ Kho-Kho ground	_____	1
◆ Kabaddi ground	_____	1

## Dispensary-Cum-Health Centre

1. No. of Beds : Male – 08, Female –4.
2. Facilities Available : Outdoor + Indoor Service, Pathological Tests, E.C.G., X-Ray, Immunization, National Programme (Pulse Polio Immunization Programme, Leprosy clinic, T.B. clinic, Immunization).
3. In case of any emergency, which is to be managed by super specialist in Intensive care centre we refer the patient either to local Rajendra Institute of Medical Sciences, Ranchi or Apollo Hospital Erba, Ranchi. One of our Doctors accompanies the patient. We have liaison with the doctors of these two hospitals. Our doctor manages the case with Co-ordination of the those Hospitals.



4. Community Service- Treatment and supply of medicines 10 local villagers at free of cost.
5. Specialist Facility – Services of specialist of Rajendra Institute of Medical Sciences, Ranchi are available to the Hospital.
6. Staff - members and their dependants as well as students have been covered by Mediclaim for reimbursement of their medical expenses.
7. Hospital is open round the clock with the medical officer and two para-medical staff on duty shift wise.

### Shopping Centre

A well maintained 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 exceeds Rs 2 crores mark in value.

### Others :

◆ Consumers co-operative stores	_____	375 Sq. mtrs
◆ NCC Block	_____	400 Sq. mtrs
◆ Rifle Firing Range	_____	1 No.
◆ NCC Parade ground	_____	1 No.
◆ Gaurage Cum Quarters	_____	200 Nos.

### The Students Halls of Residence

The institute is completely residential and all the students are provided with a room in one of the hostels or Halls of Residence. The campus has seven hostels for boys and two separate 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, Common Rooms, Reading Rooms. Rooms located on both sides of the entrance. The rooms are constructed in a row with a wide veranda in all along the length with air gaps and balconies well set for common use.

The students are provided with a single-seated room furnished with steel cot, table and chair and a built-in almirah. The girls 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, carom and chess etc. are available in each hostel in common room. The reading room subscribes to a good numbers of magazines, periodicals and newspapers covering wide taste of reading of residents. The entertainment hall has also been provided with colour television set in each hostel.

Inter-hostel tournament in indoor and outdoor 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.

### **Students Intake**

#### **Courses & Degree Programmes**

Currently the Institute is offering a variety of Programmes as detailed below

#### **A. In Campus**

Course	Intake Capacity	Duration of Course	Year of Introduction of the Course
<b>Bachelor Degree Courses</b>			
1. Electrical & Electronics Engg.	60	4 years	1955
2. Mechanical Engg.	90	4 years	1955
3. Civil Engg.	60	4 years	1957
4. Electronics & Comm. Engg.	120	4 years	1964
5. Production Engg.	30	4 years	1964
6. Pharmacy	30	4 years	1972
7. Computer Science	120	4 years	1983
8. Architecture	20	5 years	1993
9. Polymer Engg.	25	4 years	1995
10. Information Technology	60	4 years	2001
11. Biotechnology	60	4 years	2002
12. Hotel Management & Catering Technology	60	4 years	2002

## Master's Degree Courses:

<b>Electrical Specialization</b>	12	2 years	1964
1. Control system			
2. Power system			
<b>Mechanical Specialization</b>	06	2 years	1964
1. Heat Power Engg. Civil specialization	02	2 years	1964
1. Soil Mechanics			
2. Structural & Foundation Engg.			
<b>Electronics &amp; Communication specialization</b>	12	2 years	1965
1. Instrumentation			
2. Microwave			
<b>Space Engg. &amp; Rocketry Specialization</b>	10	2 years	1965
1. Rocket Propulsion			
2. Aerodynamics			
<b>M.E. (CAAD) Specialization</b>	05	2 years	1999
1. Computer Aided Analysis & Design -			
2. Tribology			
M.E. (Production)			
A.M.S.	25	2 years	
Software Engineering	15	2 years	2000
Quality Engineering & Management	25	2 years	2002
Master of Technology Programmes			
The following disciplines are offered			
Remote Sensing	15	2 years	
Fuels & Combustion	25	2 years	2002
Computer Science	15	2 years	
Scientific Computing	16	2 years	2002
New Material & Processing Technology	18	2 years	2002
Environmental Science & Engg.	18	2 years	2002

<b>Business Management specialization</b>	60	2 years	1980
1. Marketing			
2. Finance			
3. Systems			
4. Industrial Management			
<b>Master of Pharmacy specialization</b>	25	2 years	1983
1. Pharm. Chemistry		2 years	1983
2. Pharmaceutics		2 years	1983
3. Pharmacology		2 years	1998
4. Pharmacognosy		2 years	1998
5. Pharm. Biotechnology		2 years	1998
<b>Master of Computer Applications</b>	60	3 years	1984
<b>Master of Science Programme</b>			
Bio-Medical Instrumentation	20	2.5 years	1992
Information Science	30	2 years	1993

### Continuing Education (part time) Post-Graduate Programme

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

1. A certificate of Merit after Completing 6 units.
2. A diploma after completing 12 units.
3. A Degree after completing 20 units.

### B. Extension Centre

	Allahabad (U.P)	Jaipur (Rajsthan)	Lalpur,(Ranchi) (Jharkhand)	Kolkata (W.B.)	Noida (U.P.)
<b>Course</b>					
BCA	80	80	180	-	80
BBA	40	80	180	-	80
MCA	45	40	100	40	45
MBA	-	-	60	-	45
MBA (PT)	-	-	30	-	-
*M.Tech (CS), PT	-	-	30	-	-
*M.E. (P.T)	-	-	*	-	-
M. Sc. (I.T.)	-	-	25	-	-

\* Courses are offered subject to availability of minimum number of candidates for the programme and approval of the department.



### ***C. Doctor of Philosophy programme***

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

### **Admission during 2002-2003**

#### **Student Enrollment.**

During the academic year 2002-2003, a of total of 5291 students were registered in various courses. The branch-wise enrolled is detailed below.

<b>A. Course</b>	<b>Full-Time</b>	<b>Part-Time</b>
Bachelor of Engineering.	1761	-
Bachelor of Architecture	103	-
Bachelor of Pharmacy	126	-
Bachelor of Hotel Management & Cat. Tech	27	-
Bachelor of Comp. Applications	1146	-
Bachelor of Business Administration	694	-
Bachelor of Technology	-	181
Master of Business Administration	169	45
Master of Computer Applications	477	71
P.G. Diploma in Comp. Applications	-	-
Master of Pharmacy	49	-
Master Engineering	95	9
Master of Technology (CS, R.S).	96	31
M.Sc (Biomedical Instrumentation)	40	-
M.Sc (Information Science)	64	-
M.Sc (Information Technology)	45	-
M.Sc (Communication)	15	-
<b>Total</b>	<b>4967</b>	<b>324</b>
<b>Grand Total -</b>	<b>5291</b>	

### **B. Registration in Ph. D. Programme**

As many as 104 students were pursuing the Ph.D. programme in the area of Engineering, Science, Pharmacy and Management during the academic session 2002-2003.

### New intake in 2002-2003

In the academic year 2002-2003, 2050 fresh students admitted in various disciplines. The branch-wise backup is given below.

A. Course	Full-Time	Part-Time
Bachelor of Engineering	540	-
Bachelor of Architecture	17	-
Bachelor of Pharmacy	31	-
B.C.A.	402	-
B.B.A.	340	-
M.B.A.	129	16
M.C.A	245	7
M.E.	49	6
M.Tech.	48	
M.Sc.	57	-
M. Pharmacy	23	-
Bachelor of Hotel Management Tech.	27	
Diploma Engg.	107	
<b>Total</b>	<b>2035</b>	<b>25</b>
<b>Grand Total</b>	<b>- 2060</b>	

### B. Enrollment in Ph. D Programme -

Forty Seven new Scholars registered for the Ph. D Programme in the area of Engineering, Science, Pharmacy and Management during session 2002-2003. The details are given below.

S. No.	Name of Scholars	Title of Thesis
1.	Sri. R.K. Bhattacharya	"The Role of Indian Women in the Development a sus-Community, Past, Present and Future"
2.	Mr. P. Vipin Prasad	"Studies on some Herbal Drugs using Modern Analytical Method"

- |     |                       |   |
|-----|-----------------------|---|
| 3.  | Mr. Prakash Lal       | "Kinetics based Geometric Modeling for the integration of Free from Surface Design and tool path Generation. A study of Methodological and Futuristic extensions" |
| 4.  | Sri Rajiv Ranjan      | "Modeling & Simulation of Soft-Powder processing"   |
| 5.  | Sri Deepak Srivastava | "GIS & Remote Sensing Technology Application in Feasibility study for Bio-mass gasifier small Power Plants"   |
| 6.  | Sri V.S. Rathore      | "Assessment of water Bearing patented of Burid channels in North eastern Rajasthan. A case study of Arcg Buried Channels using Remote Sensing Technique"          |
| 7.  | Sri Gautam Kumar      | "Land evaluation and Watershed Management For Jumar River Using Remote Sensing and GIS Technology"  |
| 8.  | Sri Dayanand Deen     | "Sensors & Micro-con Troller based system for Machine condition and powered support momtoring for longwall mine"  |
| 9.  | Sri Ajay Ruhela       | "On line roll crown (profile) and Electricity measurement in the process of flat rolling & direct measurement Technique"  |
| 10. | Ms. Swati Ruhela      | "Modelling of thunder bolt at lower Himalays- A acoustic based Approach"  |
| 11. | Mr. Bidyut Chatterjee | "Risk Assurance and Impact of Atmosphere Electricity"   |
| 12. | Sri Manish Kumar Jha  | "Survival Telecommunication Network studying and Application of AI Technique"   |

- |     |                         |  |
|-----|-------------------------|--|
| 13. | Mr. Shantanu Das        | "Manufacturing of New Performing Assets in Indian Public Sector Banks with special emphasis on the Jharkhand State"                                    |
| 14. | Mr. S.N. Singh          | "A study of the influencing factor in Management of Technology in Indian with special reference to Rolling Mill Technology in Integrated Steel Plants" |
| 15. | Anand Kumar             | "A study of Employee motivation Attitude & commitment in Globalisation Scenario in Indian organization"  |
| 16. | Mr. Sandeep Nath Sahdeo | "Customer Relationship Management with special reference to two wheelers market in Jharkhand"  |
| 17. | Mr. Sudip Das           | "Investigation of flow field characteristics of supersonic intakes"  |
| 18. | Mr. Rajeev Kumar        | "Mechano - Emission characteristics of Metallic Alloys"  |
| 19. | Mr. Naveen Agarwal      | "Influence of crack propagation on Mechano- Emission Characteristics of Materials"   |
| 20. | Mr. S.G. Rakesh         | "Studies on the Crowd Movement in pedestrian Paths and in Panic situation using Non Linear shock Wave Dynamics"  |
| 21. | Mr. Prasanna Kr. Singh  | "Achieving compotitives Edge Through low cost Manufacturing Automotation"  |



22. Mr. K. Bose "Testing & Measurement of Physical Parameters of using Holographic Interferometry"
23. Mr. R. K. Gangopadhyay "Studies on Management practices with respect to Safety, Health and Environment aspects in Chemical Industries"
24. Sri Arup Choudhary "Re-cycling of flexible & Milk pouches"
25. Ms. Rupa Mahanti "Simulation and Management of Environment Pollution Foundry Industries"
26. Mr. Sandeep Narayan "Studies on Mode-mole Interference in Binefringent Optical Fibers and its Application in Distributed sensing System"
27. Mrs. Vineeta Arora "Investigation the Relationship Between the Raw Coal Characteristics and Effluent Quality in a given Beneficiation Process and Developing A Cause-Effect paradigm."
28. Sri K.K. Pande "Evaluaition of Existing Health Services & Possible Management for Uttranchal – A GIS Approach."
29. Sri Debajyoti Biswas "Influence of Tribal Settlement Pattern for Future Growth of Tribal Dominated Urban Areas: A Case Study: (Jharkhand) Ranchi"
30. Mr. Pradeep Chhawchharia "Switched Capacitor DC/DC Convertors for Application n low power mobile communication devices-An investigation into Design and Simulation Methodologies"

- |     |                           |  |
|-----|---------------------------|--|
| 31. | Mr. Sandeep Singh Solanki | "Optimization of Speech Processing Techniques"   |
| 32. | Mr. Ashutosh Mishra       | "Creating an Information sharing Network for Agricultural Marketing: A need for Socio Economic Development of Jharkhand"                           |
| 33. | Mr. Jayanta Biswas        | "Supply Chain Management in Indian Carbon Black Industry and Relevant HB Strategy"   |
| 34. | Mr. Manoj Mishra          | "Investigation on Propagation Characteristics of Dispersion Management Breathers in Long"  |
| 35. | Mr. Somendu Jana          | "Light matter interactions in media possessing higher order nonlinearity"  |
| 36. | Ms. Vijay Kaxnu Dayal     | "Study of some High Temperature Superconducting samples"   |
| 37. | Ms. Prabjot Kaur          | "Fuzzy approach to multicriteria making problems"  |
| 38. | Mr. Pratik Biswas         | "Complexity of sequential parallel shortest path algorithms"   |
| 39. | Mr. Sandip Dutta          | "Image Compression in Wavelet domain in field of Biomedical images"  |
| 40. | Ms. Srilakshmi Budduluru  | "Investigations on the Comparative Electromagnetic Radiation Characteristics during Crack Propagation & Fracture in Face-centered cubic materials" |
| 41. | Mr. Rupam Kr. Dwivedi     | "Some Aspects of Mechano-Emission characteristics during crack propagation & Fracture in Iron-Silicon Alloys"                                      |

42.	Mr. Amitava Ray	"Study on the influence of micro structural characteristics on the spelling behaviour and life of hot and cold strip mill work rolls used in integrated steel plants"
43.	Mrs. Rashmi Kulshreshtha	"Determination of Aflatoxin in Herbal Drugs using High performance Thin Layer Chromatography"
44.	Ms. Anima Mishra	"Studies on Wound Healing Herbs of Ethanole Extracts of the Flowers Barks & Seeds of Doctoral Committee"
45.	Ms. Sanjita Das	"The Phytopharmacological Studies of Ethanole Extracts of the Flowers Barks & Seeds of Doctoral Committee"
46.	Niraj Mishra	Effectiveness of Supply Chain management in Manufacturing /molustries – A Case Shortly of Usha Martin/Industries Limited"
47.	Amilava Ray	"Study on the influence of micro Structural Characteristics on the Spelling behaviour and life of not and cold Stripes incll Work rolls used in integrated steel plants"

#### **A. Ph.D. Thesis Submission**

The following scholars have submitted the Ph.D. Thesis for evaluation during the year 2002-2003.

<b>S. No.</b>	<b>Name of Scholars</b>	<b>Title of Thesis</b>
1.	Shri Rabindra Prasad Sharma	"Computer Aided Analysis of Three-Dimensional Natural Convection in Porous Media."

2.	Shri Arbind Kumar	"Investigation on the Stress-Induced Electromagnetic and Magnetic Effects in Metallic Materials"
3.	Shri Bhaskar Karn	"Fuzzy Information Retrieval"
4.	Shri Debangshu Chakraborty	"Leadership and Motivation A Critique Western and Eastern Thoughts."
5.	Shri Rajendra Prasad	"Quality System in Research and Development."
6.	Ms. Papiya Mitra Mazumder	"Pharmaceutical and Toxicological Studies of Some Mycotoxins in Animals."
7.	Shri Ajay Srivastava	"Effect of Subsurface Features on the Geomorphology of Genetic Plan: An Integrated Approach Using Remote Sensing and Geographic Information System."

### **Convocation, Results, Degree/Diploma Awarded**

Upon the recommendation of the Board, the following scholars who have cleared the programme during 2002-2003 were awarded Degree/Diploma in the convocation 2002-2003 held in February 2003.

#### **A. Ph.D. Degrees :**

##### **S. No. Name of Scholars**

##### **Title of Thesis**

1.	Sri Balram Singh	"A Theoretical Study of Magneto-fluid Dynamics Flows."
2.	Sri Indra Bhushan Singh	"Role of Development Agencies in Socio- Economics Development of Tribes of Chhotangpur Region of Bihar- A case Study of KRIBP"
3.	Sri P.R.P. Verma	"Evaluation of Leucaena Leucocephala (Lam.)de Wide Seed Gum as a Pharmaceutical Adjuvant".

**B. Other Degrees/Diplomas :**  
**Course & Branch Cumulative**

		<u>Class Obtained</u>			
		I	II	Total	
<b>I. Post Graduate Degees :</b>					
Total					
Master of Engineering	: Civil	1	1	2	
	: S.E. & R.	1	-	1	
	: A.M.S	1	-	1	
Master of Comp. App.	: M.C.A.	106	47	153	
Master of Business Admn.	: M.B.A.	33	29	62	
Master of Science	: B.M.I.	8	7	15	
	: Information Science	12	7	19	
	: Information Technology	20	2	22	
	: Electronics & Telecom.	13	1	14	
M. Tech.	: Computer Science	45	19	64	
	: Remote Sensing	2	-	2	
		<u>242</u>	<u>113</u>	<u>355</u>	355

**II. Under Graduate Degrees :**

		ID	I	II	Total	
Bachelor of Engineering	: Mechanical	20	32	-	52	
	: E.E.E.	33	39	-	72	
	: E.C.E.	40	37	-	77	
	: Civil	1	9	1	11	
	: Computer Sc.	43	18	-	61	
	: Production	2	11	-	13	
	: Polymer	1	7	-	8	
Bachelor of Pharm. Sc.	: B.Pharm.	16	14	-	30	
Bachelor of Architecture	: B. Arch.	12	5	-	17	
Bachelor of Science	: Computer	3	1	-	4	
	: Electronics	3	4	1	7	
	: B.C.A.	176	146	-	322	
	: B.B.A.	8	16	-	24	
		<u>358</u>	<u>339</u>	<u>01</u>	<u>698</u>	698

	<b>ID</b>	<b>I</b>	<b>Total</b>	
Bachelor of Technology : Mechanical	22	14	36	
: Electrical	17	27	44	
: Civil	5	14	19	
	<b>44</b>	<b>55</b>	<b>99</b>	<b>99</b>

### III. Post Graduate Diploma :

	<b>I</b>	<b>II</b>	<b>Total</b>	
: Civil Engg.	2	2	4	
: Management	2	2	4	<b>08</b>
: Computer				
: Applications	4	3	07	<b>07</b>
	<b>8</b>	<b>7</b>	<b>15</b>	<b>15</b>

**Grand Total : 1167**

### Faculty Positions:

Against the sanctioned strength of 213 Faculty positions, 189 are filled with 24 vacancies. The break-up is as follows :

<b>Category</b>	<b>Sanctioned</b>	<b>In Strength</b>	<b>Vacancies</b>
Professor	57	36	21
Reader	62	53	9
Senior Lecturer/ Lecturer/ Associate lecturer	94	100	- 6

\* \* \*



## NEW APPOINTMENTS DURING 2002-2003

S.No.	Name	Designation	Department
1.	Shri Sanjay Kr. Sinha	Assoc. Lecturer	Applied Physics
2.	Sri Ashutosh Gupta	Lecturer	Computer Science
3.	Sri Nand Kishore Mukherjee	Associate Lecturer	Univ. Polytechnic
4.	Sri Amrita Pritam	Lecturer	Computer Science
5.	Ms. G.S. Vijaya	Lecturer	Management
6.	Md. Iftikher Ahmed	Lecturer	Management
7.	Sri Rajeev Kumar	Lecturer	Mechanical Engg.
8.	Ms. vijaya Laxmi	Lecturer	E.E.E.
9.	Ms. Jyotshna S. Sahu	Lecturer	E.E.E.
10.	Sri Vishal Anand	Lecturer	Computer Science
11.	Sri Vijay Agarwal	Lecturer	Management
12.	Sri Jyoti Kumar Chandal	Lecturer	Management
13.	Mr. Narendra Kr. Sinha	Lecturer	Computer Science
14.	Sri Prabal Dutta	Assoc. Lecturer	Applied Mathematics
15.	Sri Subrata Kr. Paul	Lecturer	Architecture
16.	Sri Awdhesh Oraon	Lecturer	Pharm. Science
17.	Sri Kumar Rajnish	Assoc. Lecturer	Computer Science
18.	Ms. Swagata Dutta	Assoc. Lecturer	Computer Science
19.	Ms. Mahua Mukherjee	Lecturer	Architecture
20.	Ms. Itu Snigdh	Lecturer (SC)	Com. Sci. & Engg.
21.	Sri Ritesh Kr. Singh	Lecturer (SC)	Production Engg.
22.	Sri Ratan Kr. Paul	Lecturer	Applied Physics
23.	Ms. Uravashi Singh	Lecturer (SC)	Comp. Sci. & Engg.
24.	Ms. Uma Ghulati	Lecturer (SC)	Management
25.	Mr. Jeeot Singh	Lecturer (SC)	Mech. Engg.
26.	Ms. Rashmi Rekha Sahu	Lecturer (SC)	Mech. Engg.
27.	Mr. Alok Kumar	Lecturer (CS)	Applied Mechanics
28.	Mr. Vishal Singh Chauhan	Lecturer (CS)	Mech. Engg.

S.No.	Name	Designation	Department
29.	Mr. Roshan Prasad	Assoc. Lecturer	Management
30.	Dr. Ratan Kr. Dey	Lecturer (SC)	Applied Chemistry
31.	Mr. Indrajit Sinha	Lecturer (SC)	Applied Chemistry
32.	Ms. Ruma Tripathi	Lecturer (SC)	Management
33.	Mr. Arun Kr. Sharma	Lecturer (SC)	Applied Physics
34.	Sri Muthukumaran	Lecturer (SC)	Production Engg.
35.	Mr. Sripal Vijayvargiya	Lecturer (SC)	Comp. Sc. & Engg.
36.	Mr. Sarad Chandra Srivastava	Lecturer (SC)	Production Engg.
37.	Mr. Tanmoy Kr. Banerjee	Lecturer (SC)	Management
38.	Sri Prem Prakash	Lecturer (SC)	E.E.E.
39.	Mr. Harmeet Singh	Assoc. Lecturer	Bio-Technology
40.	Mr. Vijay Pandey	Lecturer (SC)	Production Engg.
41.	Mr. Ranjit Ranjan	Lecturer (SC)	Mech. Engg.
42.	Mr. Subhojit Ghosh	Lecturer (SC)	E.E.E.
43.	Mr. Binod kr. Pandey	Lecturer (SC)	E.E.E.
44.	Dr. Pratyush Shukla	Lecturer (SC)	Bio-Technology
45.	Sri Ashish Dahiya	Assoc. Lecturer	H.M.C.T.
46.	Sri A.S.V. Ravikanth	Lecturer (SC)	Appl. Maths

## SUPERANNUATION DURING 2002-2003

The following members of faculty have retired from service on attaining the age of superannuation on the dates noted below.

S.No.	Name	Designation	Department
1.	Prof. K.P. Singh	Professor	Mechanical
2.	Dr. R.C. Prasad	Professor	E.E.E.
3.	Prof. P.K. Sinha	Reader	E.E.E.
4.	Dr. B.L. Gupta	Professor	Applied Chemistry
5.	Prof. Awadh Prasad	Professor	Mechanical Engg.
6.	Prof. B.D. Chaubey	Reader	Applied Chemistry
7.	Prof. B.K. Verma	Professor	Mechanical Engg.

---

**ACTIVITIES  
OF  
ACADEMIC DEPARTMENTS**

---



# DEPARTMENT OF ARCHITECTURE

The Department was established in the year 1993 and offers a 5 year degree course in Architecture. The fifth batch of students (1997 batch) graduated this year and the students have found gainful employment besides those who have opted for higher studies in India and USA. 25 students of 1998 batch are expected to graduate in May' 02.

The Department in the current year has established an exclusive Autocad lab. The lab is equipped with various other 3D drawing software and state of the art Cadd plotter.

Besides the above, the Department is also establishing a Building Centre with financial support from HUDCO. The center will promote use of Cost Effective & environment Friendly Technologies for Buildings construction through various training programmes.

**Degree/Diploma Offered :** B. Arc. (5 year course in Architecture).

**Faculty Position :** Readers - 4, Lecturers – 3, Associate Lecturer - 1

**Number of Student enrolled:** Undergraduate – 102.

**Academic Innovations, Research & Development activities.**

## A. Ongoing Project :

Project Title	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
The Millennium Package for Architectural Education – a Through Recast of the Undergraduate Scope	AICTE	March 13, 2001	4 Lakhs	3 Years

## B. Project sanctioned during the year 2002-2003 :

Project Title	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
Prototype designs of schools of Autistic pupil	AICTE	March 10, 2003	1.50 Lakhs	2 Years

## C. Project submitted during the year 2002-2003.

1. Prototype design of schools for Autistic pupil : AICTE
2. Participatory Delivery of Built –spaces for Social Infrastructure : AICTE

## D. Seminar/Conference/Short term course conducted by the Department. Number of delegates, Name of dignitaries.

- ◆ One day Workshop on "Appropriate and Cost-Effective Technologies for housing construction", 30<sup>th</sup> August 2002 : Dignitary : Mrs. Gayatri Ratnam, Fellow, HSML, HUDCO, New Delhi.

- ◆ One day Workshop on “Stained Glass”, 22<sup>nd</sup> January 2003 : Dignitary : Mr. Anil Mehta, Ranchi.
- ◆ One day Workshop on “Fire Fighting services”, 26<sup>th</sup> February 2003: M/S Eversafe Marketing India (Pvt.) Ltd.

## **E. Publications by Faculty :**

### ***International***

1. Prof. Ajay Khare : Journal Art, Volume 6, February, 2003. published by International Centre for Studies in Bengal Art, Dhaka. Paper titled Conservation Aspects related with Terracotta Temples of Bengal. Pp- 193-200.

### ***National***

1. Prof. Ajay Khare : Enabling the Craft Communities of India to conserve the Built Heritage published in the proceedings of ‘Conference on Strategy and Methodology for Conservation of Heritage Buildings and Monuments in India ’ organized by CBRI, Roorkee on 4-5<sup>th</sup> April, 2002.
2. Manjari Chakraborty: ‘The Fragrant Landscape’, Journal of Landscape Architecture, Vol. 2, 2002.
3. Manjari Chakraborty : ‘Temporary Architecture, Permanent Impressions – A Fleeting chronicle of Kolkata Puja Pandals’, Architecture + Design, May 2002.

## **F. Conferences/Seminars attended :**

1. Sri Ajay Khare : ‘Fifth International Congress of Bengal Art’ held at Dhaka, Bangladesh on 4-8<sup>th</sup> February, 2003 organized by Bangladesh National Museum. Presented a paper titled ‘Temples of the Pala Period on the Chhotanagpur plateau which was later accepted for publication.
2. Sri Ajay Khare : ‘ National Seminar on Heritage Conservation and Development’ held at Jaipur on 10-12<sup>th</sup> May, 2003 organized by Avas Vikas Limited and Aayojan School of Architecture, Jaipur.
3. Mrs. Rachna Khare : ‘Conservation of Built Heritage (Short term course), R.V. College, Bangalore, 5<sup>th</sup> March to 11<sup>th</sup> March, 2003.
4. Sri N. R. Mandal : ‘Capacity Building of Project Managers of Building Centers’, HSMI, HUDCO New Delhi, 08-19 July 2002 (QIP).

\* \* \*

# DEPARTMENT OF APPLIED CHEMISTRY

The Department is engaged in teaching of different undergraduate and graduate Courses. The Department is also engaged in analysis and testing of various substances and consultancy work of different organizations. Dr. P.K. Srivastava presented a research paper entitled "Faraday's Law and Electrochemical Machining: An Introspections" in an International conference on "Advance manufacturing Technology" VJIT Mumbai during 29-31 January, 2003. He also participated in an International Conference on Advances in solid propellant Technology organized by the Department of Space Engineering & Rocketry, B.I.T., during November 12-13, 2002.

**Degree/Diploma offered :** The department participates in teaching the courses in area of chemistry/applied chemistry in all undergraduate and postgraduate programmes.

**Faculty position:** Professor- 1, Readers – 4, Lecturers-3, Research Associate cum Tuter-1

**Academic innovation research and diploma activities :**

## A. On going project : -

1. Dr. P.K. Srivastava Principal Investigator, a UGC major research project entitled "Envolution of sequential oscillation in a single organic substrate in a chemical system" costing Rs. 2.08 lakhs, 2001 is under progress.
2. Dr. P.K. Srivastava Co-Investigator, UGC major research project entitled "Testing and validity of Faradey's law, Ohm's law and optimizations of machining parameter of newly emerging materials" of Rs. 5.06 lakhs 2003, is under progress.
3. Dr. D. Tiwary, Principal Investigator, UGC major research project entitled "Removal of toxic metal ions from water effluent by inorganic particulate" costing of Rs. 2.08 lakhs, 2001 is under progress.

## B. Research scholar working for their Ph. D. degree :

1. Mrs. Vineeta Arora, "Investigation the Relationship between Raw Coal, Coal characteristics and Effluent Quality on a Given Beneficiation Process and Developing a Cause Effect Paradigm".
2. Mr. S. Kumar, "Impact of Coal Mining Activities on Ground and Surface water Resources in Chotanagpur Region with special Reference to Rajrappa OCM.
3. Mr. S. S. Majhi, "Synthesis and Characterization of High Temperature Polymers".
4. Mr. M.K. Mukul, "Synthesis and Characterization of High Temperature Aramides".
5. Ms. Lakshmikanta, "Synthesis of some dye based polymers".
6. Ms. Shashi Kiran Thakur "Removal of toxic metal ions from water effluents by inorganic particulates" under UGC project.

7. Mr. Narendra Yadav "Secquential oscillatiol in a single organic substrate in a chemical system" under UGC project.

### **C. Publication in journals During current year**

1. P.K. Srivastava, and M.K. Mukul, "Pyrolytic synthesis of polyglyceryldiacrylate" J. Chemtracks, 2,122, 31-35. 2000.
2. P.K. Srivastava, and M.K. Mukul, "Synthesis and Characterization of Polygceryl Triacrylate", Int. Res. J. Mat. Sci. Vol 1 No 1, 2003.
3. P.K. Srivastava & S.S. Majhi, "Color Bands Polymer inMetharcylic Acid Polymerization" J. Indian Chem. Soc. Vol. 80. May 2003.
4. I. Sinha and R.K. Mandal "Simulating isothermal crystallization during phase seperation of oxides phases" Mat. Sci. 37 (24) : 5215 Dec.
5. S. Samal, S. Achary, R.K. Dey, A.R. Ray. Synthesis, Characterization and metal in uptake studies of chelating resins derived from formaldehyde/furfuraldehyde condensed phenolic schiff base of 4,4'- diaminodiphenylmethane and o-Hderoxycetaphenone, J.Applied Polymer Science, 88, 570 (2003).
6. S. Samal, S. Acharya, R.K. Dey, & A.R. Ray. Synthesis and metal ion uptake studies of chelating resins derived from formaldelryde/furfuraldehyde condensed phenolic Schiff base of 4,4'- diamisodiphenyl ether and o-Hydroxycetaphenone. Talanta. 57 (6), 1075 (2002).

### **D. Abstracts published in conferences**

1. P.K. Srivastava "Optically oscillating intermediate in uncatalyzed bromate driven oscillator. Proc. 39<sup>th</sup> Annual convention of chemist, Nagarjuna Nagar, Dec. 22-26, 2002, Phy Op-49, Page 131.
2. I. Sinha, P.K, De and S. Kumar, Effect of different heat treatment schedules on microcrack generation during secondary processing of 2124 Al alloy Sic composites. Proc. of LMCSSN during October 22-23, 2002, Trevendram.

\* \* \*



# DEPARTMENT OF APPLIED MATHEMATICS

Department of Applied Mathematics is one of the oldest department of the Institute. The Department is teaching all mathematics courses offered in different disciplines of the Institute. The Department has launched its own PG courses entitled 'M. Tech in Scientific Computing' from the session 2002. The course has been approved by AICTE, New Delhi.

The faculty members of the Department are actively engaged in research. The areas where research is in progress are fluid mechanics, fuzzy optimization, parallel computing, mathematical modelling, numerical analysis, seismology. The Department will soon start research activities in emerging areas of atmospheric and oceanic sciences. The Department organises seminars on the topics of current interest, workshops at least once a year.

**Degree/Diploma Offered :** M. Tech in Scientific Computing

**Faculty Positions :** Professor –1, Reader – 3, Lecturers –1, Assoc. Lecturer – 1, R.A. Cum Tutor - 1

**Number of Students Enrolled/Registered :** M. Tech - 5

**Academic Innovation, Research and Development Activities :**

## A. Ongoing Projects

1. Dr. N.C. Mahanti (PI), Costal Dispersion model, UGC, 30.3.2001, Rs. 1, 75, 560/, 3 years.
2. Dr. S.K. Chakraborty (PI), studies of evaluation of optimum depth from immediate roof in a mine, UGC, 1.3.2002, Rs. 2,75, 560/-, 3 years.
3. Dr. Rakesh Verma (PI), Fuzzy approach to traffic and transportation management systems, UGC, 1.3. 2002, Rs. 97, 560/-, 3 years.
4. Dr. S.K. Jain (PI), Transient analysis of laminated composite plates by FEM, AICTE, 2001, 3, years.
5. Dr. S.K. Jain (PI), Vibration of non-uniform sandwich plates, UGC, 2001, 3 years.

## B. Project Sanctioned During the Year 2002-2003

1. Dr. S.K. Chakraborty (PI), studies of evaluation of optimum depth from immediate roof in a mine, UGC, 1.3.2002, Rs. 2,75, 560/-, 3 years.
2. Dr. Rakesh Verma (PI), Fuzzy approach to traffic and transportation management systems, UGC, 1.3. 2002, Rs. 97, 560/-, 3 years.

## C. Seminar/Conference Conducted :

1. National seminar on prediction of meteorological events a mathematical approach, March 25-26, 2003. No of delegates – 30. Dignitaries participated in seminar : 1. Dr. P.C. Joshi, SAC, Ahmadabad, 2. Dr. S.K. Pal, SAC, Ahmadabad, 3. Dr. P. Mukhopadhyay, IITM, Pune.

## **D. Publication by Faculty :**

### **1. International Journals :**

- (i) A. Pradhan, S.K. Samal, N.C. Mahanti Influence of anisotropy on the Love waves in a self-reinforced medium, International J. of Science and Engineering, Tamkang, China, Vol. 3, 2003.

### **2. National Journal :**

- (i) P.K. Mishra, Boolean function manipulating for parallel computers, News Bulletein of Calcutta mathematical society, Kolkata 26, 11-14, 2003.
- (ii) A. Pradhan, S.K. Samal and N.C. Mahanti, Shear waves in a fluid saturated elastic plate, Sadhana, Vol. 27, Part 6, 595-604, 2002.
- (iii) S.K. Samal, Propagation of shear waves in a fluid saturated porous layer under initial stress, Acta Cienica Indica, Vol, XXVII M, No-3, 423-430 2002.

## **E. Seminar/Symposium/Short term course attended by the faculty members:**

- 1. S.K. Samal, SERC School on Aviation Meteorology, Coimbtore, 16 Dec, 2003-2004 Jan. 03.
- 2. P.K. Mishra, 72<sup>nd</sup> Annual session of the National Academy of Sciences, Nehu, Shilong, Oct 5-7, 2002.
- 3. P.K. Mishra, 6<sup>th</sup> International conference on high performance computing, Bangalore, Dec 16-19, 2002.
- 4. P.K. Mishra, High performance computing and scientific application, Bangalore, Dec. 20, 2002.

\* \* \*

# DEPARTMENT OF APPLIED MECHANICS

The Department has been involved in Academic Research and Industry consultancy in the broad area of Computer Aided Analysis and competitive product designs. Apart from participating in teaching programmes for Under-Graduates in engineering, Architecture and Diploma Students, the Department has established an excellent infrastructure for imparting several Post-Graduate Programmes.

Presently, the Department is conducting Computer Aided Analysis and Design (CAAD) M.E. Post Graduate Programme. In Addition to the essential use of Institutes existing Central Laboratory facilities like CAD Lab and PARAM 10000 Computer, the Department has developed a well-equipped small Departmental Computer Laboratory. A Seminar room that can accommodate around 30 people has been added to the Department keeping pace with the latest technological advancement. The Department is in the process of establishing necessary infrastructure of educational research and training and already has established a good rapport with SAIL, MECON, CMPDI, ESCORTS, SHRI RAM BALL BEARING, TELCO & TISCO etc. Third batch of Post-Graduate ME students (CAAD) has successfully completed their degree programme. All the students of this batch have been offered different industrial research problems in their final semester projects, which they have timely and successfully completed.

A part from conducting regular courses for under graduate and post graduate students, the department is actively interacting with the other technical institutes, various industries and research organization to establish an excellent infrastructure for carrying out R & D work for the first graduate curriculum, Ph.D programmes, sponsored research and consultancy.

**Degree/Diploma offered :** M.E (CAAD).

**Faculty position :** Professors – 2, Reader- 1, Lecturers-4.

**Number of student enrolled :** M.E. (CAAD) – 3, all the students of undergraduate registered for applied mechanics course.

**Academic Innovations, Research & Development activities.**

## A. Publication

### *International Journals*

1. Rampal Singh, "Free Asymmetric Transverse Vibration of Parabolically Varying Thickness Polar Orthotropic Annular Plate With Flexible Edge Conditions", Tamkang Journal of Science & Engineering, Taiwan.
2. Rampal Singh, "Use of Chebyshev Points IN Analysis of Plate Vibrations", Journal of Vibration and Acoustics ASME transactions USA.

3. Rajesh Ranjan, "An Upper Bound solution for Closed Die Forging of Sintered Preform", Tamkang Journal of science & engineering, Taiwan.
4. Rajesh Ranjan, "Highe speed Forging of Solid Power Polygonal Discs", Tamkang Journal of Science & Engineering, Taiwan.
5. Abhay Kumar, "Complexity of of VLSI Using Optimal Discrete Fourier Ttransform", Tamkang Journal of Mathematics. Tamkang University, Tamsui, Taiwan-25137, Republic of China.
6. Abhay Kumar, "Systolic Simulation of VLSI Algorithms", International Journal of Supper Computing, U.S.A.

### ***National Journals***

1. Rampal Singh, "Asymmetric Vibration of Non-Uniform Polar Orthotropic Annular Plate With Edges Elastically Restrained-A Particular Case", The Institution of Engineers (India).
2. Rampal Singh, "Study of Asymmetric Transverse Vibration of Linearly Varying Thickness", Journal of structural engineering, India.
3. Rajesh Ranjan, "Cold Forging of sintered polygonal Disc with Bulging of sides", Indian Journal of Engineering & material Science, New Delhi.
4. Rajesh Ranjan, "An Upper bound solution for closed Die Forging of Hexagonal Shapes", Indian Academy of Science, Bangalore.
5. Rajesh Ranjan, "Theoretical studies of an Axisymmetric compound Flow Problem of Sintered Preform", Indian Journal of Engineering & Material Sciences, New Delhi.
6. Rajesh Ranjan, "Upper Bound solution for Flow Through conical converging Dies of sinterd Preform", Indian Academy of Sciences, Bangalore.
7. Rajesh Ranjan, "Direct and Indirect Extrusion of sintered perform at the end of stroke", Indian Academy of Sciences, Bangalore.
8. Rajesh Ranjan, "An upper Bound solution for closed die sinter forging of Hexagonal shapes at High speed", Indian Academy of Science, Bangalore.

### **B. Seminar/Symposium/Short term course attended :**

#### ***International Conference***

1. Abhay Kumar, "optimal Discrete Fourier Transform In VLSI For High Speed Computing", ITPC 2003, Kathmandu, NEPAL.

#### ***National Conference***

1. Rajesh Ranjan, "P/M Products: The Winning Challenge", National Conference On Value Engineering B.I.T. Mesra, Ranchi.

2. Rajesh Ranjan, "Study of Market Logistic: Special Reference to Usha Martin Ltd.", National Conference On Value Engineering B.I.T. Mesra, Ranchi.
3. Rajesh Ranjan, "Mechanics of Asymmetric coining of sintered perform", IST AM, B.I.T. Mesra, Ranchi.
4. Rajesh Ranjan, "Forging of Sintered Polygonal Disc", CARTM, Kalyani Govt. Engg. College, Naids, W.B.
5. Rajiv Ranjan, "Value analysis from the prospective of competitive advantage & its application to Industry: A case study of motherboard" National Conference On Value Engineering B.I.T. Mesra, Ranchi.
6. Rajiv Ranjan, "Value Engineering & its application to Industry: A case study of ceiling fan."
7. Rajiv Ranjan, "Value Engineering & its application to Educational Institution: A case study of time analysis".
8. Rajiv Ranjan, "PM (Powder Metallurgy) forging finds a better space among conventional Manufacturing technique: A value facturing approach".
9. Rajiv Ranjan, Productivity improvement of a compressor Assembly plant layout: Value additions by Assembly line Balancing".
10. Rajiv Ranjan, A case of VE in Bicycle design.
11. Rajiv Ranjan, The role of frictional conditions during sinter forming." Journal of MT Today Bangalore.
12. Rajiv Ranjan, An economic Appraisal of Rural artifacts manufacturing units in Jharkhand state MT Today Bangalore.
13. Rajiv Ranjan, Simulation and Modeling of soft powder pressing." 48<sup>th</sup> ISTAM, BIT, Mesra, Ranchi.
14. Alok Kumar, "Computer aided Analysis of the Dome of Blast Furnace", 20<sup>th</sup> AIMTDR Conference BI, Mesra, Ranchi.
15. Abhay Kumar, "Value Engineering From The Prospective of Competitive Advantage- A Case Study of Educational Institution", National Conference On Value Engineering B.I.T. Mesra, Ranchi.

\* \* \*

## DEPARTMENT OF APPLIED PHYSICS

The Department has several modern laboratory and computational facilities with several software such as MATLAB, Maple etc., which are used for research and training at the PG and UG levels. The Department has state of the art laboratory for plasma material processing. The Plasma laboratory possesses computerized anodic vacuum arc deposition unit with data acquisition system (Keithley Instruments, USA). Laboratories are equipped with plasma arc generator (Hypertherm, USA), monochromator (Jobin Yvon, France), nitrogen laser and ruby lasers (Raytheon, USA).

The department has a real time holography laboratory for nondestructive testing of materials. To characterize materials it has atomic absorption spectrophotometer (Shimadzu, AAS-650, Japan) and Mossbauer spectrometer (Ranger Scientific Incorporation, USA). It has several He-Ne lasers, PMT (RCA, USA & Hamamatsu, Japan) and detectors.

Faculty members of the department have been actively pursuing R & D activities in the field of Plasma coating, Thermal plasma applications for material processing, synthesis and characterization of new materials, high temperature superconductor, photonics, optical communication, nondestructive testing of materials using real time holography and fiber composite materials. The department is also having basic fabricating and testing facilities for fiber composite materials. At present there are two UGC, two DST and two AICTE projects running in the department. Three Junior Research Fellows and one Project fellow are working in these projects and six scholars are registered for Ph.D.

The Department has recently started M. Tech in New Materials and Processing Technology.

The Department is planning to offer M.Sc in Applied Physics from 2003-2004 session.

Degree/Diploma Offered :

- (i) M. Tech. (New Materials and Processing Technologies) From 2003.
- (ii) Physics-I and Physics –II courses to B.E. (All branches) and
- (iii) Fiber Optics Instrumentation in Medicine paper to B.M.I.

**Faculty Position :** Professors -4, Readers -3, Senior Lecturers - 2, Lecturers - 2, Associate Lecturer – 2.

Numbers of Students Enrolled/Registered with Department Course wise/and Semester wise as on Feb. 2003.

- (i) M. Tech. (New Materials and Processing Technologies) : 5

### Academic Innovations, Research & Development Activities :

- ◆ The research activities in the department has resulted in 09 International Journal, - 4 National Journal, 10 National an International conference papers and 01 book published during 2002-2003. (List is given under serial No. 14).
- ◆ The Department is organizing The National Symposium on Plasma Science & Technology (PLASMA-2003) during Dec. 08-11, 2003.
- ◆ Seminars by faculty members on contemporary academic and research topics are being held in the department once in a week. Experts from nearby Institutions are also invited to deliver lectures.
- ◆ Laboratory Developed/New Equipment Procured

### The department has developed the following laboratories/facilities :

1. University Polytechnic Physics laboratory.
2. Fabrication of high temperature super conducting samples of Bi-2223.
3. Holography Laboratory and Plasma diagnostics laboratory.
4. New experiments for B.E. students.
5. Data acquisition facility for process monitoring of thin film deposition.
6. Manual for physics –I Laboratory.
7. Optical Tomography technique for plasma are generator studies.

### A. Ongoing Projects :

Project Title	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
Investigation of Dispersion Managed Breathers in Long haul Optical Communication systems and Study the effects of Higher Order Nonlinear ties in All Optical Switching.	DST	9/4/02	Rs.1175520	3 Years
'High Pressure Investigations on Oxide Superconductors to Obtain Higher $T_c$ '.	UGC	2.3.02	3.825 Lac	3 Years
Some Basic Experiments on Dusty Plasma	DST	8.2.2002	5.85 Lac	3 Years
Testing and analysis of thin-sheet materials using real time holography.	AICTE	June 2000	6.00	3 Years

Project Title	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
Theoretical Investigation of Induced Nonlinear Optical Fiber Wave guides and devices.	UGC	1.7.2003	3.10 Lac	3 Years
Fatigue behavior of adhesively bonded fiber composite Aluminum joints.	AICTE	3.4.2003	3.80 Lac	2 Years

## B. Publication by the Faculty :

### *International Journals :*

Sl. No	Title of Research Paper	Author(s)	Name, Volume, Page of Journal & year
1.	Displacement and Deflection of Optical Beams by Nonlinear Planar Wave guide	S. Konar, P.K. Barhai	J. Nonlinear Optical Physics & Materials, Vol 12, No. 1 (2003) USA.
2	Resistivity Anisotropy of High $T_c$ mixing in various materials studied using SIMS,	S. Keshri	Pramana (Accepted). Electronic-loss induced ion beam mixing in various materials studied
3	Using SIMS,	S.K. Sinha-I, D.C.Kothari, A.K. Balmurugan, A.K. Tyagi, D. K. Kanjilal	Surf. Coat & Tech. 158-159 (2002) 214-218.
4	Effect of ion implantation on Corrosion resistance.	M. Vigen, S.K. Sinha-I D.C. Kothari, A.K. Khanna, A.K. Tyagi, D. Kanjilal	Surf. Coat & Tech. 158-159 (2002) 609-614
5	Modification of magnetic anisotropy in metallic glasses using high energy ion beam modification	K.V. Amurte, U.R. Matre, S.K. Sinha-I, D.C. Kothari, R. Nagrajan, D. Ranjilal	Pramana V58 (2002) 1093



- |   |  |   |                                 |
|---|--|---|---------------------------------|
| 6 | Observation of Sheath Phenomena in Presence of Oblique Magnetic Field, | B. Singha,<br>A. Sharma &<br>J. Chutia, Phys          | Plasmas, 9 (2),<br>(2002), 683. |
| 7 | Electron Inertial Delay Effect of Ion-acoustic Wave                    | U.Deka,<br>A. Sharma,<br>Ramprakash &<br>C.B. Dwivedi | In press Phys.<br>Plasmas.      |

Sl. No	Title of Research Paper	Author(s)	Name, Volume, Page of Journal & year
8	Comprehensible physical model in the space charge region	Ramprakash, A. Sharma, U.Deka, B. Singha, C.B. Dwivedi, S. Bujarbarua & J.C. Upadhaya	Indian J. Pure & Appl. Phys., 40, (2002), 24.
9	Preparation and Piezoelectric characterization of spray dried iron doped lead zirconate titanate ceramics.	S.K. Sinha-II, P.K. Barhai & R.K. Chaudhary	J. Ceram. Sc. & Tech. (U.K.) accepted.

### ***National Journals***

I. No	Title of Research Paper	Author(s)	Name, Volume, Page of Journal & year
1	"Concepts and Misconcepsts of Physics-V: The Engima of Friction".	Rakesh Popli	Bull. IAPT, Vol. 19 No.4 (2002) 112-117, 134.
2.	"Concepts and Misconcepsts of Physics –VI :gauss's Law : Its Novelty and Enigma".	Rakesh Popli	Bull. IAPT, Vol.19 No.7 (2002) 221-228.
3	"Concepts and Misconcepsts of Physics-VII : Ampere's Law: Some Paradoxical Features".	Rakesh Popli	Bull. IAPT, Vol.19. No.9 (2002) 309-315.

- |    |   |                               |  |
|----|---|-------------------------------|--|
| 4. | Architectural Application of glass fiber reinforced glass | A.K. Srivastava & Pawan Kumar | J. Institution of plastics. Engineers., India AR Vol. 82 (2002) 30-35. |
|----|---|-------------------------------|--|

### 3. Books/Monographs :

1. Rakesh Popli, "Ekal Vidyalaya Acharya Margadarshika", Ekal Vidyalaya Yojna, New Delhi (2002) in Hindi.

### C. Seminar/Symposium/Short term courses attended by faculty members :

1. Dr. P.K. Barhai delivered an Invited Talk on Plasma Processing for Surface Engineering at the 17<sup>th</sup> National Symposium on Plasma Science & Technology, (Plasma Science Society of India), held at Bharathiar University, Coimbatore during Dec. 16-19, 2002.
2. Dr. Rakesh Popli presented invited paper at National Science Communication Congress, Ranchi, Dec. 20-21, 2002.
3. Dr. S. Konar, attended Photinics 2002 at TIFR, Mumbai, Dec. 16-18, 2002.
4. Dr. (Mrs.) S. Keshri attended a Conference entitled "Recent Developments and Challenges in Phys; held in University of Hyderabad, Dec. 19-22, 2002.
5. Dr. J. T. Andrews attended International Conference on "PHOTONICS 2002" held at Tata Institute of Fundamental Research (TIFR), Mumbai during Dec. 16-17, 2002.
6. Dr. J.T. Andrews attended National Symposium on "PLASMA-2002" held at Bharatiar University, Coimbatore during Dec. 18-19, 2002.
7. Dr. R.K. Paul attended 17<sup>th</sup> National Symposium on Plasma Science and Technology, Plasma-2002, Coimbatore held during Dec. 16-19, 2002.
8. Dr. S. Medhekar attended International Conference on Photonics-2002 held at TIFR, Mumbai during 16-19 Dec. 2002.
9. Dr. Arun Sarma attended 17<sup>th</sup> National Symposium on Plasma Science & Technology, Bharatier University, Coimbatore, Dec. 16-19, 2002.
10. Dr. Arun Sarma attended 1<sup>st</sup> SERC School on Plasma Based Particle Accelerators, SINP Kolkata. Feb. 2-21, 2003.
11. Dr. S.K. Sinha-II attended National convention of Sc. & Tech. Of sensors at DRDO Delhi held during Oct 22-24, 2002.

#### **D. Award Nomination of faculty important organization**

1. Dr. P.K. Barhai has been elected as councilor of Plasma Science of India, IPR, Gandhinagar.
2. Dr. P.K. Barhai has been nominated as Adviser, National Advisory Committee Plasma Science Society of India.
3. Dr. R.K. Popli was nominated as UGC Expert of the visiting committee to Mumbai University.
4. Dr. A.K. Srivastava was nominated as UGC Expert of the visiting committee to Jadavpur University, Kolkata.
5. Dr. Arun Sarma was awarded the best paper award for his paper entitled "Observation of Ion-ion Instability in Dusty Plasma" at the 17<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2002) held at Bharatier University, Coimbatore, during Dec. 16-19, 2002.

\* \* \*

## DEPARTMENT OF BIO-MEDICAL INSTRUMENTATION

This programme of Bio-Medical Instrumentation aims at imparting in-depth knowledge to students with live exposure to the use of sophisticated instruments such as M.R.I., Spiral C.T. Scan, 3D Ultrasonography, Color Dopplers, Haemodialysis Machines, Angiography, Heart. Lung Machines, Computerized Neurodiagnostic Machines, L.E.T. etc. in modern hospitals. The programme is conducted in collaboration with the B.M. Birla Heart Research Centre, Kolkata and with assistance from Advanced Diagnostic Centre, Ranchi and Rajendra Institute of Medical Sciences, Ranchi.

The objective of the programme is to impart knowledge of all possible applications of Bio-Medical Instrumentation, its technology and its use and intelligent operation to assist physicians and surgeons. Current day technology is quite extensive in electronic equipment with processor control in all life saving equipments. The research projects are in progress in the area of Cardiology and Neurology funded by AICTE and UGC respectively.

Two G.E. Fund Scholarships amounting over Rs. 1.3 Lac each are being currently awarded to eligible candidates from the admitted student of M. Sc. Bio-Medical Instrumentation, to meet total expenses for five semesters.

**Degree Offered :** M. Sc. (B.M.I.)

**Faculty Position :** Associate Lecturers - 2

**Number of Student Enrolled/Registered with Department Semester wise :** M.Sc (B.M.I.) - 40

Academic Innovations, Research & Development activities.

### A. Ongoing Project :

Name of the Investigator	Title of the project	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
Dr. B.N. Das	Control of multifunction prosthesis through simulation of my electric signals.	UGC		2.775 lacs	
Dr. B.N. Das	Intelligent Monitoring System for Synoptic patients in Varied Postures	AICTE New Delhi		4.25 lacs	

**B. Publications by faculty :**

1. B.N. Das, "Manufacture of prosthetic Limb Using Myoelectric or EMG Signals", presented in International Conference on Manufacturing ICM 2002 Aug 9-11, 2002, Dhaka, Bangladesh.
2. Mr. B.B. Pal, "A biomedical Electric Filter important from manufacturing point a view", presented in National Symposium on Mathematical methods and application held in I.I.T. Madras, Chennai, 21 Dec., 2002.

**C. Awards/Nomination of Faculty by important organization :**

1. Dr. B.N. Das, "Nominated as AICTE representative on the Managing committee, university Institute of Technology, The University of Burdwan, Burdwan.
2. Dr. B.N. Das, Nominated by Chancellor/Governor of U.P. as expert member on the selection committee for Institute of applied Engg. & Technology, Bundelkhand University of Jhansi.

\* \* \*

## DEPARTMENT OF BIOTECHNOLOGY

Department of Biotechnology is the youngest department of the Institute. It has started from January, 2003 with fifty students. The department takes students from both Biology and Mathematics group through All India Admission Test conducted by AIEEE. Although, it is in its nascent state, this department offers academic programmes in the Under-graduate, Post-graduate and Ph. D. levels in diverse areas. The students of this department would be exposed to the fundamental and advanced technologies through a collection of theory papers and advanced laboratory sessions. The courses are such designed so as to create professionals in Biotechnology namely in Genetic Engineering, Pharmaceutical and Agricultural Biotechnology. The syllabi of the courses have incorporated the recent developments achieved in these fields in National and International Scenario and thereby cater to the requirements of the Industries and various academic bodies. Though an infant, this department has state of the art laboratories for both teaching and research purposes. The department of Biotechnology is equipped with most sophisticated instruments like :

- ◆ Thermal cycler – PCR System
- ◆ Lyophiliser cum Freeze Dryer
- ◆ High temperature Incubator Shakers
- ◆ Halogen Moisture Analyser
- ◆ Electronic Conductivity & pH Meter
- ◆ Video Gel Documentation System
- ◆ Electrophoresis – Horizontal Gel Tanks
- ◆ Mini Protein, Transblot, Electroeluter, Protein Xi System
- ◆ UV Crosslinker
- ◆ Picofuge-Centrifuge
- ◆ Minispin-Centrifuge
- ◆ Electroporation-Gene Pulser
- ◆ Fluorometer
- ◆ Liquid Chromatography
- ◆ HPLC System
- ◆ Hybridisation Incubator
- ◆ Homogeniser
- ◆ Super speed Refrigerated Centrifuge

- ◆ Dual Channel Gas Chromatograph with capillary injector and FID detector
- ◆ Ultra Low Temperature Freezer
- ◆ Microplate Reader
- ◆ Microscope
- ◆ Elix 10 & Milli Q-Water Purification System

**Degree/ Diploma Offered :** B.E. Biotechnology

**Faculty Position :** Lecturer – 1, Associate Lecturer – 1.

**Number of Students enrolled:** B.E. (Biotechnology) – 51.

**Academic Innovations, Research & Development activities.**

#### **A. Publications by faculty:**

##### ***Journals***

Isolation and characterization of a dermatophyt, *Microsporum gyseum* from poultry farm soil of Rewa (M.P.) PJBS, Asian Network for Scientific Information, 6 (6) : 622-625.

#### **B. Conference attended**

1. Dr. Pratyosh Shukla – Lecturer, Isolation of Keratinophilic fungi from the soil of Rewa (M.P.) presented at Annual Conference of Association of Microbiologists of India at CCS Haryana Agricultural University, Hisar, Haryana, December 2002.
2. Dr. Pratyosh Shukla – Lecturer, Delivered Lecture at Bioinformatics Research and Training Centre (A Bioinfo Inc. USA wing) on Genomics, Proteomics & Molecular Genetics – November 2002.

#### **C. Books /Monographs**

1. Microbiology and Biotechnology for Sustainable Development, CBS Publisher, New Delhi.

#### **D. Seminar/Symposium/Short term course attended by faculty members :**

1. Mr. Harmeet Singh –Associate Lecturer, Attended a Short term course on “recent Advances In Design & Analysis of Biotechnology Processes” – May 13-17, 2003 at IIT Powai, Mumbai.

\* \* \*

## DEPARTMENT OF CIVIL ENGINEERING

The department offers undergraduate degree course, post graduate course with soil mechanics as specialization for full time scholars, and a postgraduate degree course with structural engineering as specialization as continuing education for working engineers. The department has extended its Post graduate courses for Field Engineers engaged in Road project in Jharkhand since Monsoon session 2002 to support the quality development in the state. The department also offers adequate facilities for research work. The faculty members are actively engaged in research and consultancy in which all students of the department have ample opportunity of active involvement. Two faculty members submitted their Ph.D. thesis in this session. Both undergraduate and postgraduate students are trained in Computer applications in Civil Engineering problems and the latest software are made available to them. Major areas of current research in the department include composite materials, soil-structure interactions, deep foundation system and magneto-hydrodynamics.

The Department possesses well-equipped laboratories worth mentioning here are. The material testing laboratories including concrete laboratories. Road materials laboratories : Rock Mechanics laboratories : Soil Mechanics laboratories ; Environmental Engineering laboratories etc. are all well equipped for all sorts of testing satisfying all requirements of Indian Standard Codes. Hydraulics laboratory and Structural Engineering laboratory are well equipped for conducting experimental research work. Survey laboratory contains total station equipment suitable for advanced geodetic survey work. These laboratories are upgraded by the addition of equipments such as Tar viscometer, Float Test Apparatus. Abel Flash Point Apparatus, cloud & Pour point Apparatus, Universal Penetrometer, Profilograph. Benkelman Beam, Centrifuge Extractor, Hubbard Field Test Apparatus, Dynamic Concepenetro-meter Ductility Test Apparatus.

**Degree/Diploma offered :** B.E. (Civil), M.E. (Soil Mechanics), M.E. (Structure), Ph. D.

**Faculty position :** Professors – 4, Readers – 2, Lecturers- 6, Associate Lecturers- 1

**Number of enrolled :** B.E.- 61, M.E. – 9, Ph. D. –5

Academic Innovation, Research & Development Activities :

### A. Ongoing Projects:

1. The department has taken up and is continuing work on two major research project of total cost of about Rs. 30.00 Lakhs in collaboration with coal India Ltd. and CMPDI, Ranchi.



## **B. The department received the financial assistance ship for infrastructure Development.**

1. AICTE project sanctioned on MODROBS scheme in the financial year 2002-2003 for Rs. 7. 00 lakhs letter No. 8021/RD/NPROJ/MOD-57/2002-2003 dated 10.3.2003.
2. Financial assistance from NRRDA Ministry of Rural Development of Rs. 60.000/- (sixty thousand only) for the purchase of system, printer etc. for the use in PMGSY vide letter No. 16011/16/2002- NRRDA dated 31.3.2003.

## **C. Seminar/Workshop Organized :**

1. The department organized seminar as follows : The department organized a seminar on 'Design of Lysimeter Test for the Safe Disposal of Coke Plant Effluent to land for irrigation" on April, 2002.
2. Organized seminar on "Cost Effective Technology in Housing Sector" on August 21, 2002 in collaboration with the Institution of Engineer's, Jharkhand State Centre.

## **D. Seminar/Symposicem/short term course attended by faculty members.**

1. Civil Engineering. Department is very much attached in the infrastructure development of the state, Jharkhand. The department represents the Ministry of Rural Development, Govt. of India as State Technical Agent on Pradhan Mantri Gram Sadak Yojana.
2. Prof. S. Sengupta is actively involved as resource person of Jharkhand Education project for infrastructure development of Primary Education.
3. Prof. S. Sengupta is one of the Technical advisor of EdCIL Ministry of Resource Development, Govt. of India.
4. Prof. S. Sengupta participated and presented a paper in "All India Seminar on Development of Road infrastructure in Jharkhand" at Dhanbad, June, 29-30, 2002.
5. Prof. S. Sengupta was an invited participant as S.T.A. in Zonal Conference at Shillong on September 27-28, 2002 organized by MRD, Govt. of India.
6. Prof. S. Sengupta participated 63<sup>rd</sup> Annual Session of Indian Road Congress on January 3-6, 2003 held at Guwahati.
7. Dr. Gopal Pathak attended the Advanced Workshop on Green Productivity for Educators Organized by the Asian Productivity Organization, Japan and implemented by the Department of Environment and NIPO, IRAN during 1-5 September, 2002, in Tehran, IRAN.

8. Dr. Gopal Pathak participated as a member of the Scientific Advisory Board in the 18<sup>th</sup> ] Annual International Conference on Contaminated Soils, Sediments and Water. The conference was held at University of Massachusetts, AMHERST, USA during October 1-24, 2002. Also acted as a co-moderator in the technical sessions on heavy metals.
9. Dr. Gopal Pathak visited New Jersey Institute of Technology, New Jersey, U.S.A. as a visiting Professor during October, 2002.
10. Dr. Anand Kumar Sinha presented a paper entitled, "Laplace Transform based Ground Water Flow Model for Two Layered Aquifer System of Finite Extent" at International Conference on "Water and Wastewater: Perspective of Developing Countries" on December 11-13, 2002 at New Delhi, jointly organized by Indian Institute of Technology, Delhi and International Water Association, U.K.
11. Dr. Anand Kumar Sinha presented a paper entitled, "Laplace Transform based Coupled Ground Water Surface Water Model" at International Conference on "Hydrology and Watershed Management" on December 18-20, 2002 at Hyderabad, organized by Centre for Water Resources, JNTU, Hyderabad.
12. Dr. Anand Kumar Sinha presented a paper entitled, "Non-steady Ground Water Flow Modelling using Laplace Transform Method" at All India Seminar on "Water Resources Planning in Jharkhand State" on July 6-7, 2002 at Ranchi, Organized by The Institution of Engineers (India), Jharkhand State Centre.
13. Dr. Anand Kumar Sinha participated in AICTE Short Term Course on "Advanced Road Infrastructure Planning and Development" on July 27-23, 2002 at Indian Institute of Technology, Kharagpur.
14. Dr. Anand Kumar Sinha participated in Workshop on "Ground Water Modelling" on December 17, 2002 at Centre for Water Resources, JNTU, Hyderabad.
15. Prof. Suresh Kumar Participated Training program on Geographic Information system (with emphasis on natural resources and disaster Management), July 1-8, 2002 at I.T.T. Roorkee.
16. Prof. Suresh Kumar participated AICTE sponsored training program, staff Development Program, March 4-23, 2002 at BIT Mesra, Ranchi.
17. Prof. Suresh Kumar participated one day seminar on Rain Water harvesting at Ranchi organized by RRDA, Jharkhand on 22<sup>nd</sup> June, 2002.
18. Prof. Suresh Kumar participated Workshop on Cost Effective Technology in Housing Sector 'on August 31, 2002 organized by IEE Jharkhand.
19. Prof. Suresh Kumar participated AICTE-ISTE sponsored Training program on Application of neural network & Fuzzy logic in Civil Engineering, October 7-19, 2002 at UCF, Burla, Sambalpur.

20. Prof. Suresh Kumar participated AICTE Sponsored short term training program on "Operation Management" organized by Department of Management, B.I.T. Mesra, Ranchi from 16<sup>th</sup> December to 27<sup>th</sup> December, 2002.
21. Prof. Suresh Kumar participated two days conference on "Water Resources Development and Management" organized by Civil Engineering. Department B.I.T. Mesra from 9<sup>th</sup> February to 10<sup>th</sup> February, 2002.
22. Shri Jitu Kujur participated All India Seminar on Development of Road Infrastructure in Jharkhand on 29<sup>th</sup>–30, June, 2002 at Dhanbad organized by IEE Dhanbad.
23. Shri Jitu Kumar participated Workshop on "Cost effective Technology in Housing Sector" on August 31, 2002 organized by IEI Dhanbad.
24. Shri Jitu Kumar participated short term training program organized by Management department, B.I.T. Mesra, Ranchi sponsored by AICTE on topic Operation Management from 16<sup>th</sup> December to 27<sup>th</sup> December, 2002.
25. Shri Jitu Kumar participated two days conference on Water resources development and Management organized by department of Civil Engineering, B.I.T. Mesra, Ranchi from 9-10 February, 2002.

#### **E. Award/Nomination of faculty by important organization.**

1. Prof. S. Sengupta nominated as a Member, Advisory Group of Ed CIL, Ministry of Rural Development, Govt. of India.
2. Prof. S. Sengupta nominated as a Member, Regional Technical Committee, HUDCO.
3. Prof. S. Sengupta nominated as a Member, Executive Committee, Jharkhand State Centre, Institution of Engineers, India.
4. Prof. S. Sengupta nominated as a Member, Rural Roads (II-11) Committee, Indian Roads Congress for three years since Jan. 2003.
5. Dr. Balram Singh nominated as a member of the Amercian Biographical Institute Research Board of Advisors.
6. Balram Singh nominated for Man of the year 2003 by International board of Research of American Biographical Institute.
7. Prof. S. Sengupta was one of the convener in 16<sup>th</sup> National Convention of Agricultural Engineering's on November 29 to December 1, 2002 organized by the Institution of Engineers, Jharkhand State Centre, Ranchi.

#### **F. Ph.D. awarded :**

1. Prof. Balram Singh, faculty member of the department completed his thesis work and as award Ph.D. in the month of February, 2003.

\* \* \*

## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

The Department of Computer Science in BIT was started in 1983 for Bachelor's degree course with bare minimum laboratory facilities, Work-Force and the strength of the students (30). Within a span of 18 years, the department has reached from its Neonatal stage to its Teens, keeping pace with the developments & advancements in the field. The department has grown rapidly to become one of the largest department in engineering faculty in terms of numbers of students. The Department has responsibility for teaching and research work primarily on the technical aspects of computers and their uses. Within the above context, the department offers emphases in the computer systems aspects of parallel and distributed computing, software engineering, Object based Software Engineering, Computer architecture and networks, algorithms and programming languages, systems software, computer graphics, image processing, expert system, theory of computation, computability and complexity theory, neural networks, and modelling and simulation. To meet the growing demand for IT professionals capable of assuming responsibilities immediately after graduation, the Master of Computer Applications programme has been drawn up by the Department of Electronics, Government of India and Master of Technology (Computer Science) B.E (Computer Science) programme by All India Council for Technical Education, Government of India. These courses are designed for good computing exposure of students and to prepare them in an employment oriented environment. These degree holders are thus well equipped with the expertise needed for immediate service.

### **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 aggregated memory, 10x9.1 GB Ultra SCSI HDD, 32 X CD ROM drive per node, 1.44 MB FDD per node, 2 X 360W power supply per node, PGx32 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-77, 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.

- ◆ DEC-Alpha-600 has Alpha @ 175 MHz with 2.5 GB Hard disk, 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.
- ◆ SILICON GRAPHICS INDY R-4600 system for Image processing and multimedia presentation having processor MIPS R4600, 100 MHz, MIPS rating 119, 32 MB RAM, 16KB data & Instruction cache, video camera, microphone, Speakers, Mouse, 535 MB HDD, CD ROM, IRIX Operating system with C,C++, Pascal, Cobol compilers, Multimedia showcase.
- ◆ SUN ULTRA 140 workstation/64MB/2GB HDD/17<sup>th</sup> 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 CD RAM/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 clockspeed/32 MB SD RAM/4.3 GB HDD with compiler Lotus smart-suit.
- ◆ 2 Nos. Server of HCL Infinity MNC brand System PII 333 MHz made server/64MB SD RAM/ 4.3 GB HDD/1.44 FDD/SVGA With 2MB Colour Monitor Digital 32X CD Drive Keyboard/Mouse.
- ◆ 50 nos. IBM Thin Client/Video Memory 1 MB/D RAM 16 MB/14" Color Monitor Digital/Keyboard/Mouse.
- ◆ 25 nos. IBM Thin Client/Video Memory 3 MB/D RAM 32 MB/14" Color Monitor Digital/Keyboard/Mouse.
- ◆ 60 nos. IBM MNC brand system PIII 800 MHz Speed/128MB SD RAM/256 KB cache/10 GB HDD/1.44/14" Color Monitor/48X CD ROM Drive/Keyboard/Mouse/ 10/100 Ethernet Card.
- ◆ One COMPAQ Proliant 400 server with Intel PIII 550 MHz CPU, 516 MB SD RAM, 512 KB Cache, 15" Colour Monitor, 110 keys keyboard, Mouse, ATX cabinet, 18.2 GB HDD, 1.44 MB FDD, 48X CD ROM.
- ◆ 50 nos. COMPAQ Deskpro EC with Intel® Celeron™ 500/66 MHz CPU, 810e Motherboard, Preinstalled Windows 98.
- ◆ 2 nos. Multimedia System of Wipro System Genius 6100-HMOE/Intel Pentium II-333 MHz/512 KB Cache/APG Graphics with 4MB VRAM/4MB Ultra DMA Controller/ 2\* 16550 Fast Serial Port/1 EPP-ECP Port/2USB Port/96 MB SD-RAM/104 KBD/ Win98/14" Monitor with Multimedia Kit/40X CD Drive/SBS 10 Creative speaker sound card/Microphone.

- ◆ 18 nos. VT 100 dumb terminals connected with UNIX server.
- ◆ 6 nos. Wipro ACER PC with 1 GB HDD, 1.44 MB FDD, 16 MB RAM, 256 KB Cache, 15" Colour Monitor, KB, Mouse.
- ◆ 6 nos. Assembled PCs with CELERON 566 MHz processor, 8 GB HDD, 1.44 MG FDD, 64 MB RAM, 108 Keys Keyboard, Mouse, 15" Colour Monitor. 200 nos. IBM PCs P-IV 256 MB RAM, 40 GB HDD, 52X CD-ROM Drive 1.5 GHz Clock.

There are a number of Dot Matrix Printers and a line printer with a printing speed of 600 1pm as common facilities to the above mentioned systems. All these systems are networked on Ethernet with TCP/IP and NFS. The micro computer based software packages includes FOX-Pro for Windows, MS Fortran, MS Office for windows, MS Visual Basic 6.0, Borland C++ , Turbo Pascal 7.0, JAVA, J++ , Visual Studio etc. Recently Institute has started E-mail and plant to start Internet access facility through Department of Telecommunication, Government of Indian, for students and staffs. The department currently providing computing facilities for 200 students at a time in one slot and kept open all 7 days from 8 am to 8 pm for the users and plant to start Internet access facility through Department of Telecommunication, Government of India.

**Degree/Diploma Offered :** BE (CS), BE (IT), MCA, M. Tech. (CS), ME (SE)

**Faculty Position :** Professor – 1, Readers - 2, Lecturers - 14, Associate Lecturers – 8, Research Associate cum Tutor – 1

**Number of Student Enrolled :** Undergraduate – 350, Postgraduate – 175 in various semesters.

Academic Innovations, Research & Development activities.

#### **A. Ongoing Project :**

Project Title	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
COILNET	Ministry of Inf. Tech. Govt. of India	Feb. 2002	1.00 Crore	3 Years

#### **B. Seminar/Symposium/Short term course attended by faculty members :**

1. Dr. G. Sahoo, Attended the International collegiate Programming Design at I.I.T., Kanpur- Organized by ACM Kanpur Chapter, Dec. 6-7, 2002.
2. Mr. S. Dutta, Attended the workshop on IT Localisation Clinic under COILNET Project at Udaypur, Vov. 13-14, 2002.
3. Mr. R.K. Jena, Mr. B.K. Sarkar, Mr. Gupta, Mr. I. Mukherjee, Mr. P. Paul and Mr. A. Mukhopadhyay, Attended the short term course on Soft Computing and Application on Power System held in the Department of Electrical Engineering, B.I.T. Mesra, Ranchi, Jan. 13-27, 2003.

# DEPARTMENT OF ELECTRICAL & ELECTRONICS

The department being one of the oldest in the institute (i.e. since the inception of the institute) has a long history. The department envisions to cope with the fast changing pragmatic needs of the technology throughout the globe by adopting suitable new courses and modernization of labs along with commensurate faculty development through research activities.

The department has been a center of research in the areas of digital signal processing, plasma engineering, microprocessor applications, fractional horsepower electric machines etc, from time to time. In recent past new courses in the areas of Neural Networks, Fuzzy Logic Control, Genetic algorithms, Information Technology, Advanced Microprocessor interfacing have been introduced at post graduate level and is currently being percolated at undergraduate level. Currently a number of Ph.D. scholars are working in the areas of non-stationary signal analysis, intelligent control techniques applied to automatic generation control and non linear dynamic systems, development of new architecture for neural networks etc. Research is also going on in the areas of intelligent instrumentation and clean and efficient heating. Emphasis has also been laid on the application of neural networks, fuzzy logic, genetic algorithm based evolutionary computations in the areas of control system, power system, complex analysis and design and biomedical instrumentation. It has a good record of successfully completing projects related to classification of signal using advanced digital signal processing techniques, stochastic control based forecasting, image processing, neuro-fuzzy based medical diagnosis etc.

The department has continued interaction with public and private sector industries. Consultancy assignments and sponsored research projects in the fields of control system for desired tensional/compression rolling in hot rolling mill, control of dynamical systems, study and design of observer and controller for induction motor have been successfully completed by the department.

The department desires to incorporate two small robots with sensing transducers in the laboratory. Work is now going on for the development of the programme for training the robots to identify and learn hazardous environments. We have planned to build an intelligent robot with high-resolution transducers for data acquisition and decision making toolbox to sense and identify objects.

The department envisions broadening its of research activities in using soft computing techniques. Basically the emphasis is on development of automatic control using the hybrid neuro-fuzzy-GA techniques, reliability analysis for power system planning such as unit commitment, maintenance scheduling, economic load dispatch, load forecasting etc. Digital signal processing application for power quantity analysis is being carried out using wavelet transform and DSP processors. The pragmatic ramification has been proved

through successful conduct of different technical national seminar such as Power 2002 (All India National Convention Electrical Engineers during Nov. 2002) as well as AICTE-ISTE sponsored short term course entitled "Application of Soft Computing Techniques in Power System" during Jan. 2003. The facilities have contributed to many international and national journals and conferences such as Power System Components (UK), Power System Research (USA), Institution of Engineers (I) etc.

The Direct Torque Control (DTC) is one of the actively researched control scheme which is based on decomposed control of flux and torque. In recent years, the application fields of flux and torque decoupling control of 3-phase induction motor (IM) have increased. It has found use in areas of traction, paper and rolling mills. DTC is also very simple in its implementation because it needs only two hysteresis comparators and switching vector table for both flux and torque control. In time to come DTC drive will be very popular because it has advantage over DC machine and FOC drive.

The electroencephalogram (EEG) is a valuable clinical tool in diagnosis of different mental diseases. To enhance the diagnostics ability of EEG, work is in progress for analysis of epilepsy like phenomena, depth of anesthesia, state of alertness etc. we are using artificial neural network which is a powerful tool in pattern recognition problems.

**Degree Offered** B.E. M.E, Ph. D.

**Faculty Position :** Professors – 5, Readers – 3, Senior Lecturer – 1, Lecturers- 11.

**Number of Student Enrolled :** Undergraduate – 143, Postgraduate – 22, Ph. D. – 6.

**Academic Innovations, Research & Development activities.**

#### **A. Ongoing Project :**

<b>Name of the Investigator</b>	<b>Title of the project</b>	<b>Funding agency</b>	<b>Date of sanction</b>	<b>Sanctioned amount</b>	<b>Duration of Project</b>
Dr. B.N. Das	Control of multifunction prosthesis through simulation of my electric signals	UGC		2.775 lacs	
Dr. B.N. Das	Intelligent Monitoring System for Synoptic Patients in varied postures	AICTE New Delhi		4. 25 lacs	
Dr.T. Ghose	Development of Program-mable Logic Controller Based Automatic Generation Control	UGC		4.92 lacs	



Name of the Investigator	Title of the project	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
Dr.B.M.Karan	Modernization & Removal of Obsolescence of Control System Laboratory	AICTE		10 lacs	
Mr. K. Chatterjee	Analysis of Intelligent Controller for AGC	AICTE		3 lacs	

#### **B. Project Sanctioned during the year 2002-2003.**

Name of the Investigator	Title of the project	Funding agency	Date of sanction	Sanctioned amount	Duration of Project
Dr. B.M. Karan	Modernization & Removal of Obsolescence of Control System Laboratory	AICTE	10.3.2003	10 lacs	
Mr. K. Chatterjee	Analysis of Intelligent Controller for AGC	AICTE	10.3.2003	3 lacs	

#### **C. Project submitted during the year 2002-2003.**

Name of the Investigator	Title of the project	Funding agency	Date of sanction	Scheme	Duration of Project
Dr. B.M. Karan	Modernization & Removal of Obsolescence of Control System Laboratory	AICTE		MODROB	
Mr. K. Chatterjee	Analysis of Intelligent Controller for AGC	AICTE		R & D	

#### **D. Convention organized by the department.**

18<sup>th</sup> National convention of Electrical Engineering Division of Institution of Engineers (India) "POWER-2002" during November 1-2, 2002.

#### ***Seminar organized by the department***

National Seminar on Indian Power scenario-Present & Future Perspective during November 1-2, 2002. Numbers of delegates – 65, Dignataries participated- 1. Shri R.V. Shahi, 2. Prof. S.C. Dutta Roy, 3. Er. Satish Bhalla, 4. Er. M.R. Kothari, 5. Samiran Choudhuri 6. Er. Madan Lal, 7. Sri R.R. Murthy, 8. Er. L.K. Lal, 9. Er. Suresh Chandra, 10. Sri Singh Deo, Lt. Gen. Tej Paul.

### ***Short-term courses organized by the department***

AICTE-ISTE Sponsored STTP on Intelligent Control Application during December 16-28, 2002. AICTE-ISTE Sponsored STTP on Soft Computing Application in Power Systems during January 13-25, 2003.

### **E. Publications by faculty**

#### ***International journals (Communicated)***

1. K. Chatterjee, T. Ghose, B.M. Karan, "Neural Network Based Self-tuning of Integral Controller For Automatic Generation Control", Communicated to the international journal of the Power System Components and System, U.S.A.
2. K. Chatterjee, T. Ghose, B.M. Karan, "Fuzzy Logic Based Adaptive Control Technique For Automatic Generation Control", Communicated to the international journal of Electric Power Systems Research, USA.
3. K. Chatterjee, T. Ghose, B.M. Karan, "Fuzzy Logic Based Adaptive Control Technique For Automatic Generation Control", Communicated to the international journal of the Power System Components and Systems, U.S.A.

### **F. Seminar/Short Term Course Attended by Faculty Members:**

<b>Name of Short Term Course</b>	<b>Name of Faculty Members</b>
"Multilayer feed forward modular network for induction motor" presented in IEEE, WCCI, 2002 held in Honolulu, Hawaii, USA in World Congress Computational Intelligence, 12-17 May, 2002.	Dr. B.M. Karan
"Fuzzy logic parameter estimation of induction motor" presented in IEEE, PAC 2002 to be held in Vancouver, Canada, 29 April to 1 May, 2002.	Dr. B.M. Karan
"Manufacturing of prosthetic Limb Using Myoelectric or EMG Signals", presented in International Conference on Manufacturing ICM 2002 Aug 9-11; 2002, Dhaka, Bangladesh	Dr. B.N. Das
"A Comparative Analysis Between Developed Integral Controller and Fuzzy Logic Based Controller For Automatic Generation Control", presented in National Power Institute of Technology, Kharagpur 721302, December 27-29, 2002.	Mr. Kalyan Chatterjee

“Urja Sankat-Kaaran Aur Nibaran’, presented in All India Hindi Seminar on” Jharkhand Ke Sarbangin vikash Hetu Mulbhut sanrachana”, organised by IE (I), Jharkhand held on 30<sup>th</sup> March, 2003.

Dr. B.M. Karan &  
Prof. N. Pathak

### **Name of Short Term Course**

Power System Operation and Control conducted by Power System Training Institute (PSTI) Ministry of Power, Bangalore.

AICTE-ISTE Sponsored STTP on Intelligent Control Applications during December 16-28, 2002.

AICTE-ISTE Sponsored STTP on Soft Computing Application in Power Systems during January 13-25, 2003

### **Name of Faculty Members**

Dr. T. Ghose

Ms. J. Sahu, Ms. V. Laxmi  
Prof. N. Pathak, Prof. B.P. Roy,  
Mr. D.K. Mohanta

Mr. R.C. Jha, Ms. J. Sahu,  
Mr. Kalyan Chatterje,  
Ms. V. Laxmi, Prof. N. Pathak,  
Prof. B.P. Roy, Mr. D.K. Mohanta

### **G. Awards/Nomination of Faculty by important organization :**

1. Dr. B.M. Karan, Members of the project Review & Steering Group (Ministry of Communications and information. Project Title: Integrated Cooking Control System For Coke Ovens Battery.
2. Dr. B. M. Karan, Members for NBA of AICTE and AICTE Evaluation Committee.
3. Dr. B.M. Karan, Members of Jharkhand, State Council, IE (IO, Electrical (Division).
4. Dr. B.M. Karan, Nominated Expert Committee member to review Courses of Calcutta university & Colleges under WBTU.
5. Dr. B.M. Karan, Member of Bureau of Indian Standards for Electronics Components and Machinery of Coal Industry.
6. Dr. B.N. Das, Nominated as AICTE representative on the Managing committee, university Institute of Technology, The University of Burdwan, Burdwan.
7. Dr. B.N. Das, Nominated by Chancellor/Governor of U.P. as expert member on the selection committee for Institute of applied Engg. & Technology, Bundelkhand University of Jhansi.

\* \* \*

# 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 Digital Communication, Digital Electronics and Integrated Circuits, Microwave, Microprocessor, Fiber Optics Communication, Television, Industrial Electronics, PCB design and testing, VLSI Design.

The fibre 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 data links, 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 analyzer with plotter going to 22 GHz, Spectrum analyzer spanning 9 KHz to 22 GHz range, Sweep Oscillators for 5.9 to 12.4 GHz, 22GHz microwave frequency counter milliwatt and power-meter support R&D work in microwave area. An Antenna test setup has been installed in the Microwave Lab. in the range 100-900 MHz.

A VLSI Design Lab had been set up, and the required software had been procured. Alos MULTISIM and ULTIBOARD Software had been installed in the systems in our CAD Lab. Circuits & Devices Lab. course is presently being conducted in this Lab.

**Degree/Diploma Offered :** B.E., M.E. (Instrumentation) and M.E. (Microwave), M.Sc (ET).

**Faculty Position :** Professor – 2, Readers – 8, Lecturers- 3, Associate Lecturers – 4.

**Number of Student Enrolled :** B.E. – 266, M.E. – 7, M. Sc. (ET) – 15.

**Academic Innovations, Research & Development activities.**

## A. Going Project :

1. "Use of Nonlinear Photo refractive Materials in Fiber Interconnections" sanctioned by UGC, New Delhi on 12 Oct. 2000. Sanctioned amount of Rs. 4.19 Lacs. : Principal Investigator : Dr. S.K. Ghorai.
2. "High Sensitive Inter-fero-metric and Distributed Fiber Optic Sensor" Sanctioned by AICTE, New Delhi on 24<sup>th</sup> March, 2000. Sanctioned amount of Rs. 10.00 Lac : Principal Investigator : Dr. S.K. Ghorai.

3. "Robotic Vision for Automating Production System" sanctioned by UGC, New Delhi in 1999. Sanctioned amount of Rs. 8.00 Lacs : Principal Investigator : Dr. D. Pal.
4. "Intelligent Transport System (ITS) using Millimeter Wave Technology for Prevention of Road Accidents", sanctioned by AICTE, New Delhi 2002. Sanctioned Amount of Rs. 3.5 Lacs Principal Investigator : Dr. J.S. Roy.
5. "Use of Fiber Optic Sensors for Strain, Displacement and Load measurement Data Acquisition Transmission through FO Glass", sanction by ISRO, Sanctioned Amount Rs. 9.73 Lacs Principal Investigator : Dr. S.K. Ghorai.
6. "Design and Development of Active Filters and Oscillators to operate at Low frequencies", Acceptance received from ISRO. Principal Investigator : Dr. D. Pal.

#### **B. Seminar/Symposium/Short term course attended by faculty members .**

1. S.K. Ghorai, A. Dixit, P.K. Upadhyay and Kirti Bajaj, "Phase Retrieval by Data-Department System Method in Low Coherence Optical Fiber Interferometric Sensor", Proc. Of International Conf. On Optoelectronics, Fiber Optics, and Photonics "Photonics 2002" TIFR, Mumbai, Dec. 16-18, 2002.
2. S.K. Ghorai, A. Dixit, Kirti Bajaj and P.K. Updhyay, "Routing of Optical Signals in Fiber Interconnections Using Photorefractive Crystal", Proc. Of International Conf. On Optoelectronics, Fiber Optics and Photonics "Photonics 2002" TIFR, Mumbai, Dec. 16-18, 2002.
3. J.S. Roy & N. Chattoraj, "Magnetically Biased Ferrite Microstrip Antenna", proc. Of National Symposium on Antennas & Propagation, Cochin, India, 9-11, Dec. 2002.
4. B.B. Pal, D. Pal and B.N. Das, "A Biomedical Electronic Filter Important from Manufacturing Point of View" National Symposium on Mathematical Methods and Applications, IIT Chennai, Dec. 21, India.
5. Vinay Kumar Singh "Analysis, Design and Simulation of Resistive Loaded ultra wide-band TEM Horn Antenna", International Centre for Radio Science, Jodhpur, 19-21 Dec. 2002.

#### **C. Award/Nomination of faculty by important organization.**

1. Dr. D. Pal, Post Doctoral Research Fellowship, July - October 2002, University College of London (U.K.), Under the bilateral exchange programme between Royal Society, London and Indian National Science Academy.
2. Prof. R. Suresh Kumar, Fellow, Institute of Engineers (India) in 2002.
3. Dr. S. Srivastava, Awarded Ph. D. Degree from Banaras Hindu University in 2003.
4. Prof. V.R. Gupta, Attended short term course on Genetic Algorithms in Engineering Electromagnetics: Concept, Implementation and Applications, Texas, USA, June 2002.

## DEPARTMENT OF HOTEL MANAGEMENT & CATERING TECHNOLOGY

The Department of Hotel Management and Catering Technology is among the newly opened faculties of the Birla Institute of Technology, Mesra, Ranchi. It was inaugurated on January 20, 2003. The first batch consisting of 25 boys and 2 girls started their classes in the Executive Guest House which has been converted into a training facility for the students.

As part of an educational tour, the students were taken to Kolkata for a visit to hotel Taj Bengal.

The Board of Studies for the department finalized the syllabus for this programme which has a distinct uniqueness over other similar courses by adding special features in the curriculum.

**Degree/Diploma Offered** Bachelor of Hotel Management & Catering Technology,

**Faculty Position :** Associate Lecturers- 2, Research Associate –1.

**Number of Students :** 27

\* \* \*

## DEPARTMENT OF INFORMATION SCIENCE

The Department of Information Science, is successfully running M.Sc. (Information Science) programme. To impart the best knowledge in the field, the Department is regularly updating the course curriculum. In this respect the Department constituted the new Board of Studies which updated the course syllabi in May 2002.

Nineteen students got their M.Sc. Information Science Degree in the year 2002-2003.

**Degree/Diploma Offered :** Master of Science (Information Science)

**Faculty Position :** Lecturer – 1

**Numbers of Students :** M. Sc. (I.S.) – 66.

### **Academic Innovations, Research & Development Activities.**

In the area of Research and Development, Mr. Bhaskar Karn submitted his Ph.D. titled, "Fuzzy Information Retrieval" in December 2002 under the guidance of Dr. S.K. Mukherjee, Vice Chancellor, BIT, Mesra and Dr. C.R. Karisiddappa, Professor and Chairman, Dept. of LIS Karnatak University, Dharwad.

Mr. Bhaskar Karn was one of the resource person for the AICTE sponsored Short Term Course organized by Department of Electrical & Electronics Engineering in December 2002.

A paper titled, "Fuzzy logic based Information Retrieval System" written by Bhaskar Karn, C.R. Karisiddappa and S.K. Mukherjee was accepted for presentation in the IASLIC seminar in December 2002 and was subsequently published in the Conference Proceedings.

\* \* \*

## DEPARTMENT OF MANAGEMENT

The department has maintained its academic leadership in the eastern region of India by its ambitious plan and commitment to the qualitative requirements of the professional world. The faculties and students have earned good repute by representing the department in various all India level activities. During the period started to maintain excellence. These include :-

1. Revision of MBA/BBA syllabus to make the course content more relevant. The MBA course has been re-designed on a trimester basis. The unique feature of this exercise is addition of sectoral specialization in six sectors.
2. Publication of Bi-annual journal, "The Alternative" and quarterly Newsletter, "Manage-a-Bit". The Response for exchange of journals with different institutions has been overwhelming and above forty journals are coming to the department on exchange basis.
3. The department has been accredited by National Board of Accreditation, AICTE and it has earned a 'B' grade. The accreditation process has helped the department tremendously and very soon we expect to upgrade our grade to "A".
4. The department successfully organized SAMAGAM, a 3-day Management Students Festival where students from ten Management Schools of different parts of the country participated apart from the local teams.
5. The department started BBA programmes at Allahabad and Jaipur Extension Centres and at Muscat International Centre during the year.
6. The department also launched MBA programme at Lalpur and Noida Extension Centres for which UGC gave approval after a team led by Prof. T.N. Kapoor, Ex-Vice Chancellor, Punjab University visited these centres.
7. The first batch of ME (QEM) was admitted during the year and the course has been well received by industry.
8. During the year the placement of BBA/MBA students has been very encouraging. ICICI, IndusInd Bank etc. were the major recruiters.
9. The department successfully completed a consultancy for department of Industries, Govt. of Jharkhand. This was a diagnostic study for revival of a sick industry, M/s. K.P. Minerals (P) Ltd.
10. The faculty members participated in different training programmes as resource person in nearby industrial establishments.
11. During the year, six candidates were registered for their Ph.D Programme under different faculty members.



**Degree/Diploma Offered :** BBA, MBA (FT/PT), M.E. (QEM), Ph.D.

**Faculty Position :** Professors – 1, Readers-5, Senior Lecturer –1, Lecturers- 3, Associate Lecturer – 1.

**Number of Students :** There are two batches of 45 students of MBA and six students of ME (QEM) on the rolls at BIT campus.

### **Academic Innovations, Research & Development Activities**

#### **A. Ongoing Projects :**

Title	Sponsor	Principal Investigator
A pronged approach for the Management of NP As of Commercial bank for the Development of south Chotanagpur region.	AICTE	Dr. S.K. Bose
An investigation of reasons for low level of Woman entrepreneurship in south Chotanagpur region.	AICTE	Ms. S. Shivani
The influence of the integration of Technological strategies with business strategy of a large public sector organization on small and medium scale suppliers.	DSIR	Dr. S.K. Mukherjee
Industry Institute Partnership Cell	AICTE	Dr. A.M. Agrawal
Professional Education and its impact on Industrialisation in Tribal-Region- Need for Government Support for creation of Infrastructure (Jharkhand & Chattisgarh)	Min. of Tribal Affairs	Dr. A.M. Agrawal

#### **B. Projects Submitted During the Year 2002-03.**

The department has submitted a proposal for setting up of Industrial Data Bank at Directorate of Industries, Government of Jharkhand, Ranchi.

#### **C. Seminars/Conferences/Short Term Courses Conducted by the Department.**

1. STTP on Operations Management organized during December 16-27, 2002 sponsored by ISTE. Dr. A. M. Agrawal was the Coordinator. About 20 participants from various colleges participated in the programme.

**D. Publications by the Faculty :**

Dr. A.M. Agrawal -2, Dr. A.N. Jha - 5, Dr. Manju Bhagat-2.

**E. Seminars/Symposia/Short Term Courses Attended by Faculty Members.**

Mr. S.C. Mishra -2, Dr. Manju Bhagat - 1.

**H. Awards/Nominations of Faculty by Important Organisations.**

Dr. A.M. Agrawal has been nominated to the Board of Examination of Indian Institute of Industrial Engineers. He has also been in the Expert Committee for recommendation of Projects in University Grants Commission.

\* \* \*

# DEPARTMENT OF MECHANICAL ENGINEERING

The Department of Mechanical Engineering strives to train students in the Engineering Sciences and in the application of these methods to conceive, organize and carry out the design of engineering systems.

The Department professional programme includes a deeper study of a number of engineering Sciences to which the students are introduced at the core curriculum level, experimental solution of physical problems, and techniques and methods of design of systems relevant to the contemporary industrial world.

The Department of Mechanical Engineering is well-equipped in the conventional area of material testing with sophisticated equipment for different type of material testing. It has well-equipped laboratories in the areas of mechanics of machines, hydro-aeromachinery, reciprocating and rotary combustion engines, steam power and refrigeration and air-conditioning. It has one of the best non-conventional energy resource laboratories with particular reference to solar-energy, wind energy and Bio-gas etc.

The Department also has a well-equipped internal combustion engines Lab. with facilities for computerized measurement of engine parameters, metering of fuel and flue gas condition monitoring. Facilities are also available for alternate fuel testing. Department also has well-equipped heat-transfer lab.

It has well-equipped CAD Lab, advanced design and drafting software such as Latest Version on AUTOCAD, S.D.R.C's; I-deas,, Pro-Engineer, and Solid-modelling related software, i.e. Mechanical desktop etc.

The Department also has the latest version of software i.e. MATLAB for Mechatronics Lab. It is well equipped with control-System and Oscilloscope etc.

The Department has material research and design lab for performing experiment and collecting data with the help of computer, specially for Ph.D. Scholar of the Department.

Under the Institute-Industry Interaction Scheme, the Department has been cooperating with various Industrial Organization for their industrial problems.

Overhead projectors, models, charts, computer simulated system, working models of engines and machines, models and cut section models for engineering graphics are used for class-room teaching.

The department has a well devoted and qualified expert team of faculties, who are constantly engaged in carrying out various sponsored projects leading agencies and organizations like AICTE, UGC, etc. These projects are currently in progress in the department, where the students are also involved in various activities, which help them in getting exposed to industrial requirements and needs.

**Degree/Diploma Offered :** B.E. (Mechanical), M.E. (FT/PT) with spacialization in Heat Transfer and Design of Mechanical equipment, Ph. D.

**Faculty Position:** 24 (Professors: 04, Readers : 06, Lecturers : 13, Assoc. Lect. :01)

**Number of Student Enrolled :** B.E.- 221, M.E. –6, Ph. D. – 7.

**Academic Innovations, Research & Development activities.**

**A. Ongoing Project :**

1. "Correlation of Micro structural characteristics with Stress induced Magnetic and Electromagnetic Effects ... Materials sponsored by UGC vide Ref. No. 14-45/2000 (SR-I) dt. 12 Oct. 2000 for Rs. Rs. 5,16,000/- for the period of 3 years.
2. Engineering of Smart Materials through Mechano- emission characteristics, sponsored by DST, vide their sanction No. 100/IFD/2462/2002-2003 dt. 13.9.2002 for the period of 3 years.

**B. Project sanctioned during the year 2002-2003 :**

1. Engineering of Smart Materials through Mechano-emission characteristics, sponsored by DST, vide their sanction No. 100/IFD/2462/2002-2003 dt. 13.9. 2002 for the period of 3 years.

**C. Publication of Faculty :**

- |                           |   |    |
|---------------------------|---|----|
| 1. International journals | : | 05 |
| 2. National journals      | : | 09 |

**D. Seminar/Symposium/Short term course attended by faculty members.**

- |                           |   |    |
|---------------------------|---|----|
| 1. National               | : | 09 |
| 2. International          | : | 02 |
| 3. Summer School Attended | : | 06 |

**E. Award/Nomination of Faculty by important organization :**

1. Prof. Awadh Prasad, Member of Expert Committee (AICTE), New Delhi.
2. Nominated as Member in Jharkhand Renewable Energy Development Agency (JREDA), Ranchi, Jharkhand.
3. Mr. B.S. Choudhary, Executive Member of Mechanical Engineering Division (Institution of Engineers India), Jharkhand State Centre, Ranchi.

\* \* \*

# DEPARTMENT OF PHARMACEUTICAL SCIENCES

Department of Pharmaceutical Sciences was established at Birla Institute of Technology Mesra, in the year 1972. It is the only Department imparting Pharmacy education at the level of Degree (B. Pharm.), Postgraduate (M. Pharm.) and Doctoral level in the State of undivided BIHAR. After bifurcation of state, it is the sole Institute catering the needs of Pharmacy Education in this part of the country.

The training is designed to create professional committed to the ethical aspects of their field and to help the students to acquire the technical competence and the analytical abilities to make appropriate decisions at the professional level. In 30 years of its existence Department of Pharmaceutical Sciences has developed itself as a full fledged centre for Pharmaceutical Education and Research. The students from this department are rated very high by most of the Industries with strong R & D base in the country. Our students are also doing very well in western and developed countries. These students are able to compete with best of the talent available elsewhere. This achievement is solely due to motivated faculty.

**Degree/Diploma Offered :** B. Pharm., M. Pharm. (5 specialization viz. Pharmaceutics, Pharmaceutical Chemistry, Pharmacology, Pharmacognosy and Pharmaceutical Biotechnology).

**Faculty position :** 16

**Number of Student enrolled :** Undergraduate – 118, Postgraduate – 25.

**Academic Innovations, Research & Development activities :**

Research in various discipline of Pharmaceutical Sciences is being carried out. Emphasis is always on Industrial application; exploitation of natural flora for economical upliftment of the population of the state. Isolation and Synthesis of potent medicinal agents and their Pharmaceutical evaluation, synthesis of drugs on commercial scale. Biopharmaceutical aspects of various dosage forms including drug interactions, development of In-vitro methods of evaluation and bioequivalence testing of marketed products.

Some of the emerging area have also drawn attention of the faculty in the department. The work on novel drug delivery system is in progress Computer aided designing and synthesis of new molecules with potential biological activities have been initiated. The standardization of Ayurvedic, and Homeopathic drugs and their formulation have been attempted. In the course of such investigation it was felt that a holistic approach for standardization of multiherbal formulation be adopted. Clinical evaluation of such drugs under controlled environment and observation was preferred, and attempt are being make to utilize facilities of Institutes, Hospital and other near by hospital for this purpose.

The quality and quantum of research shall improve if additional facilities for R & D are created. For this purpose department of Pharmaceutical Sciences is requesting for improvement of facilities at Laboratories of the Department at an estimated expenditure of 220 Lacs spread over next five years.

#### A. On Going Projects :

Sl. No	Title	Sanctioned to	Area	Funding Agency	Amount in Rs. Lakhs
1.	Studies on peatent Anti inflammatory Agents from Natural Sources	Dr. B.N. Sinha Dr. D. Sasmal	R & D	U.G.C	5.81
2.	Design and Evaluation of Transdermal Drug Delivery of selecte selected drugs	Dr. P.R.P. Verma Mrs. S.M. Verma	TAPTEC	AICTE	10.00
3.	Micro computerized identi- fication of indigenous drugs & development of standards	Prof. S.P.Bhatnagar Dr. S. Ganguly	TAPTEC	AICTE	12.00
4.	Thermodynamics Approach to Drug-Excipient Interactions	Dr. G.M Panpalia Prof. S.P. Bhatnagar	R & D Major	UGC	5.85
5.	Modernization of Physiology & Pharmacology Lab.	Dr. D. Sasmal	MODR OB	AICTE	13.65

#### B. Project Sanctioned during 2002-2003 :

Sl. No	Title	Sanctioned to	Area	Funding Agency	Amount in Rs. Lakhs
1.	Design and Evaluation of Transdermal Drug Delivery of selected drugs	Dr. P.R.P. Verma Mrs. S. M. Verma	TAPTEC	AICTE	10.00
2.	Micro computerized identi- fication of indigenous drugs & development of standards	Prof.S.P. Bhatnagar Dr. S. Ganguly	TAPTEC	AICTE	12.00
3.	Thermodynamics Approach to Drug Excipient Interactions	Dr. G.M. Panpalia Prof. S.P. Bhatnagar	R & D Major	UGC	5.85

### C. Project Completed during 2002-2003 :

Sl. No	Title	Sanctioned to	Area	Funding Agency	Amount in Rs. Lakhs
1.	Preparation of Edible Grade Pongamia Pinnata Seed Oil and its Toxicological studies for Possible Utilization in Pharmaceutical Industry	Dr. D. Sasmal Dr. B. N. Sinha	R & D	UGC	5.0
2.	Standardization and Quality control of some Herbal Drugs Recommended by WHO for Re-investigation	Dr.S. Jha	R & D	UGC	7.0
3.	Modernization & Removal of Obsolescence of the Laboratories	Head,Pharm. Sc.	MODR OB	AICTE	10.0
4.	Etho-Botanical Study of Antidiabetic Plants of Ranchi District	Dr. S. Jha	R & D	AICTE	5.0
5.	Isolation and Identification of Mycotoxins and Myco-toxin Producing Fungi in Food and Agricultural products and their Pharm-acological studies	Dr. D. Sasmal	R & D	UGC	2.58
6.	An Alternative Therapy for Kalaazar by Herbo-mineral sources	Prof. S. Samanta Dr. S. Ganguly	R & D	AICTE	5.0
7.	New Anticonvulsant Drug From Natural Sources and Search for Better Active Molecule Through Computer Aided Drug Design	Dr. D. Sasmal Dr. B.N. Sinha	R & D	AICTE	6.0
8.	Design and allocation of work under extreme envi-ronmental conditions	Dr. D. Sasmal	R & D	UGC	6.0

**D. Seminar/Conference/Short Term Course Conducted by the Department, Number of Delegates, Name of Dignitaries :**

1. A seminar on Cultivation and Utilization of Medicinal Plants of Jharkhand sponsored by AICTE was organized by the Department from 3<sup>rd</sup> March to 9<sup>th</sup> March 2003. 30 delegates and faculty members of Pharmacy Institutions participated in the seminar. Prof. S.P. Bhatnagar was the course coordinator. Distinguished speakers in the field and faculty members from the Department delivered well-informed lectures. Dr. S.K. Mukherjee, the Vice-Chancellor, Birla Institute of Technology Mesra, Ranchi inaugurated the course and valedictory lecture was delivered by Dr. S.K. Kulkarni, Professor & Dean, Pharmaceutical Sciences, Punjab University, Chandigarh.

**E. Publication by faculty :**

1. S.P. Bhatnagar, Anima Pandey "Development of Herbal hair cleanser Based on plants from Jharkhand", 2<sup>nd</sup> World Congress on Biotechnological Development of Herbal Remedies Lucknow; Feb. 2003.
2. B.N. Sinha, Bharti Dhasan P, "Chemistry and Pharmacology of *Jatropha* species (A Review)", Indian Journal of Heterocyclic Chemistry, 11 (Jan-March), 237-240 (2002).
3. P.R.P. Verma and B.K. Razdan, "Studies on *Leucaena leucocephala* seed gum : Evaluation of Suspending Properties" STP Pharm. Sciences., 2001, 11 (4), 289-293 (France).
4. P.R.P. Verma and B.K. Razdan, "Evaluation of *Leucaena leucocephala* seed gum : II. Binding Properties in Granules and Tablets" STP Pharm. Sciences., 2002, 12 (2) 1093-112 (France).
5. P.R.P. VERMA and B.K. Razdan, "Studies on *Leucaena leucocephala* seed gum : Rheological Properties" J.Sci. Ind. Res., 2002, 61, 437-443 (India).
6. P.R.P. Verma and B.K. Razdan "Studies on *Leucaena leucocephala* Seed Gum – Emulsifying Properties J. of Sci Ind. Res., 62, 2003 p 198-206.
7. S. Jha, "Pharmacological Studies on Saponin Extract of Fenugreek (*Trigonella foenum-graceum* L.) seeds with special reference to Anti-inflammatory and Anti-oxidant property", Fitoterapia (accepted in April 2002).
8. V. Purachmani and S. Jha "Standardization of *Gymnema sylvestre* with reference to gymnemagenin by HPTLC" Phytochemical Analysis (International) – Accepted 2002.
9. V. Putrachimani and S. Jha Hypoglycemic and antihypoglycemic effect of *Nyctanthus arboreus* in rabbit Fitoterapia (International) Accepted 2002.
10. V. Putrachimani and S. Jha "Standardization of *Gymnema sylvestre* with reference to gymnemagenin by HPTLC" Ind. J. of Pharm. Analysis (National) Accepted 2002.



11. Manjari Goel and S. Jha "Phytochemical study of *Moringa oleifera*" Ind. J. of Natural Products. (National) Accepted 2003.
12. S.M. Verma, K.B. Suresh, "Phytochemical Investigation of *Indigo tinctoria* Linn. Leaves", Anc. Sci. of Life, Vol. XXI (4), P 235-238, 2002.
13. S. Chandra, H.P. Sharma, S. Jha, R. Chandra and K.K. Nag "Tissue Culture Studies for Secondary metabolites production in medicinal Plants" National Symposium on Conservation and Utilization of Greenchip Wealth of Jharkhand" by Centre for Bioinformatics, Ranchi : March 2003, 36.
14. Rupa Mazumder, Avijit Mazumder, Sharmila Roy Choudhary, "Antimicrobial Potentiality of a Phenothiazine group of antipsychotic drug-prochlorperazine", Ind.J. Exp. Biol. (NISCOM Publication) : Vol. 40, July 2002, 828-830 (India).
15. Rupa Mazumder, Papiya Mitra Mazumder, D. Sasmal, "Anti-microbial activity of the mycotoxin citrinin obtained from the fungus *Penicillium citrinum*", Anc. Sc. of Life, Vol. No. XXI (3) January 2002 : 191-197 (India).
16. Rupa Mazumder, A. Mazumder, S.P. Basu, S.K. Singh and B.P. Saha, "Anti-microbial action of the leaf extract of *Lagerstroemia parviflora* Roxb." Anc. Sc. of Life, Vol. No. XXI (3) January 2002 : 198-201 (India).
17. Rupa Mazumder, A. Mazumder, S.P. Basu, S.G. Dastidar, "Emergence of *Mesua ferrea* Linn. Leaf Extract as a potent bactericide" Ancient Science of Life Vol. XXII 940, 160, 2003.
18. A. Mazumder, R. Mazumder, S.P. Basu, B.P. Saha, "Phytochemical Observation of Leaf of *Lagerstroemia parviflora* (ROXB)" Ancient Science of Life Vol. XXII (2), 21-24, 2002.
19. "Design of a package for framing marketing strategy for newly formulated vitamin C", Avijit Mazumder, Rupa Mazumder, S.P. Basu in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
20. "A Comprehensive Study of disease and prescription pattern in Urinary Tract infection", Avijit Mazumder, Sangita Kumari, S.K. Singh, Rupa Mazumder, in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
21. "A Comprehensive study of the factors affecting the sales volume of newly formulated cough syrup", Avijit Mazumder, Mukesh Kumar, Rupa Mazumder, in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
22. "The more costlier the brand is, greater will be its therapeutic efficiency: Myth or Reality" Avijit Mazumder, Ravi Shankar Prasad Singh, Rupa Mazumder, in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.

23. Avijit Mazumder, Rupa Mazumder, Sharmila Roy Choudhary, "Anti-microbial Potentiality of a Phenothiazine group of antipsychotic drug-prochlorperazine", Ind. J. Exp. Biol. (NISCOM Publication) : Vol. 40, July 2002, 8280830 (India).
24. "Design of a package for framing marketing strategy for newly formulated vitamin C", Avijit Mazumder, Rupa Mazumder, S.P. Basu, in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
25. "A Comparative study on Anti-microbial activity of different parts of *Mesua ferrea* Linn", Rupa Mazumder, Avijit Mazumder, S.K. Singh, S.P. Basu, S.G. Dastidar in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
26. "A Comprehensive Study of disease and prescription pattern in Urinary Tract infection" Avijit Mazumder, Sangita Kumari, S.K. Singh, Rupa Mazumder, in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
27. "A Comprehensive study of the factors affecting the sales volume of newly formulated cough syrup", Avijit Mazumder, Mukesh Kumar, Rupa Mazumder, in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
28. "The more costlier the brand is, greater will be its therapeutic efficiency: Myth or reality" Avijit Mazumder, Ravi Shankar Prasad Singh, Rupa Mazumder, in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune December 13<sup>th</sup> to 15<sup>th</sup>, 2002.
29. K. Jayaram Kumar, Surjeet Kumar and S.P. Bhatnagar "Continuous Education Program –The missing link-Retrieval of traditional Knowledge", 54<sup>th</sup> I.P.C. Pune 2002.
30. Antiulcer effects of *Gmelina arborea* Roxb in acetylsalicylic acid induced ulcer in rats, Sangita Kumari, Papiya Mitra Mazumder and D. Sasmal Paper presented in 54<sup>th</sup> Indian Pharmaceutical Congress, Pune, Dec. 13-15 (2002).

\* \* \*

# DEPARTMENT OF POLYMER ENGINEERING

The Department of Polymer Engineering offers an undergraduate programme leading to the B.E. in Polymer Engineering and proposes to offer ME (Polymer Engineering) shortly. The department also offers facilities for Ph. D. programme. The faculty members of the Department are actively engaged in modernization and development of various laboratories, and research and developmental work. During this academic year the Department also have taken up several testing work for local industries.

The department has modern and sophisticated laboratory and workshop facilities like Polymer Synthesis Laboratory, Polymer Characterization Laboratory, Polymer Processing Workshop, Mould Design and Manufacture Facility. The Polymer Characterization instruments include an IR spectrometer, Wide angle X-Ray HAAKE Cone and Plate Viscometer HAAKE Torque Rheometer, HAAKE Capillary Rheometer etc. Polymer processing workshop has facilities for Injection Moulding (DGP Windsor), Extrusion (Kolsite), Blow moulding, Compression Moulding, Thermoforming, Hot Air Welding (Leicester), Two Roll Mill, FRP Fabrication, MCP HEK Vacuum Casting system etc.

## Activities of the Department :

- ◆ This academic year the laboratory and Workshop Facilities were augmented by addition of the following equipment: Pelletizer, Kolsite, Vacuum Casting machine MCP HEK 001LC, with curing chambers, 10 kg Electronic Balance, Million Megaohm meter, Dielectric Breakdown Voltage tester, Static Load Deflection tester. The Department is in the process of procuring Oscillating Disc Rheometer for rubber Conditioning Chamber etc.
- ◆ The Department conducted a one day Laboratory course on Polymer Identification and Processing for B/Tech 3<sup>rd</sup> year students of "Metallurgical and Materials Engineering" of NIFFT, Ranchi.
- ◆ The Department carried out testing work for Local industries, Usha Martin, Schenck Jenson Nicholson, and Gammon (India) Ltd.
- ◆ The Department in collaboration with BIT Extension Centre, Muscat is conducting Integrated Industrial Training Programme, at Amiantit Oman Company to train operators in Thermoplastic pipe plant and Roto moulding plant.
- ◆ Faculty of the Department also participated in teaching in other Departmental courses, namely M.Sc. Biomedical Instrumentation, M. Tech in Fuels and Combustion, M. Tech New Materials Processing.

## Students Activities :

- ◆ Students of the Department visited International Exhibition, Plastindia 2003, held at Delhi, during February 15<sup>th</sup> to 20<sup>th</sup>.
  - ◆ The first batch of the Department has graduated in 2001, and the alumni of the Department are making good impressions in Academics and Industry. Sri Anirudh Singh has received admission with scholarship from Deptt of Polymer Science, University of Akron, one of the premier Institute of the world. Sri Gautam Mishra has also got acceptance from UK Universities.
2. **Degree/ Diploma Offered :** BE (Polymer Engineering)
  3. **Faculty Position :** Professor – 1, Lecturers – 4, Associate Lecturers – 2.
  4. **Number of enrolled :** 19
  5. Academic Innovations, Research & Development activities.

## A. Ongoing Project :

1. Sri Sanjay Datta, Lecturer is the Principal investigator of an AICTE sponsored project "Development of grooved Rubber Pads for Indian Railways", of Rs. 7.90 lacs for three years. Date of Sanction - 23.2.01.

## B. Project submitted during the year 2002-2003

1. Synthesis of Stereo Lithographic Resins for ramped Prototyping, Submitted to Department of Science and Technology, Govt. of India, (under R&D Scheme), 18 lacs, Professor Chandan Guria Principal Investigator, and Dr. P. Mukhopadhyay, Senior Lecturer and Sri G. Sarkhel, Lecturer as Co-Investigator.

## C. Publication by Faculty :

### *National journals*

1. Dr. Paramartha Mukhopadhyay, and M. Mukherjee, "Process Control in Injection Moulding" presented by Dr. P Mukhopadhyay at All India workshop on Application of Mechatronics in Indian Scenarios at Ranchi. During September 21<sup>st</sup>–22<sup>nd</sup>, 2002. Organized by B.I.T. Mesra Ranchi.
2. Sri. Kaushik Kumar, and M. Mukherjee, "Economics of Vacuum Casting as prototyping method-a case study" presented by Sri Kaushik Kumar at 20<sup>th</sup> AIMTDR conference, organized by Department of Production Engineering between 13-15<sup>th</sup> December 2002 at BIT Mesra Ranchi.
3. Sri. Gautam Sarkhel, Lecturer, presented paper entitled "Effect of Melamine-Formaldehyde Resin on Vinyl acetate Butyl acrylate Emulsion Co polymer based paints", at "Symposium on Advances in Polymeric Building Materials", 6-7<sup>th</sup> March, 2003, organized by Central Building Research Institute. Roorkee, 247 667. India.

### **G. Seminar/Symposium/Short term course attended by faculty members:**

1. Dr. Paramartha Mukhopadhyay, attended a workshop on "Furnace Design & Fuel Economic" during 16<sup>th</sup>-17<sup>th</sup> August 2002 at Kolkata, organized by Indian Institute of Chemical Engineers, Calcutta Regional Centre and Petroleum Conservation Research Association.
2. Dr. Paramartha Mukhopadhyay, Lecturer, attended All India workshop on Application of Mechatronics in Indian Scenarios at Ranchi. During September 21<sup>st</sup> -22<sup>nd</sup>, 2002. Organized by B.I.T. Mesra Ranchi.
3. Sri. Kaushik Kumar, Associate Lecturer attended 20<sup>th</sup> AIMTDR conference, organized by Department of Production Engineering between 13-15<sup>th</sup> December '2002 at BIT Mesra Ranchi.
4. Sri Kaushik Kumar, Associate Lecturer, attended a short term training course on "Rapid Prototype Development" organized by Central Mechanical Engineering Research Institute, Durgapur from 3-7<sup>th</sup> Feb. 2003.
5. Sri. Gautam Sarkhel, Lecturer attended National Conference on "High Performance Polymer & its applications". 7<sup>th</sup> December 2002, organized by Jadavpur University.
6. Sri. Gautam Sarkhel, Lecturer attended Skill & Technology Upgradation Programme on Rubber processing and Product Manufacturing. February 3-7<sup>th</sup>, 2003, organized by Rubber Technology Centre, I.I.T. Kharagpur -721 302.
7. Sri. Gautam Sarkhel, Lecturer attended "Symposium on Advances in Polymeric Building Materials", 6-7<sup>th</sup> March, 2003, organized by Central Building Research Institute. Roorkee -247 667. India.
8. Dr. (Mrs) M. Mukherjee, Professor, attended "Workshop on principles and Applications of Adsorption", on 28<sup>th</sup> December, 2002 at Calcutta, organized by Calcutta Regional Centre Indian Institute of Chemical Engineers, in collaboration with Deptt. of Chemical Engineering, Jadavpur University and Calcutta University.

\* \* \*

# DEPARTMENT OF PRODUCTION ENGINEERING

The Department of Production Engineering since its inception in 1964 has been trying to impart quality education to under graduates and train them to meet the demands of the manufacturing industry. Department of production Engineering offers under graduate and postgraduate courses in Production Engineering and Automated Manufacturing Systems. The department has established links with the industry, R&D organizations, consultancy organizations and academic institutes of the near by area in furtherance of the cause of manufacturing engineering. The department sees itself as the pathfinder of emerging technologies and techniques in the area of production engineering, develops students to be technologically and managerially sound to meet the challenges of the open market in the present era of globalization.

The main objective of production engineering is integration of technology with management in planning and controlling the design, development and operation of manufacturing system. Rapid advances in manufacturing technology, e.g., computer controlled processes and management information systems, ERP and new manufacturing concepts like TPS, agile manufacturing, pull system etc., are reinforcing the recognition of technological, organizational, economics and human factors. Furthermore, specialized training in manufacturing technology is necessary for the young engineers to bring fourth their potential. Directed at the growing requirements of industry in India and abroad department's interest encompasses on providing all round development requirements to would be production executives and manufacturing specialists. The structure of courses of the production engineering is based on an analysis of not only these needs but reflects the interrelationships among science, engineering, production and management.

The Department also aim at assisting manufacturing industry. An increasing number of university-industry collaborations is shaping through sandwich training programmes, short term courses, and workshops, collaboration and support from industry for both laboratory as well as Industry based studies. The cherish & major long-range goal is to make this Department a Centre of excellence in teaching and research in various aspects of Production Engineering. In this respect, the Department has been able to establish well-equipped laboratories, upgrades the syllabi on regular basis and carries out its teaching and academic programme through its qualified and experienced faculty and visiting professors. Both our graduates and post-graduates have been doing well in industry and other Universities of higher learning in India and abroad. Some important research achievements of the department are in the field of forming Technology for New Materials, Manufacturing Automation & Robotics for specific Tasks and Work Space Design Considering Ergonomic Parameters.

## **Central Facilities**

### **(a) Nontraditional Manufacturing Process Laboratory**

In the modern manufacturing world flexibility is the key issue for manufacturing. 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. In today's manufacturing world various materials are of HSTR (High Strength Temperature Resistant) type. In order to process those materials one needs some manufacturing processes, which are really able to tackle hard and temperature resistant materials. Due to this very reason a modern nontraditional manufacturing laboratory has been set up at the department of Production Engineering.

#### **◆ Wire EDM**

In order to impart flexibility in the manufacturing process wire EDM can play a very important role in manufacturing complex items. It is completely computer controlled and the hardened materials can be easily processed with substantial ease and satisfactory levels of accuracy. A sophisticated Indian make Maxi cut Wire EDM machine has been installed in the nontraditional manufacturing laboratory.

#### **◆ Laser Cutting Welding Machine**

Laser machining is an important nontraditional manufacturing application. It is becoming more and more popular due to its flexibility, accuracy and ease of operation. One laser-processing machine set has been mounted in the nontraditional laboratory of the department. The machine can be used for welding, drilling, cutting, cladding, hardening, of different materials and composites. In future the department is planning to develop a prototyping machines through laser cutting.

#### **◆ Water Jet Machining**

Water jet machining is also one of the important nontraditional manufacturing processes. A full-fledged hydraulically controlled abrasive water jet machine has been installed in the department of Production Engineering funded under the AICTE project. This machine is suitable for cutting hard material and very soft material. In future the system will be developed as a cutting tool for Indian mining industry.

### **(b) Mechatronics Laboratory**

Mechatronics laboratory is equipped with Mechatronics kit. In the kit there is controller which is integrated with U-Bracket, linear slides, rotary tables, conveyor and X-Y position table. Three simulation packages namely, Hydraulic Simulator, Electrical Simulator and PLC Simulator are also equipped in the system. The system is suitable for providing training related to simulation of various motions.

### (c) Flexible Manufacturing System Laboratory

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 –

- ◆ CNC Trainer Lathe (EMCO)
- ◆ CNC Trainer Milling Machine (EMCO)
- ◆ TRIAC CNC Milling Machine
- ◆ ORAC CNC Trainer Lathe
- ◆ Conveying System with Conveyor
- ◆ Two Move Master Robots
- ◆ PC and PLC Control System for coordinating control actions of different elements (DENFORD)
- ◆ Co-ordinate Measuring Machine (CMM-KEMCO)
- ◆ Flexible Machining Cell Comprising of Machining Center
- ◆ Linear Movement continuous path robot

### (d) Ergonomics and work design Laboratory

Modern breath by Exercise test systems : (model plumbo-lab-Wx-505) programmable ergo metr is capable of memorizing a large number of exercise protocols. The system measures various body parameters such as oxygen consumption, Heat rate, Respiratory quotient, VO<sub>2</sub>/Kg METs, Kcals, VE, VE/QO<sub>2</sub>, VECO<sub>2</sub> tidal volume, cardiac output, Strike volume, Anaerobic threshold, etc. These parameters are of utmost importance for arrangement, design and allocation work as well as design of work cycles in case of heavy and moderately heavy workloads in order to improve the industrial productivity and at the same time to enhance physical well being of the workers.

2. **Degree/Diploma Offered** : B.E. (Production), M.E. (AMS) and Ph. D.
3. **Faculty Position** : Professor – 1, Readers – 5, Lecturers – 8.
4. **Number of Students enrolled** : Undergraduate – 60, Postgraduate –3, Ph. D. –12.
5. Academic Innovations, Research & Development activities.



### A. Ongoing Projects :

Sl. No	Project Title	Funding Agency	Date of Sanction	Sanction Amount of the Project	Duration
1.	Electro Chemical Machining	U.G.C.	April 2003	Rs.5.6 Lacs	Two Years
2.	Development of Manufacturing Mechatronics Laboratory	A.I.C.T.E.	4.3.2002	Rs. 12 Lacs	Two Years

### B. Project Completed/Submitted during the year 2002-2003.

Sl. No	Project Title	Funding Agency	Date of Sanction	Sanction Amount of the Project	Duration
1.	Development of Manufacturing Mechatronics Design Laboratory	A.I.C.T.E. (TAPTEC)	March 2003	Rs. 5 Lacs	Two Years
2.	FIST Programme	A.I.C.T.E.	2001	Rs. 49 Lacs	Two Years

### C. Seminar/Conference/Short Term Course Conducted by the Department

Sl. No	Name of the Programme	No. of Participants
1.	"All India Workshop on Application of Mechatronics in Indian Scenario" in collaboration with Institution of Engineers (India), Jharkhand State Centre during September 28-29, 2002.	100
2.	"20 <sup>th</sup> All India Manufacturing Technology Design & Research (AIMTDR) Conference" during December 13-15, 2002	10 (Foreign) 250 (Indian)
3.	Lecturer on "Recent Trend in Manufacturing" 2002 by Dr. A.K. Jha, Reader, Department of Mechanical Engineering, IT/BHU, U.P.	100

### D. Publication by the Faculty Members

#### National Journals :

1. Saranjit Singh & Surender Kumar, "A Computer simulation technique to estimate die load and energy during sinter-forging process", Journal of Institution of Engineers (I), Vol. 83, pp: 27-32, Sep. 2002.

## **Conference :**

### ***International***

1. Vinay Sharma & Surender Kumar, "Water jet cutting system for Indian coal mines", Advanced Manufacturing Technology, 29-31 Jan. 2003 at V.J.T.I. Mumbai.
2. Sanjay Jha & Surender Kumar, "Value engineering and effective tool for improving productivity of rural artifacts manufacturing with special reference to Jharkhand state", ICME, Dhaka, Bangladesh, 2002.
3. S. Chattopadhyaya & Alok Verma, "IT based material handling system", ICME, Dhaka, Bangladesh, 2002.

### ***National***

1. Surender Kumar, 'Mechatronics in manufacturing industry', All India Workshop on Application of Mechatronics in Indian Scenario in collaboration with Institution of Engineers (India), Jharkhand State Centre during September 28-29, 2003.
2. Surender Kumar & Ritesh Singh, "Development of Mechatronics Press", All India Workshop on Application of Mechatronics in Indian Scenario in collaboration with Institution of Engineers (India), Jharkhand State Centre during September 28-29.
3. Surender Kumar & Ritesh Singh, "Development of Mechatronically Controlled Hydraulic Press for computerized monitoring of results", 20<sup>th</sup>, All India Manufacturing Technology Design & Research (AIMTDR) Conference during December 13-15, 2002.
4. Surender kumar & Retesh Singh, "Lubricants & Lubrication Mechanisms during rolling", R & D SAIL, Ranchi.
5. B.K. Singh, "Design planning an implementation strategies for manufacturing Mechatronics systems", All India Workshop on Application of Mechatronics in Indian Scenario in collaboration with Institution of Engineers (India), Jharkhand State Centre during September 28-29, 2002.
6. B.K. Singh, "Low cost manufacturing automation : concepts and philosophies", All India Workshop on Application of Mechatronics in Indian Scenario in collaboration with Institution of Engineers (India), Jharkhand State Centre during September 28-29, 2002.
7. B.K. Singh, Effect of resistance welding variables on the strength resistance sport welding joints", 20<sup>th</sup> All India Manufacturing Technology Design & Research (AIMTDR) Conference during December 13-15, 2002.
8. Vinay Sharma & Surender Kumar, "Design of Mechatronics products and systems", All India Workshop on Application of Mechatronics in Indian Scenario in collaboration with Institution of Engineers (India), Jharkhand State Centre during September 28-29, 2002.

9. Vinay Sharma & Surender Kumar, "Knowledge based computer aided system for mould design in automated die casting process", 20<sup>th</sup> All India Manufacturing Technology Design & Research (AIMTDR) Conference during December 13-15, 2002.
10. S. Chattopadhyaya & Surender Kumar, "Built in diagnosis to a future technology for micro manufacturing : a case study on an Indian rubber product making unit", 20<sup>th</sup> All India Manufacturing Technology Design & Research (AIMTDR) Conference during December 13-15, 2002,
11. Sanjay Jha, Ritesh Singh & Surender Kumar, "A cost effective approach for improving productivity of rural artifacts manufacturing with special reference to Jharkhand State", 20<sup>th</sup> All India Manufacturing Technology Design & Research (AIMTDR) Conference during December 13-15, 2002.
12. Sanjay Jha & Surender Kumar, "Mechatronics integration and Complexity involved in CAD/CAM workstation", 18<sup>th</sup> National convention of Mechanical Engineers on Emerging trends in Mechatronics for automation, Rourkela Nov. 9-10, 2002.
13. Sanjay Jha & Surender Kumar, "Application of value engineering on Aluminium layer artifacts manufacturing", XIII National on global competitiveness through value engineering, Mumbai, Nov. 23, 2002.
14. Sanjay Jha & Surender Kumar, "Role and application of Mechatronics in CAD/CAM workstation design", All India Workshop on Application of Mechatronics in Indian Scenario in collaboration with Institution of Engineers (India), Jharkhand State Centre during September 28-29, 2002.

### **3. Books/Monographs :**

1. Surender Kumar, Dr. S.K. Mukherjee, Shri Vinay Sharma, "IT Based Manufacturing" Narosa Publications, 2002.

### **E. Seminar/Conference/Short Term Course attended by Faculty Members.**

1. Dr. S. Kumar has delivered a lecture on "JIT based manufacturing" in the Summer school CAD, CAM and CNC at RIT Jamshedpur, June 2002.
2. Dr. S. Kumar has delivered a lecturer on "Waste free manufacturing" in the Summer school CAD, CAM and CNC at RIT Jamshedpur, June 2002.
3. Dr. S. Kumar has delivered a lecture on "Blue Tooth Applications in Mechatronics" in All India Workshop on Mechatronics 2002.
4. Dr. S. Kumar has presented a paper at XIII National on global Competitiveness through value engineering, Mumbai, Nov. 23, 2002.
5. Dr. S. Kumar has presented a paper in the 20<sup>th</sup> AIMTDR Conference at BIT Mesra, in December 2002.

6. Dr. B.K. Singh has delivered a lecture and chaired a session during All India Workshop on Mechatronics.
7. Dr. B.K. Singh has presented a paper and chaired a session during 20<sup>th</sup> AIMTDR Conference at BIT Mesra, in December 2002.
8. Mr. Vinay Sharma has attended a two-week summer school "FEM Applications" at IIT Kharagpur in June, 2002.
9. Mr. Vinay Sharma has delivered a lecture on "Innovations in manufacturing process" in the Summer school CAD, CAM and CNC at RIT Jamshedpur, June 2002.
10. Mr. Vinay Sharm has delivered a lecture on in the All India Workshop on Mechatronics.
11. Mr. Vinay Sharma has attended, presented a paper and was among the Joint organizing secretaries in the 20<sup>th</sup> All India Manufacturing Technology Design & Research (AIMTDR) Conference during December 13-15, 2002.
12. Mr. S. Chattopdhyaya attended a three weeklong short-term course at Jadavpur University on "CAN in Engineering", in December 2002.
13. Mr. S. Chattopdhyaya attended a three weeklong short-term course at Jadavpur University, on "Quantitative Techniques" in July 2002.
14. Mr. S. Chattopdhyaya has delivered a lecture on "Simulation and modeling of a manufacturing plant" in the Summer school on CAD, CAM and CNCF at RIT Jamshedpur, June 2002.
15. Mr. S. Chattopdhyaya attended and presented a paper and chaired one technical session in the "International Conference on Manufacturing at BUET", Dhaka Bangladesh August, 2002.
16. Mr. S. Chattopdhyaya attended and presented a paper and was among the Joint organizing secretaries in the 20<sup>th</sup> All India Manufacturing Technology Design & Research (AIMTDR) Conference during December 13-15, 2002.
17. Mr. S.K. Jha attended and presented a paper in the "International Conference on Manufacturing at BUET", Dhaka Bangladesh August 2002.
18. Mr. S.K. Jha has presented a paper in the 20<sup>th</sup> AIMTDR Conference at BIT Mesra, in December 2002.
19. Mr. S.K. Jha has presented a paper at XIII National on global competitiveness through value engineering, Mumbai, Nov. 23, 2002.
20. Mr. Saranjit Singh has participated in the AICTE sponsored Staff Development Programme on "General Management", BIT Mesra, Ranchi.
21. Mr. Ritesh Kumar Singh, has delivered a lecture on "Development of A Mechatronically Controlled Hydraulic Press For Computerized Monitoring Of Results" in the All India Workshop on Mechatronics.

## DEPARTMENT OF PHYSICAL EDUCATION & SPORTS

The Department possesses a well planned sport complex. It has all the necessary facilities to conduct indoor games, outdoor games, track events, multigymnastics on a large scale. Work has been already undertaken to construct a new Indoor Badminton complex which will be having all facilities to conduct the tournaments at highest level. It is expected that the facilities will be operational within a year. Sri Rama Shankar Singh Sports Officer was awarded the Doctor of Philosophy from Ranchi University. He has also been nominated as Vice President of Jharkhand Women Hockey Association.

**Faculty Position :** Lecturer – 1, Senior Sport Officer –1.

### Activities of the year:

1. Team participated in All India Inter University Best Physique/ Body building Competition held at L.N.I.P.E. Gwalior from 26.12.02 to 2.01.03.
2. Lawn Tennis team participated in North East Zone Inter University competition held at A.M.U. Aligarh from 24.12.02 to 31.12.01.
3. Cricket Team participated in Chetan Devraj Cricket Memorial Tournament held in B.I.T. Mesra, from 14.11.02 to 19.11.02.
4. Best Physique Competition for Men organised by Phy. Edu. & Sport Department in C.A.T. on 03.10. 02.
5. Football Inter Hostel final match for men organised by Phy. Edu. & Sports Dept. at Football Stadium on 20.01. 2003.
6. Annual Athletic meet was organised from 31.01.03 to 2.02. 2003. at B.I.T. in which students of B.I.T. and B.I.T. extension centres from Allahabad, Lalpur and University Polytechnic participated.
7. Inter Hostel Final Volleyball Tournament was held on 7.02.2003 at Volleyball Stadium inside the Sports Complex. Hostel No. 6 won the Championship.
8. Inter Hostel Final Hockey tournament was held on 22.02. 2003 at Hockey Stadium, Hostel No. 7 won the Championship.
9. Inter Hostel Final Basketball tournament for Men & Women held on 29.03.2002 at Basketball stadium in which Hostel No. 7 & 2k1 batch (Girls) won the Championship.
10. Inter Hostel Final Cricket tournament was held on 30.03. 2003 at Inst. Cricket field Hostel –7 won the Championship for the session 2002-2003.
11. Final Match for Badminton game was organised on 7.04.2003 inside the Gym and Prizes for Indoor activities like Carrom. T.T. Chess & Badminton game were distributed by the chief guest.

## DEPARTMENT OF REMOTE SENSING

India as a part of its strong space Programme has launched several remote sensing satellites for mapping and monitoring the natural wealth of the nation. In future, many other satellites with better resolution and enhanced features are planned. This calls for a large number of trained personnel to take up the above mission. Looking to the growing significance of Remote Sensing (RS), one M. Tech. Programme in Remote Sensing has been introduced from July 1997 at B.I.T., Mesra. The course is designed to introduce Remote Sensing and GIS techniques-Principles, Photogrammetry, Digital Image Processing of satellite data, and its application towards mapping and management of various natural resources. The Image processing and GIS Lab has been strengthened by adding 15 IMB P IV computers and Geometica 8.1 Image Processing software to the existing Four Intergraph TD 260 desktops and one Wipro Voyager machine. Department is also in possession of Magellan Promark V Global Positioning System (GPS), Umax Scanner, and software for GIS, Cartography and Digital Image Processing such as Arc Info 7.2, Image Analyst, Modular GIS Environment (MGE), I/RAS, Geomedia Professional, Geomedia, Microstation SE, Oracle 8.0

**Degree/Diploma Offered :** M. Tech. (Remote Sensing)., Ph. D.

**Faculty Position :** Professor – 1, Readers – 2, Lecturers – 3, Associate Lecturer – 1.

**Number of Student Enrolled :** M. Tech. (Remote Sensing) – 39, Ph.D. –3.

**Academic Innovations, Research & Development activities**

### A. Ongoing Project :

Funding agency	Amount (Rs.)	Duration (Y ears)	Collaboration if any
NHPC Ltd., New Delhi	3,40,000.00	(1 <sup>st</sup> May 2000) One	MECON Ltd.,
Orient Paper Mills Amlai, M.P	2,08,000.00	(1 <sup>st</sup> Jan. 2003) 6 months	Nil

### B. Project submitted during the year 2002-2003.

1. "Water recourses prospecting survey for OPM" To OPM, Amlai, M.P.
2. "Creation of GIS data base for Rural Roads networks under PMGSY" To CRR I New Delhi.
3. "Establishment of District NRDMS Centre for Ranchi (Jharkhand) & Creation of Geo-Spatial Data Base for the Development of Decision Support System" To DST New Delhi.

### **C. Publication by faculty :**

#### ***International journals***

1. A.C. Pandey and M.S. Nathawat, "Hydrogeomorphological Mapping", GIS Development, Vol. 6, Issue 5, 2002.
2. Srivastava, A. "Groundwater Quality, Aquifer Geometry and Basement Topography" Jr. of Spatial Hydrology, Vol. 2, No. 2, 2002.

#### ***International Conference Proceedings***

1. M. Ghosh, S. Lala, and M.S. Nathawat, Spatial Decision Support System using GIS based Infrastructures Planning Health & Education for Ranchi District, Proc. MAP INDIA, New Delhi, 2002.
2. Vijayendra MR, M.S. Nathawat, 2003 Megalopolis development along the Bangalore – Mysore urban corridor using Remote Sensing and GIS techniques, Proc. Map India 2002, 28-31, January 2003.
3. Upasana, M.S. Nathawat, 2003 Selection of Potential Waste Disposal Sites Around Ranchi Urban Complex Using Remote Sensing and GIS techniques, Proc. Map India 2003 28-31, January 2003.
4. A. Srivastava, Tectonic Zonation using Mult-criteria Decision Making (Mcdm) Techniques : A Case Study of Kosi Fan, India. Proc. Map Asia, Aug, 2002, Bangkok, Thailand.
5. R.N.K. Sharma, A.K. Sinha, M.S. Nathawat, and A.K. Pandey, Establishing a Corridor for the Elephants of Jharkhand a Corridor for the Elephants of Jharkhand, India using Remote Sensing and GIS, Proc. Map Asia, 7-9 Aug. 2002, Bangkok, Thailand.
6. M.S. Nathawat, GIS A Holistic Approach, Proc. 23<sup>rd</sup> Asian Conference on Remote Sensing, Kathmandu, Nepal, Nov. 2002.
7. N. Patel Spectral Discrimination of Rock Types in Aravalli Ranges Proc. 23<sup>rd</sup> Asian Conference on Remote Sensing, Kathmandu, Nepal, Nov. 2002.
8. R.N.K. Sharma Evaluation of Biological Richness using Remote Sensing and GIS, Proc. 23<sup>rd</sup> Asian Conference on Remote Sensing, Nov. 2002 Kathmandu, Nepal.

#### ***National Conference Proceedings***

1. A.C. Pandey, M.S. Nathawat, A. Srivastava, V.S. Rathore "Water Resource Mapping and Management Using Remote Sensing Technique: A case Study in panchkula Dist., Haryana," In Processing of National Conference on Water Resource Development & Management, Feb-9-10, 2002, B.I.T., Ranchi Jharkhand.
2. R.N.K. Sharma "Evaluation of Bauxite Active Mining Area in Lohardaga District of Jharkhand Using GIS and Remote Sensing", in processing of ISPRS, Ahmedabad, 2002.

3. M. S. Nathawat, A. Srivastava, V.S. Rathore, "Watershed Management in Chota gamharia Macro watershed using Remote Sensing & GIS", in proceedings of National conference on Water Resources Management in Jharkhand state, held at the Institution of Engineers, 6-7 August, 2002.
4. A.K. Singh, "Hydrogeology and Groundwater prospects of Ranchi District using Remote Sensing Data and GIS", Proc. National Seminar on Water Resources Development and Management, Feb. 9-10, 2002, BIT Ranchi.

**D. Seminar/Symposium/Short-term course attended by faculty members.**

1. 23<sup>rd</sup> Asian Conference on Remote Sensing, Nov. 2002 Kathmandu, Nepal.
2. National Conference on Water Resources Management in Jharkhand State, held at the Institution of Engineers, 6-7 August, 2002, Ranchi.
3. National Conference on Water Resource Development & Management, Feb-9-10, 2002, BIT., Ranchi Jharkhand.
4. Map Asia, 7-9, Aug. 2002, Bangkok, Thailand.
5. MAP INDIA, New Delhi, 2002.

**E. Award/Nomination of faculty by important organization.**

1. Dr. M.S. Nathawat Chaired two sessions of Asian Conference on Remote Sensing held at Kathmandu.
2. Dr. N. Patel and Dr. A.K. Singh Co- Chaired one session each at Asian Conference on Remote Sensing held at Kathmandu.

\* \* \*



## DEPARTMENT OF SPACE ENGINEERING & ROCKETRY

The Department is actively engaged in modernization and development of its various laboratories. The faculty members have carried out and guided considerable R & D work in the broad areas of Aerodynamics, Propellant Technology, Combustion, Rocket Propulsion and Composite Materials.

In addition to the exiting M.E. Programme in Space Engineering and Rocketry with two specializations, viz. Aerodynamics and Rocket Propulsion started in 1968, the Department has started an M. Tech. Programme in Fuels and Combustion on receipt of approval from AICTE. There are ten seats and the admission eligibility is B.E. in Mechanical/ Chemical Engg. or M.Sc. in Chemistry.

The research work carried out during the period of Report is summarized below:

### **Aerodynamics Division**

Extensive work has been done on the measurement of unsteady pressures around typical protrusion of a launch vehicle (PSLV) at Supersonic speeds. Kulite – make unsteady pressure transducer, together with OROS software were used. Data were analysed. This study was carried out under RESPOND Project from ISRO. Results were presented during RESPOND meet at Bangalore. Further experiments and analysis of results are being done.

Use of the above facilities were also made to study the flow field around typical protrusion mounted on a cone – cylinder model at Supersonic Speed. Unsteady pressures obtained are useful for missile and rocket applications.

Flow field in the base region of a cone – cylinder model at Supersonic Speed was obtained by making pressure measurement in the base region. Using this data, base drag was estimated. Effect of nose shape on the base drag has been obtained. These results are useful for prediction of jet off base drag of missiles and rockets.

Computations have been made to obtain nozzle flow field by solving quasi 1-D, unsteady Euler equations using Mac Cormack's explicit scheme. Algorithm is validated by comparing with available results in literature.

Flow past NACA 0010 airfoil at Subsonic and Transonic speeds have been obtained by using transonic small perturbation theory. Small perturbation equations are solved to capture the flow field around airfoil in Mach number range of 0.5 to 0.9. Results are validate using available results.

Shock capturing technique has been adopted to obtain flow field around 2-D compression corner at Supersonic Speed. Euler equations were solved using finite difference techniques. Results also compared with corresponding exact solutions.

Experiments have been made in the subsonic tunnel to obtain flow field around typical high rise buildings under a UGC Project. Experiments consisted flow visualization, measurement of static and r m s pressures. Effect of gap between buildings were studied. Very high unsteady pressure have been recorded when the buildings are at a very close distance. Details are being compiled and analysed. This study is being carried out UGC Project.

Various subsystems of existing Schlieren System of Supersonic Wind Tunnel are being modified/replaced to improve the quality of the results.

### **Propellant Technology Division**

The successful utilization of newly developed heterogeneous gelled flues in liquid rocket motor or in altititude control thrusts depends on clear and in-depth understanding of their complex flow behaviour under varying operating conditions. An experimental setup comprising of storage tank, fuel reservoir, office adapters, pressure feed lines and efflux container has been designed along with necessary instrumentation to study the flow behaviour of metallised gelled propellants at varying shear rates. Efforts are being made to develop a Computer Program for deduction and analysis of data acquired from flow meter. The Program will be ideally suitable for pseudoplastic and thixotropic materials.

The R & D work on Eco-friendly composite solid propellant systems, initiated two years ago is progressing well. New propellant formulations have been developed with acceptable burn rates and thermal decomposition characteristics. The dual catalysts which not only enhance the burn rate but also phase stabilize the ammonium nitrate oxidizer, have been discovered. Studies with incorporation of two catalysts double catalyst concept-to enhance activity of oxidizer and binder separately, have been initiated and the initial results are encouraging. The thermal degradation behaviour of Hydroxy-terminated Polybutadiene (HTPB), the main polymeric fuel used in composite solid propellant, has been investigated with and without catalysts using a thermo gravimetric analyzer.

### **Rocket Propulsion Division**

Extensive Static Tests have been carried out to find the effect of various parameters on the performance characteristics of PVC-AP solid propellant motor using the Auto Firing Console and associated software. Erosive burning phenomenon has been recognized to affect the burning characteristics of large solid rocket motors. In view of this, efforts have been made to predict the effect of gas flow velocity and combustion chamber pressure on burn rate enhancement due to cross flow of combustion products using FEM. Extensive work has also been carried out to determine the effect of various parameters on the regression rate of PVC Plastisol burning in the stream of gaseous oxygen.

A test facility has been set-up for studying the performance of herringbone-grooved journal bearing. The assembly consists of a vertically placed rotor supported by two

herringbone –grooved journal bearings, two aerostatic bearings (for start/stop transient operations) and an aerostatic thrust bearing. The rotor is to be run by expanding the compressed air/nitrogen (7 atm max.) through a turbine fitted at one end of the rotor. Major modifications are being introduced in design, fabrication, assembly and testing procedures to achieve further improvement.

Software has also been developed to obtain the groove parameters of herringbone-grooved bearing and to obtain the coordinates for preparation of herringbone using Auto CAD.

A transistor based switching circuit, which will act as a signal conditioner, for recording voltage signal at an interval of 10-14 micro second has developed. This unit is being used for ignition delay measurement for liquid, propellants and also to be used for studying flow behaviour of gel –propellants. Data can be recorded in a computer through a data acquisition card.

### Composite Materials Division

Extensive research has been carried out in the Department for determining the mechanical properties of composite materials under static and dynamic loading conditions by using unidirectional and bi-directional **Carbon Fire Reinforced Composite (CFRC) and Glass Fibre Reinforced Composite (GFRC)**. This study has wide application towards characterization of composite materials in space vehicles. Fracture behaviour of short fibre composites has been determined by fractographic and experimental methods. Elaborate research has been carried out to determine the effect of various loading condition, the Cumulative Damage and Residual Strength of composite materials in order to predict safe life. Work has also been progressed in the area of elasto-buckling studies and vibrational effect on stiffened composite plates. Significant progress has been made towards fatigue characterization of different types of adhesive lap joints of CRFC.

**Degree/Diploma Offered :** M.E. (Space Engineering Rocketry), M.Tech (Fuels & Combustion).

**Faculty Position :** Professors – 4, Reader- 1, Lecturers – 3.

**Number of Students Enrolled :** M.E. (S.E.R) – 8, M.Tech. (F& C) – 7.

Academic Innovations, Research & Development activities.

#### A. Ongoing Projects :

Project Title	Funding agency	Date of sanction	Sanctioned amount of Project	Duration
Transonic Buffeting : Shock Wave Boundary Layer Interaction	RESPOND	Feb 2002	9.96 lac	3 years

Project Title	Funding agency	Date of sanction	Sanctioned amount of Project	Duration
Combustion Studies on Ecofriendly Composite Solid Propellants	UGC	Dec 2000	4.908 lac	3 years
Studies on Flow Behaviour of heterogeneous Gelled Propellants	AICTE	Jul 2001	9.20 lac	3 years

### **B. Projects Sanctioned during the 2002-2003.**

Project Title	Funding agency	Date of sanction	Sanctioned amount of Project	Duration
Development of Cryogenic Propulsion System	UGC (SAP)	Apr 2002	49.0 lac	5 years
Manufacturing and Testing of Herringbone-grooved Journal Bearing for Cryogenic Turbo expander Rotors	DST	Feb 2003	8.9 lac	3 years

### **C. Project Completed during the year 2002-2003.**

Project Title	Funding agency	Date of sanction	Sanctioned amount of Project	Duration
Development of Herringbone grooved Journal Bearing For Cryogenic Turbo expander Rotors	DST	Mar1999	2.415 lac	3 years

### **D. Project submitted during the year 2002-2003.**

Supersonic Wind Tunnel Facility DST (FIST) 2003 247.00 lac Experimental investigation of Flow field on High rise Buildings in Tandem. UGC 2003 9.90 lac

Augmentation of Supersonic Tunnel AR & DB 2003 11.26 lac Investigation of Flow Field Around Protrusions at Supersonic Speeds. AR & DB 2003 8.95 lac

### **E. Seminar/Conference/Short Term Course conducted by the Department.**

#### ***1st International HEMSI Workshop November 12-13, 2002.***

No. of Delegates	: 40 (including from U.K. and Israel)
Chief Guest	: Sri Inder Singh Namdhari, Speaker, Jharkhand
President	: Dr. Haridwar Singh, Director HEMRL
Guest of Honour	: Dr. Adam S. Cumming, UK

## **F. Publication by faculty :**

### **National Journals**

1. M. Verma, B.L. Gupta and M. Pandey : "Pressure Dependence of Thermal Decomposition of Ammonium Nitrate Oxidiser", Journal of Indian Chemical Society, accepted.

### **Books :**

1. M. Verma and A.K. Chatterjee : Advances in Solid Propellant Technology, Tata McGraw Hill, (Edited).

### **G. Seminar/Symposium/Short term Course attended :**

1. Dr. A.K. Chatterjee and Dr. M. Verma, attended the 1st International HEMSI Workshop, Nov. 12-13, 2002 BIT, Mesra.
2. Dr. J.K. Prasad, attended the International Workshop on Shock Tube Technologies, Sept. 11-13, 2002, IISc, Bangalore.
3. Dr. J.K. Prasad, attended International Seminar on Indian Aviation, Jan 21-23, 2003, Aeronautical Society of India, Kolkata.
4. Dr. T.K. Nandi, attended Nineteenth National Symposium on Cryogenics, Mar 24-26 2003, Jadavpur Univ., Kolkata.

### **H. Award/Nomination :**

1. Dr. A.K. Chatterjee and Sri P.K. Dash, received Aerospace Engineering Division Medal 2002-2003, The Institution of Engineers (India)
2. Dr. A.K. Chatterjee, was elected Chairman, The Institution of Engineers (India), Jharkhand State Centre.
3. Dr. Mohan Verma, was nominated for Dalmia-HEMSI Award.

\* \* \*

## **CENTRE OF ENVIRONMENTAL SCIENCE AND ENGINEERING**

Presently M.Tech. in Environmental Science and Engineering is offered by this Group. It started functional during 2002-2003. The first batch is having a strength of 7 students in M. Tech course. This group is a multidisciplinary group and faculties are from various departments of the Institute like civil Engg. App. Chemistry. Remote Sensing, Polymer Engineering, Mechanical Engineering, Architecture, Pharmacy etc.

\* \* \*

---

# **EXTENSION CENTRES**

---





To impart quality education in the field of Science, Technology and Management, the Institute has opened educational centres commonly known as B.I.T. Extension Centre in India and abroad. These centres are self-sufficient to carry out different academic programmes to meet the local requirements. At present such centres are located at Lalpur (Ranchi), Allahabad (U.P), Kolkata (W.B), Jaipur (Rajasthan), Noida (U.P), Bahrain, Muscat (Sultanate of Oman). A brief summary of these centres is given below. Viewing their academic performance, the Institute is continuously being approached to open such centres in many other places in India and abroad. Recently Academy of Maritime Education and Training, Chennai, has approached the Institute for collaborations in its B.E programme in Marine engineering. The proposal is under considerations.

\* \* \*

## **B.I.T. EXTENSION CENTRE, JAIPUR**

IT education today is indeed in national need to build Indian economy into a competing global force. Yet, such an education spreads over a span of various services that make IT deliver results. The Birla Institute of Technology, Mesra Extension Centre, Jaipur is setting eyes on building high-end IT solution providers – professionals through the pursuit of excellence in IT education, research, consulting and training. It is running three year degree courses viz. Master of Computer Application (MCA), Bachelor of Computer Applications (BCA) and Bachelor of Business Administration (BBA). The Jaipur extension centre was the first to come up with Master of Computer Applications program and it has already post-graduated three batches of students who have been well placed in the IT industry. The center is an integral part of BIT Mesra, Ranchi and the same level of competence is assured as the courses, laboratories and the examinations are conducted as at the main campus. The Center has an excellent faculty, a well established Computer lab, Library and a healthy and clean environment.

The Institute promotes sports and cultural activities and ensures participation in various activities and competitions. It is also responsible for organizing various cultural events, IT/Software quizzes, and debates at the inter and intra collegiate level and caters to the entertainment needs of the students. During 2002-2003 the Centre conducted various extra curricular activities in order to facilitate the all round development of the students. On 24<sup>th</sup> August, 2003, an inter college Software Development quiz was organized and students from various Engineering Colleges participated in this quiz. Certificate of

appreciation was given to each participant. The Centre also conducted intra-centre Sports Meet from 29<sup>th</sup> September to 2<sup>nd</sup> October, 2002 and the main attractions were Cricket, Badminton, Chess, Volley Ball and Table Tennis. The prize distribution ceremony was held on 26<sup>th</sup> April, 2003. The Annual Day Function was celebrated on 30<sup>th</sup> October, 2002 at the Birla Auditorium, Statue Circle, Jaipur. Hon'ble Shri Jitendra Singh, Minister of Information & Broadcasing, Govt. of Rajasthan was the Chief Guest of this function and Shri G.L. Bhargava, Member of Parliament, Govt. of India was the Eminent Guest of Honor.

By connecting the extra curricular activities with the education, the Centre is trying to reach upto the highest level of Excellency.

**Degree /Offered :** MCA, BCA, BBA.

**Faculty Position :** Lecturers – 5, System Analyst- 1, Associate Lecturer – 1, Programmer –1.

**Number of Student enrolled :** MCA – 107, BCA –128, BBA – 28.

Academic Innovations, Research & Development activities.

#### **A. Publication by faculty :**

##### **Books**

<b>Name of faculty</b>	<b>Course/University</b>	<b>Title &amp; Publisher</b>
Shri O.P. Rishi	1 <sup>st</sup> yeasr B.Sc./B.A/B. Com.	El.Computer Science, CBH, Jaipur
Shri O.P. Rishi	PGDCA Semester I (Hindi &English)	Computer Science, CBH, Jaipur
Shri O.P. Rishi	PGDCA Semester I (Hindi &English)	Computer Science, CBH, Jaipur

#### **B. Seminar/Symposium/short term course attended by faculty Memers:**

<b>Name of faculty</b>	<b>Organizer</b>	<b>Topic</b>
Shri O.P. Rishi	IETE	Electronic Design Automation: Issues and Challenges
Shri B. Pathak	- do-	-do-
Shri Ashutosh Gupta	-do-	-do-
Shri Vivek Gaur	-do-	-do-
<b>Name of faculty</b>	<b>Organizer</b>	<b>Topic</b>

Mrs. Smita Agarwal	-do-	-do-
Ms. Ritu Goyal	-do-	-do-
Shri S.K. Sharma	-do-	-do-
Shri Ashok Sharma	-do-	-do-

### **C. List of paper presented by the faculty :**

<b>Name of faculty</b>	<b>Conference</b>	<b>Topic</b>
Shri. B. Pathak	IETE	ISDN Network

\* \* \*

## **EXTENSION CENTRE NOIDA**

B.I.T. Noida extension centre started functioning since 1998 with B.C.A and 1999 with B.B.A programme. M.C.A programme was started in 2001 and M.B.A in 2003. This centre is well equipped with a library and computer labs with about 100 computers and related softwares. A V-SAT terminal has been installed during 2002-2003 for providing internet facilities to the staff and students of the centre.

**Degree/Diploma Offered :** B.B.A, B.C.A., M.B.A., M.C.A.

**Faculty Position :** Management – 05, Computer –08

**Number of Students enrolled :** Undergraduate – 382, Postgraduate –115.

\* \* \*

## **EXTENSION CENTRE, KOLKATA**

To two new batches of MCA (FT) and BCA (FT) has been introduced for the monsoon session 2002 – 2003. The total no. of enrollement in MCA was 43 and in BCA was 35. Apart from these two batches the other batches running are MCA (FT) VI semester and MCA (PT) V and VI semesters respectively. The MCA (FT) VI semesters students are now doing their final semester system development projects in various organisatins like CTS, Alumnus software, CMC limited, ISI Calcutta, Jadavpur University, RS Software Limited, CESC limited, IIT, Kharagpur, TISCO, Electra design automation etc. They are doing

projects on different platforms like R &D, Networking, Image Processing, VLSI design, Database software. The students had been selected in the above mentioned projects by proving their ability through various kinds of tests and the result of which the company are now absorbing them. In the year 2002-2003 six MCA (FT) 5<sup>th</sup> semester took part in CSI al India Young IT provessional under the mentorship of Prof. R.T. Goswami and out of them 3 were finally selected for delivering the seminar at Science City auditorium in front of eminent scolar, academician and Top official from reputed IT organization and full house of audience. They presented the seminar on Data Recovery From Magnetic Disks. All the students of MCA (FT) 5<sup>th</sup> semester five groups has developed different projects during their 5<sup>th</sup> semester under the guidance of the faculty members Mrs. J. Ray and Prof. R. T. Gosami. MCA 5<sup>th</sup> semester students in a group of two presented seminar under the mentorship of the faculty of this centre Mr. J. Das and Prof. R.T. Goswami on different topics throughout their fifth semester. The seminar was held weekly one/two and they presented in front of students, Guest Faculty, Industry persons etc. Under the guidance of the faculty In Charge and faculty members, our MCA students took part in the quiz and paper presentation in Bengal Engineering College Shibpur. One group own the quiz contest and other got the confirmation of purlbishing his write up in the their journal. Our MCA students developed a project on ERP during their summer vacation. The platform was VC+ +. Faculty In Charge R. T. Goswami and faculty Mrs. J. Das attended a one day seminar on Enterprise Suraksha Organised By Department of Computer Science and Engineering, Jadavpur University. Faculty In Charge R.T. Goswami attended a four day International workshop on Distributed computing organised by Department fo Computer Science and Engineering, University of Calcutta in December, 2002. One MCA (FT) 5<sup>th</sup> semester has developed an operating system in the floppy disks and one worked on Virus software. Despite the above activity we have planned many things but due to space constraint it was not possible.

**Degree/Diploma offered :** MCA (FT) , BCA.

**Faculty Position :** Three (Full Time) Six (Part Time)

**Number of Student enrolled :** Undergraduate – 66, Postgraduate – 162.

Academic Innovations, Research & Development activities.

#### **A. Seminar/conference/short term course conducted by the Department:**

MCA 5<sup>th</sup> semester students in a group of two presented seminar under the mentorship of the faculty of this centre Mr. J. Das and Prof. T.R. Goswami on different topics throughout their fifth semester. The seminar was held weekly one/two and the presented the seminar in front of the students, Guest Faculty, Industry persons etc. Seminar topics include image processing, Data Communication, Virus software, Creation of operating system etc.

### ***Books/Monographs :***

A book on Internet by Prof. R.T. Goswami (Co author) has been proposed to Oxford press. The book has not yet published but they have taken it for revision.

### **G. Seminar/Symposicem/short term course attended by faculty members :**

Faculty In Charge R.T. Goswami and faculty Mrs. J. Das attended a one day seminar on Enterprise Suraksha Organised By Department of Computer Science and Engineering, Jadavpur University. Faculty In Charge R.T. Goswami attended a four day International workshop on Distributed computing organised by Department of Computer Science and Engineering, University of Calcutta in December, 2002.

\* \* \*

## **EXTENSION CENTRE, ALLAHABAD**

The Centre provides full time B.C.A and B.B.A Programme and part –time B. Tech degree in various disciplines like Civil, Electrical and Mechanical.

### **Department of Computer Science :**

The Computer Science Dept. has laboratories which is spread over an area of 189.79 sq. meter and equipped with Computers like IBM PIV (15 Nos.), Compaq PIV (40 Nos.), Compaq Celeron (14 Nos.), Compaq proliant Server (1 No.), Unix Server – PI (1 No. ) and VT 100 terminals (5 Nos.). The softwares that are used to train our students are like Windows 95, Windows 98, Windows 2000 Professional, SCO Open Server, Visual Studio, MS Office 2000, Oracle 8, etc. The Computer Centre is completely networked and has ISDN connection for Internet access. The VSAT survey work is over and likely to be installed very shortly.

### **Department of Civil Engg.**

The department is at the developing stage. It has at the moment moderate Surveying lab, and Soil Mechanics lab instruments. Presently only the Part-Time B. Tech. programme is being run by the department. The students of the department have worked on live projects on Environmental Pollution, irrigation, rural water supply schemes and rural link roads, etc.

### **Department of Electrical and Electronics Engg.**

The department has Electrical Machine lab, digital system design lab, microprocessor lab and control Engg. Lab equipped with MATLAB software. The department presently

has only Part-Time programme leading to B. Tech. degree. The students have done some good projects on High Voltage transmission of power, modern communication system, Energy Saving devices and so on.

### **Department of Mechanical Engg.**

The department has Manufacturing processes lab having standard machine tools of general type and I/C Engine lab. The department presently has only Part-Time programme leading to B. Tech. degree. The students have done some good projects on Non-Conventional Energy, improvement of Engine performance, pollution control, Computer aided Design and so on.

**Degree/ Diploma Offered :** BCA, BBA, B. Tech (PT).

**Faculty Position :** Professor – 1, Lecturers (FT) – 8, Lecturers (PT) - 23

**No of Student Enrolled:** Undergraduate - 366

### **Academic Innovation Research and Development/Activities :**

#### **A. Seminar/conference/short term course conducted by the department :**

1. Mr. Vivek Srivastava, Senior Manager (HRD) Recron Synthetics Ltd., Allahabad, delivered one guest Lecturer on "Communication Skill" on 02.12.2002.
2. Mr. Maqsood Naseer, Personal Manager, I.T.I, Allahabad, delivered one guest Lecturer on "Communication Skill" on 15.02.2003.

#### **B. Seminar/Symposium/short term course attended by faculty members :**

1. Dr. Laxman Sahoo, Professor, Dept. of Computer Science, Allahabad, attended an International conference conducted by IIT Kharagpur on 26<sup>th</sup> December 2002 and presented a paper entitled "Inexact Reasoning in knowledge Engg."
2. Prof. Binay Kumar Singh, Lecturer, Dept. of Civil Engineering Allahabad, attended an ISTE sponsored one week short term Training course at IIT Kanpur during 11-15 Nov. 2002.
3. Prof. Binay Kumar Singh, Lecturer, Dept. of Civil Engineering, Allahabad, attended an ISTE Sponsored short term Training Programme conducted at MNIT Jaipur during 3<sup>rd</sup> – 14<sup>th</sup> march 2003.
4. Prof. Binay Kumar Singh, Lecturer, Dept. of Civil Engineering, Allahabad, attended a national seminar on "Manmade and Natural disasters and Engg. Challenges" conducted by ICI Allahabad in Sept. 2002.

5. Prof. S. Kanungo, Lecturer, Dept. of Computer Science, Allahabad, attended a seminar – Sensitization Programme on “Intellectual Property Right under WTO” during September 2002.
6. Prof. R.S. Pandey, Lecturer, Dept. of Computer Science, Allahabad, attended a seminar – Sensitization Program on “Intellectual property Right under WTO” during September 2002.
7. Prof. Anil Kumar Singh, Lecturer, Dept. of Mechanical Engg., Allahabad, attended an ISTE sponsored short term training programme on “Operation Management” at BIT Mesra Ranchi, during 16-27<sup>th</sup> Dec. 2002.

\* \* \*

## **B.I.T. EXTENSION CENTRE LALPUR**

Established in 1980, the centre offers the various full-time and part-time courses in Engineering, Computer Science and Management areas leading to the Master of engineering degree in Electrical, Mechanical, Civil, Master of Computer Applications, Master of Business Administration, Master of Science in Information Technology, in Electronics & Communication, Bachelor of Science in Electronics, in Computer, Bachelor of Business administration and Bachelor of Computer Applications.

A total of 1837 students participated in these programmes at different level during the year, and around 500 students completed their respective programmes. The successful students were awarded the degree certificates in the convocations 2002-2003 held in February 2003.

The centre has adequate infrastructure to support its academic activities. The computer laboratories are well equipped and can accommodate more than 100 students at a time for their sessional classes. Library of the centre is well organised. It has around 6000 books, journals, internet connectivity and reading room where the students and staff can use their free time in creative reading. It has a small canteen, branch of U. CO bank and other amenities to cater the need of its students and staff members.

**Faculty Position :** Full –Time – 23, Part –Time –22.

**Degree/Diploma offered :** BBA, BCA, MBA, MCA, M.Sc. M. Tech. (PT), M.E. (PT).

# EXTENSION CENTRE, BAHRAIN

## **a. Computer Science & Engineering Department**

The Department has well-equipped laboratories with latest of different software along with Internet facilities.

## **b. Electronics & Communication Department**

The Department has good laboratory facilities in the areas of Basic electronics, Microprocessors, Digital Systems Design, Instrumentation and process control, Communications, Circuit Simulation, etc.

## **c. Production Engineering Department**

The Centre has established the state of art workshop facilities to offer higher education programme in Production Engineering. The facilities include most modern machineshop, fabrication shop, sheet metal shop and a host of other facilities. To cope up with the latest trends in machining, CNC train masters and Electric Discharge machining, facilities have also been installed.

### **Course Offered :**

- a. 4 Year Degree Programme (B.E.) in Computer Science and Engineering
- b. Part –Time Degree Programme (B.Sc.) in Information Technology
- c. 3 Year Diploma in Technology Programme (D. Tech.) in Computer Science & Engineering and Production Engineering.

### **Faculty Positions :**

Professors – 3, Readers – 4, Lecturers – 5.

### **Students' Strength :**

A total of 91 students are registered in various undergraduate programmes.

\* \* \*



## **B.I.T. EXTENSION CENTRES MUSCAT**

It is the latest addition in the series of B.I.T. extension Centres. The centre started functioning from this academic session only. Courses offered are Bachelor of Engineering in Computer Science, in Electronics & Communication, and Bachelor of Computer Applications.

The centre is under a process of extension of its present laboratories, library, class rooms and other facilities to accommodate more courses likely to start in coming years.

\* \* \*



---

**UNIVERSITY**  
**POLYTECHNIC**

---



The Polytechnic was established in 2001 as a result of signing of a "Memorandum Of Understanding" between the Department of Welfare, Govt. of Jharkhand and Vice-Chancellor of the Institute. Main aim of setting University Polytechnic was to impart quality supervisory level education to the students of this nascent state with the generous financial assistance for modern and well-equipped laboratories and other infrastructural facilities by Deptt. Of Welfare. Govt. of Jharkhand on one side, and expert well qualified and experienced Faculty of the Institute on the other. This Polytechnic endeavors to prove to be model of Polytechnic education in India with more of practical inputs based on a solid theoretical background.

The Project work for setting up the Polytechnic started in right earnest after its foundation laying ceremony by the first Chief Minister of newly founded state Sri Babulal Marandi on 17th Dec.2000. Initially it was planned for only S.T. and S.C. students of the state. But the Chief Minister announced the increase in the seats from 60 to 100 to accommodate the general category students also.

Over coming the teething troubles the infra-structural facilities like Institute building, hostel for boys and girls, mess, class rooms, computer center, library, drawing halls, etc. were successfully created in a record time of 11 months. First batch of 60 students comprising of 40 S.T., 5 Primitive Tribes and 15 S.C. students were admitted in two branches of Electronics and Automobile disciplines. With great fanfare the Polytechnic was inaugurated on 12th Nov 2001 by the Chief Minister of Jharkhand Sri Babulal Marandi.

The Chief Minister, the Welfare Minister and large number of other dignitaries visited all the facilities created and had all the praise for doing so much in such a short time.

The classes for 1st batch of 49 boys and 11 girls started from 19th Nov 2001 with the help of Faculty of the Institute. Its students used some of the laboratories of' B.I.T. and the workshop of B.I.T. STEP, The untiring efforts of Faculty and all other staff associated with running the educational schedule of the Polytechnic. Two semesters have been completed by July 2002.

In last eleven months after inauguration a second boys hostel accommodation 72 students with central mess for boys of both hostels and a common room have been completed. The girls hostel has been partly constructed and is ready to accommodate second batch of 25 girls. Other facilities in the girls hostel are also ready. Block C-a part of' Polytechnic building is also ready having four big size classrooms and four laboratories.

The second batch of 100 students have been admitted in four disciplines namely Automobile, Computer, Electronics and Manufacturing Technology. 77 boys and 23 girls have started their classes from 23rd Sept.2002.

The Polytechnic has well equipped library to cater to the needs of students community. It has more than two thousand books, scientific journals and daily news papers.

The Computer center is equipped with 30 Pentium -IV computer and a number of software for the students. Physics Lab, Basic Electrical Lab., Basic Electronics Lab. and Printed Circuit Board Lab, have already been established. All labs. are well equipped and have all modern equipments. Electrical Machine Lab., Applied Mechanics Lab. Garage etc. are in the process of being set up. Faculty and supporting staff have been added to meet the needs of the Polytechnic. The campus has all modern facilities and more facilities are to be made available in future.

Students are disciplined and highly motivated. Apart from studies, they have participated in the games along with the students of B.I.T and one girl even created records and was adjudged as the best women athlete in B.I.T sports meet. Other boys and girls also participated and won prizes. They also arranged a grand show on "Teachers' Day".

\* \* \*

---

**CENTRAL LIBRARY**

**&**

**DOCUMENTATION SERVICES**

---





## **Computerisation of Library**

The library has been computerized for issue, return, accounting and other library function with Libsys Software system. Books in the library have been coded. Printer for bar coding and scanner has been purchased. Automatic issue and return of the bar-coded books using scanner have been experimented and would be implemented for all Library users from the beginning of July 2003.

## **Book Exhibition**

A book exhibition was held on Oct 25 and 26, 2002 for bulk purchase of books. Nearly 25 publishers and book suppliers from Delhi, Kolkata, Pune, Ranchi, Patna, and Dhanbad participated in the exhibition. Exhibition was visited by a large number of faculty and students and a large number of books were purchased on the recommendation of faculty and department heads.

## **Online IEL Library**

The university joined the INDEST consortium under MHRD of Central Government. Under the scheme the university subscribed for five user (parallel) online IEL library and hard copy of all society publications of IEEE. By this more than 3000 (three thousands) publications are available online. Conference proceedings and other publications are also available since 1950. The online library contains publications of IEEE USA and IEE UK.

## **ERNET facility under INFLIBNET of UGC**

The university has also signed an MOU for installation of VSAT facility under INFLIBNET of UGC with UGC. This would provide internet system and online library for journals and publications selected by UGC.

## **No. of Books /Journals**

### ***Addition during the year***

i) General Books – 6,226

ii) SC/ST Books –3,369

Total No. of Books in General section – 72,103

Total No. of Books in SC/ST section – 18,573

iii) Bound issue of journals added – 1, 350

Total No. of bound journals – 17,277

## **Project**

Mr. Neeraj Kumar developed personnel absentee report software.

## **Training Programme**

A two week training programme was organised for the library staff to update their knowledge of computer for tackling issue and return problem. MIS students were asked to train the staff. They were suitably rewarded.

\* \* \*

---

# **TRAINING AND PLACEMENT DIVISION**

---



Training & Placement Office has the responsibility of conducting and facilitating the Campus Recruitment Programme. The Placement Office initiates and nurtures contacts with leading organizations for campus visits and is functional throughout the year. It endeavors to match the aspirations of the students with the needs of the Industry. It also assists the students for Summer/Winter Industrial training.

The T& P Division also provides counseling and guidance to the students regarding the visiting organisations, selection procedure, preparation methods & resources thereby ensuring that the students are adequately equipped to face the recruitment tests. Over 4000 graduates and post-graduates have been successful recruited through campus interviews during the past 18 years.

During 2002-03, several premier organizations visited the Institution offering 200 appointments to students from different disciplines. Salary package for engineering students ranges from 1.65- 3.65 lacs per annum.

The Training & Placement Division has developed a customized software through which activities like registration of the students and submission of personal data forms are being done. This has done away with the hand-filled résumé's and has resulted in faster and efficient access of the student database.

The Division has shifted to new premises within the Institute building having additional halls for conducting group discussions and interviews. The facilities are put to use throughout the year for conducting practice sessions by the students. The Placement Division this year successfully conducted the 'Placement Preparation Fortnight' for preparation of the next batch of students for campus placements. A team of Student Placement Coordinators has been formed to participate in the placement related activities of the Division.

This Division has also been responsible for development and updating of the Institute web site through which, amongst other things, a database of the BIT alumni is being maintained. The Division has placed the student's data on the site and through a restricted password the prospective employers may access the specific batch profiles through the Institute web site. All notifications, announcements of results as well as information pertaining to Seminars and Conferences is done on the through the site.

\* \* \*

## SUMMARY OF BRANCH WISE CAMPUS PLACEMENTS DURING 2002-03

Discipline / Branch	No. of Jobs
B.E.	40
COMPUTER SCIENCE	52
ELECTRONICS & COMMUNICATION	16
ELECTRICAL & ELECTRONICS	28
MECHANICAL	05
PRODUCTION	
MCA	21
M.E. Software Engineering	01
M. Tech Computer Science	01
M.E. EEE	01
M. Sc. Electronics	01
M. Sc. Information Technology	02
BCA	05
B. PHARM.	14
MBA	13
<b>TOTAL NO. OF APPOINTMENTS</b>	<b>200</b>

### SECTORWISE PLACEMENT STATUS 2002-03

#### **IT SECTOR**

- 1 Tata Consultancy Services (TCS)
- 2 Oracle
- 3 Cognizant Technology solutions
- 4 Tata Honeywell
- 5 Blue Star Infotech Limited
- 6 R S Software

- 7 Satyam
  - 8 IBM
  - 9 Birlasoft
  - 10 Syntel
  - 11 HCL Technologies
  - 12 CSCI
  - 13 Technet Software
- TOTAL – 119**

### ***ENGINEERING SECTOR***

- 1 TELCO
  - 2 Ashok Leyland
  - 3 Eicher Industries
  - 4 Tata Ryerson
  - 5 Ispat
  - 6 Electro Steel Castings
  - 7 Samtel
  - 8 NEI
  - 9 Telcon
  - 10 Balco
  - 11 L&T Powai
- TOTAL – 42**

### ***TELECOM SECTOR***

- 1 Motorola
  - 2 Tata Telecom
- TOTAL – 6**

### ***OTHERS***

- 1 HCL Infosystems
  - 2 ICICI\*
  - 3 Schenck Jenson & Nicholson Ltd\*
  - 4 GE Capital
  - 5 Wipro Spectramind
- TOTAL – 17**

### ***PHARMACEUTICAL COMPANIES***

- 1 Micro Labs
- 2 Eli Lilly
- 3 Tishon Pharmed
- 4 Cambridge
- 5 Panacea Biotech\*
- 6 Hi Tech Pharma

**TOTAL – 16**

**Grand Total – 200**

\* off campus through initiatives of placement div./departments

\* \* \*



---

# **STUDENTS ACTIVITIES**

---



1. The Annual Cultural Festival of the Institute BITOTSAV-2003 under the name-MARDIGRAS was organised from 16<sup>th</sup> to 19<sup>th</sup> Feb, 2003. This year, for the first time, various team from Noida, Lalpur (Ranchi) and Allahabad Extension Centres of B.I.T. Mesra participated along with the students of Main Campus (B.I.T. Mesra)
2. Mr. Paritosh Gupta (ECE), Mr. Subhash (ECE) and Mr. Amit (CSC) have won various prizes in the national level technical festival "Technex- 2003" held at I.I.T., BHU from 17<sup>th</sup> to 21<sup>st</sup> January 2003. In the paper presentation category (Anupreksh), they won first prize in the Category of Electrical, Electronics and Communication, Computer Science and Engineering and secured the Second position overall. They also got the Madan Mohan Malviya's founder award for excellence and most innovative paper. Apart from that, they won the First position in the open software contest for simulation and artificial intelligence.
3. The students of MUSIC Club of B.I.T. (Main Campus) took part as a band named "9 ON THE CLOCK" and were placed second in the " BEST BAND AWARD" at the "SPRING FEST of the I.I.T. Kharagpur held in January 2003. The "Best Vocalist Award" was won by Ajit Mathews (EEE) in the Fest.
4. During Annual Zonal NASA Competition "ZONOSA 2002" organized by B.E. Shivpur, the Sketching Event was won by Anupam & Arko (B. Arch.). The creative writing was won by Abhishek, Preety, Anupam, Arko, Ajit Minz, Mukum, Mani and Sweta of the Architecture Department.
5. Ms. Pavneet Kaur (B. Pharm) was awarded the Indian Drugs Manufacturer Association Award for standing First in Final Year B. Pharm. Ms. Somali Chatterjee (M. Pharm) was awarded Third Prize in the National Elocution conducted by the Indian Pharmaceutical Association.
6. The SPIC MACAY Chapter of B.I.T. Mesra organized a Rudra Veena show on 26<sup>th</sup> Jan, 2003. The show was performed by Ustaad Asad Ali Khan, the recipient of the most prestigious – TANSEN AWARD.
7. The High-Lander's Adventure Club (HAC) of B.I.T. Mesra conducted the following adventurous activities during the year :
  - (a) A Parasailing event was organized on 8<sup>th</sup> –16<sup>th</sup> February and 13<sup>th</sup>, 20<sup>th</sup> April, 2003 at Ranchi under the guidance of Parasailing experts. Total 212 students (both boys and girls) participated.
  - (b) During the event 'Winter Trekking 2003' a trekking event at THAR desert area in Rajasthan (about 75 Km) was conducted. Total 38 students (19 girls + 19 boys) took part.

- (c) A group of 12 students of B.I.T. Mesra took part in 'National Winter Trecking Expedition" organized by Youth Hostel Association of India at Goa during December 2002.
- (d) A rock-climbing one –day-course was organized at TAGORE HILLS (Ranchi) under the guidance of TATA STEEL ADVANTURE FOUNDATION.
- (e) Total 17 students participated in Summer Trecking 2003' event at Himachal and Leh region (about 72 km) and crossed the heighest motorable road in the world at KHARDULA PASS (18380 Feet) under the leadership of HAC Prof. In-charge.

\* \* \*

# STUDENTS WELFARE SCHEME

## **Financial Assistance to needy students:**

The Institute provides Full free ship/half free ship under merit cum means scheme. This year, the following number of free ships were given.

1. Full free ships - 16
2. Half free ships - 136

## **Book bank:**

Books are loaned to the needy students through book banks scheme.

## **Remedial classes :**

The Institute organised remedial classes for students of weaker class to improve their performance.

\* \* \*



---

# ANNEXURES

---





# MEMBERS OF THE GENERAL COUNCIL

## ***Founder Members:***

- |                        |                           |
|------------------------|---------------------------|
| 1. Shri G.P. Birla     | 7. Dr. A. R. Kidwai, M.P. |
| 2. Shri C.K. Birla     | 8. Shri G.D. Kothari      |
| 3. Shri S.L. Bhatler   | 9. Shri Rusi Modi         |
| 4. Shri G.L. Bansal    | 10. Shri D.N. Patodia     |
| 5. Dr. A.K. Chatterjee | 11. Dr. Karan Singh       |
| 6. Shri Sarosh Chandy  |                           |

## ***Life Members***

Dr. H.C. Pande

## ***Members by Representation:***

- |   |   |                      |
|---|---|----------------------|
| 1. Representative of Ministry of Human Resource Development Govt. of India                                  | : | Shri R.D. Sahay      |
| 2. Representative of the University Grants Commission   | : | Prof. S.K. Khanna    |
| 3. Representative of the Department of Science & Technology Govt. of India                                  | : | Shri H.K. Mittal     |
| 4. Representative of the All India Council for Technical Education  | : | Prof. Raj Pal Singh  |
| 5. Representative of the Department of Science & Technology Govt. of Commissioner- Jharkhand. cum-Secretary | : | Shri M. Patra, IAS   |
| 6. Representative of Birla Institute of Scientific Research   | : | Shri S.S. Jajodia    |
| 7. Vice Chancellor of the Institute   | : | Prof. S.K. Mukherjee |

## ***Corporate Members : Represented by***

- |   |   |                  |
|---|---|------------------|
| 1. M/s National Engg. Industries Ltd.       | : | Shri H.P. Singhi |
| 2. M/s Hyderabad Asbestos & Industries Ltd. | : |                  |
| 3. M/s Orient Paper & Industries Ltd.       | : |                  |

- |    |                                      |   |                   |
|----|--------------------------------------|---|-------------------|
| 4. | M/s Indian Press Exchange Ltd.       | : | Dr. P. Ghosh      |
| 5. | M/s Hindustan Motors Ltd.            | : |                   |
| 6. | M/s Orient General Industries Ltd.   | : |                   |
| 7. | M/s General Marketing & Mfg. Co.Ltd. | : | Shri P.C. Agarwal |

***Alumni Members :***

1. Dr. H.S. Sagar
2. Shri D. Sahay

\* \* \*

## BOARD OF GOVERNORS

Chairman	:	Sri G. P. Birla
Vice-Chairman	:	Sri. C. K. Birla
Nominee of Ministry of Human Resources Development	:	Sri. R.D. Sahay Deputy Secretary
Nominee of the University Grants Commission	:	Prof. S. K. Khanna
Nominee of the All India Council for Technical Education.	:	Prof. Raj Pal Singh
Commissioner -cum-Secretary, Science & Technology Government of Jharkhand, (Ex. Offico)	:	Shri M. Patra, IAS
Commissioner & Secretary, Higher Education, Government of Jharkhand, (Ex. Offico)	:	Sri Amit Khare, IAS
Commissioner, South Chotanagpur Division, Jharkhand, Ranchi (Ex. Offico)	:	Smt. Sheela Rapaj Kiskoo
Nominee of the Chancellor	:	Prof. D.P. Singh
Nominees of the General Council	:	Shri D.N. Patodia Shri G.P. Lal Shri P. Ghosh
Nominees of the Hindustan Charity Trust	:	Shri C.K. Birla Dr. H.C. Pande Shri Deepak Chatterjee
Vice-Chancellor, BIT, Ranchi (Ex.Offico)	:	Prof. S.K. Mukherjee
Members of Institute Faculty	:	Dr. P.K. Barhai Shri R.C. Jha
Secretary		
Registrar of the Institute	:	Dr. K.V. Krishnamurthy

\* \* \*

## FINANCE COMMITTEE

Chairman	:	Sri G. P. Birla
Members		
Nominee of the University Grants Commission	:	Dr. Gurbaksh Singh
Nominee of the Chancellor	:	Shri Vinod Kumar Gaddhyan
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
Secretary		
Registrar	:	Dr. K.V.Krishnamurthy

\* \* \*

## BUILDING & WORKS COMMITTEE

Chairman

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

Members

Adviser, Planning & Campus Development : Prof. P.P. Singh

Treasurer, B.I.T., Ranchi : Shri S.S. Jajodia

Representative of the Institute Architects : M/s. Kothari &  
Associates. Calcutta.

Representative of the State PWD : Nomination Awaited

Head, Department of Civil Engg. : Prof. S. Sengupta

Members-Secretary

Registrar : Dr. K.V.Krishnamurthy

\* \* \*

# TECHNICAL COUNCIL

## **Chairman**

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

## **Members:**

Chancellor's Nominees : Dr. D.D. Guru  
Dr. R. Badrinarayan  
Dr. J.D. Rai

Director of Technical Education :

Government of Jharkhand, (Ex. Offico)

Director of Higher Education : Dr. K.K. Srivastava

Government of Jharkhand, (Ex. Offico)

## **Professor of the Institute/Head of the Departments:**

Dr. S. Kumar	Prof. S.C. Goel	Dr. Ashok Mishra
Prof. Awadh Prasad	Dr. A.K. Chatterjee	Dr. R.C. Prasad
Dr. P.K. Mahanti	Prof. S.P. Bhatnagar	Prof. B.P. Roy
Dr. N.C. Mahanti	Dr. P.K. Barhai	Prof. S. Sengupta
Prof. K.R. Roy Choudhary	Prof. B.M. Karan	Prof. K.P. Singh
Prof. B.L. Gupta	Dr. D. Jairath	Prof. R.K. Narayan
Dr. G.M. Panpallia	Dr. D. Sasmal	Prof. Ram Pal Singh
Prof. N. Sengupta	Prof. B.K. Verma	Dr. R.K. Popli
Dr. B.N. Das	Prof. R. Sukesh Kumar	Dr. (Mrs.) M. Mukherjee
Dr. Gopal Pathak	Dr. L. Sahoo	Dr. A.K. Srivastava
Dr. M.S. Nathawat	Prof. A.K. Ray	Dr. A. M. Agarwal
Dr. (Mrs.) Usha Jha	Dr. J.K. Prasad	Dr. P.C. Joshi
Dr. Mohan Verma		

## **Secretary**

Registrar : Dr. K.V. Krishnamurthy

\* \* \*

## EXECUTIVE AND DEPARTMENT HEADS/IN CHARGE

Vice-Chancellor	:	Dr. S.K. Mukherjee
Treasurer	:	Shri S.S. Jajodia
Registrar	:	Dr. K.V. Krishnamurthy

### ***Deans***

Post-Graduate Studies	:	Prof. S.C. Goel
Under-Graduate Studies	:	Dr. D. Sasmal
Collaborative Research Programmes	:	Dr. P.K. Barhai
Academic Coordination & Students Welfare	:	Dr. P.C. Joshi
Extension Centres	:	Dr. A.M. Agrawal
Faculty Development	:	Dr. Gopal Pathak
Finance	:	Prof. S.P. Bhatnagar
Academic Infrastructure	:	Dr. B.M. Karan
Doctorial Research & Professor Development Programme	:	Dr. (Mrs.)M. Mukherjee

### ***Associate Dean***

Women Affairs	:	Dr. (Mrs.) Usha Jha
Boys Affairs	:	Shri A.K. Thakur

### ***Departmental Heads/ In charge***

Applied Chemistry	:	Dr. (Mrs.) Usha Jha
Applied Mathematics	:	Dr. N.C. Mahanti
Applied Physics	:	Dr. P.K. Barhai
Applied Mechanics	:	Prof. A.K. Ray
Civil Engineering	:	Prof. S. Sengupta
Architecture	:	Dr. D. Sasmal
Computer Science & Engineering	:	Prof. S. C. Goel
Electrical & Electronics Engineering	:	Dr. B.M. Karan
Electronics & Communication Engineering	:	Prof. S.C. Goel
Management	:	Dr. A.M. Agrawal
Bio-Medical Instrumentation	:	Dr. B.N. Das

Mechanical Engineering	:	Prof. Awadh Prasad
Pharmaceutical Science	:	Dr. S.P. Bhatnagar
Polymer Engineering	:	Dr. (Mrs.) M. Mukherjee
Information Science	:	Prof. A.M. Agrawal
Production Engineering	:	Dr. S. Kumar
Physical Education & Sports	:	Shri R.S. Yadav
Remote Sensing	:	Dr. M.S. Nathawat
Space Engineering & Rocketry	:	Dr. A.K. Chatterjee
Biotechnology	:	Dr. D. Sasmal
Hotel Management & Catering Technology	:	Dr. A.M. Agarwal
Center of Environmental Engineering & Science	:	Dr. Gopal Pathak (Coordinator)
OSD & Controller Entrance Examination	:	Prof. S.P. Bhatnagar
Controller of Examination	:	Dr. Mohan Verma
Coordinator Semester Programme	:	Dr. D. Sasmal
Finance (Comptroller)	:	Shri M.L. Verma
Finance (Chief Accountant)	:	Shri G.S. Sharma
Library	:	Dr. B.M. Karan
Chief Medical Officer	:	Dr. Arjun Prasad Singh
Nodal Centre	:	Dr. B.L. Gupta
Training & Placement	:	Shri B.B. Pant
Cultural Coordinator	:	Prof. Ram Pal Singh

\* \* \*



# DEPARTMENTAL BOARD OF STUDY

## *Department of Applied Chemistry*

### **Chairman**

Dr. (Mrs.) Usha Jha, Head of the Department

### **Members**

1. Prof. B.D. Choubey
2. Dr. P.K. Shrivastava

### **Panel of Experts from outside of the Institute**

- |                                       |                                  |
|---------------------------------------|----------------------------------|
| 1. Dr. J. Ghosh.<br>IIT, Kharagpur    | 2. Dr. H.M. Chawla<br>IIT, Delhi |
| 3. Dr. Lallan Mishra<br>BHU, Varanasi | 4. Dr. N.K. Jha<br>IIT, Delhi    |

## *Center of Environmental Science & Engineering Group*

### **Chairman**

Dr. Gopal Pathak Coordinator ESE

### **Members**

- |                            |                      |
|----------------------------|----------------------|
| 1. Dr. (Mrs.) M. Mukherjee | 2. Dr. M.S. Nathawat |
| 3. Dr. (Mrs.) U. Jha       | 4. Mrs. B. Lal       |

### **Panel of Experts from outside of the Institute**

- |   |  |
|---|--|
| 1. Dr. (Mrs.) R.S. Patil<br>CESE, IIT-Powai | 2. Dr. Mukesh Khare<br>CESE, IIT, Delhi    |
| 3. Dr. S.K. Gupta<br>Head, CESE, IIT-Powai  | 4. Dr. Durdeep Singh<br>CESE, ISM, Dhanbad |

## *Department of Biotechnology*

### **Chairman**

Dr. D. Sasmal, Head of the Department

### **Members**

- |                               |                          |
|-------------------------------|--------------------------|
| 1. Dr. P. Ghosh               | 2. Prof. S. P. Bhatnagar |
| 3. Dr. (Ms) Mandira Mukherjee | 4. Dr. Pratyooosh Shukla |

### ***Panel of Experts from outside of the Institute***

- |  |   |
|--|---|
| 1. Prof. T. Ghosh<br>Emeritus Professor, I.I.T., Delhi<br>Adviser, Dept. of Biotechnology,               | 2. Prof. S. C. Kundu<br>Dept. of Biotechnology,<br>IIT, Kharagpur |
| 3. Prof. P. Kaliraj<br>Director, Centre for Biotechnology<br>Anna University, Guinday,<br>Chennai-60025. |   |

### ***Department of Pharmacy***

Chairman

Prof. S.P. Bhatnagar, Head of the Department

Members

- |                            |                        |
|----------------------------|------------------------|
| 1. Dr. G.M. Panpalia       | 2. Dr. D. Sasmal       |
| 3. Dr. B.N. Sinha          | 4. Mrs. S.M. Verma     |
| 5. Dr. (Mrs.) M. Mukherjee | 6. Dr. (Mrs.) Usha Jha |

### ***Panel of Experts from outside of the Institute***

- |   |  |
|---|--|
| 1. Dr. Taushif Monif<br>(Industes Clinical Pharmacology &<br>Pharmacokinetics) Ranbaxy Research<br>Laboratories, Udyod Vihar, Plot No.20,<br>Sector 18<br>Gurgaon-122001, Chandigarh. | 2. Dr. S.K. Kulkarni<br>Professor, University<br>College of Pharm. Sc.,<br>Punjab University |
|---|--|

### ***Post Graduate Programme***

Chairman

Prof. S.P. Bhatnagar, Head of the Department

Members

- |                      |                    |
|----------------------|--------------------|
| 1. Dr. G.M. Panpalia | 2. Dr. D. Sasmal   |
| 3. Dr. B.N. Sinha    | 4. Dr. S. Ganguly  |
| 5. Dr. N.C. Mohanti  | 6. Dr. Mohan Verma |

### ***Panel of Experts from outside of the Institute***

- |   |  |
|---|--|
| 1. Dr. P. Gundu Rao<br>(Director)DIVIS Laboratory<br>R & D Centre, C-26, Santha Nagar<br>Hyderabad 500018 (India)   | 2. Dr. S. J. Surya Kumar<br>Assistant Director<br>(Formulation) Lupin<br>(Ltd.) 46A/47A,<br>Nande Village<br>Mulshi Taluka -PUNE-2 |
| 3. Dr. Taushif Monif (Industry)<br>Associate Director (Clinical Pharmacology<br>& Professor, Hamdard<br>Pharmacokinetics) Ranbaxy,<br>Research Laboratoryes<br>Udyog Vihar, Plot No. 20, Sector-18,<br>GURGAON-122001 | 4. Dr. Roop K. Khar<br>College Pharmacy,<br>Jamia Hamdard, Delhi   |
| 5. Dr. S.Y. Gabhe,<br>Principal & Professor<br>C.V. Shah College of Pharmacy<br>SNDT Women's University<br>Santacruz, Mumbai-49   | 6. Dr. C.K. Kokate<br>Vice Chancellor<br>Kakatiya University<br>Warangal (A.P.)  |
| 7. Dr. P.G. Yeole (Principal)<br>Institute of Pharm. Education &<br>Research, Baraon, Wardha 442001.  | 8. Dr. S.K. Kulkarni<br>Professor, University<br>College of Pharm. Sc.,<br>Punjab University,<br>Chandigarh.                       |

### ***Applied Mathematics***

#### ***Chairman***

Dr. N.C. Mohanti, Head of the Department

#### ***Members***

- |                        |                           |
|------------------------|---------------------------|
| 1. Dr. S.S. Roy        | 2. Dr. S. K. Chakraborty, |
| 3. Prof. Sukesh Kumar, | 4. Prof. Awadh Prasad,1.  |

### ***Panel of Experts from outside of the Institute***

- |  |   |
|--|---|
| 5. Prof. K.S. Choudhary,<br>Deptt of Mathematics<br>Jadavpur University, Kolkata | 6. Prof S. Nanda<br>Deptt. of Mathematics<br>IIT, Kharagpur |
|--|---|

7. Prof. K.C. Prasad  
Deptt of Mathematics  
Ranchi University, Ranchi

8. Prof. S. Dev  
Deptt. of Mathematics  
Indian School of Mines  
Dhanbad

### ***Department of Applied Mechanics***

#### ***Chairman***

Prof. A. K. Roy, Head of the Department

#### ***Members***

1. Dr. S. Kumar  
3. Prof. Rampal Singh  
5. Prof. U.S. Prasad

2. Prof. K. R. Rochoudhary  
4. Prof. A.K. Roy

#### ***Panel of Experts from outside of the Institute***

6. Dr. B.N. Sreedhar  
B.E College Shibpur.

7. Dr. S. Talapatra  
IIT Kharagpur

### ***Department of the Physics***

#### ***B.E. Programme***

#### ***Chairman***

Dr. P.K. Barhai, Head of the Department

#### ***Members***

1. Dr. D. Jairath  
3. Dr. A.K. Shrivastava  
5. Dr. (Mrs.) S. Keshri  
7. Dr. N.C. Mahanti

2. Dr. R.K. Popli  
4. Dr. S. Konar  
6. Dr. S. Kumar

#### ***Panel of Experts from outside of the Institute***

1. Dr. N.K. Naraian  
Professor, Dept. Physics,  
RIT, Jamshedpur  
3. Dr. S. Chatterjee  
Senior Manager, R & D Division,  
MECON, Doranda, Ranchi-834002.  
Group, RDCIS, SAIL,  
Ranchi- 834002

2. Dr. A. Roy Chowdhury  
Head, Dept. of Physics  
Jadvapour University,  
Kolkotta  
4. Dr. A.K. Roy  
Dy. General Manager,  
Physical Metallurgy

## **M. Tech. Programme**

### **Chairman**

Dr. P.K. Barhari, Head of the Department

### **Members**

- |                         |                     |
|-------------------------|---------------------|
| 1. Dr. D. Jairath       | 2. Dr. R.K. Popli   |
| 3. Dr. A.K. Shrivastava | 4. Dr. J.T. Andrews |
| 5. Dr. (Mrs.) S. Keshri | 6. Dr. S. Kumar     |
| 7. Dr. N.C. Mohanti     |                     |

### **Panel of Experts from outside of the Institute**

#### **Members**

- |   |   |
|---|---|
| 1. Dr. B.K. Chakraborty<br>Department of Materials &<br>Metallurgical Engineering, NIFFT, | 2. Dr. A.K. Biswas<br>Director, R & D Division,<br>Usha Martin, Ranchi.<br>Hatia, Ranchi.       |
| 3. Dr. S. Chatterjee, Sr. Manager,<br>R & D division, MECON, Doranda,<br>Ranchi-834002    | 4. Dr. A.K. Roy<br>Dy. General Manager,<br>Physics Metallurgy<br>Group, RDCIS, SAIL,<br>Ranchi. |

## **M. Sc. Applied Physics Courses**

### **Chairman**

Dr. P.K. Barhari, Head of the Department

### **Members**

- |                            |                         |
|----------------------------|-------------------------|
| 1. Dr. R.K. Popli          | 2. Dr. A.K. Shrivastava |
| 3. Dr. J.T. Andrews        | 4. Dr. (Mrs.) S. Keshri |
| 5. Dr. S. Kumar            | 6. Dr. N.C. Mohanti     |
| 7. Dr. (Mrs.) M. Mukherjee |                         |

### **Panel of Experts from outside of the Institute**

- |   |   |
|---|---|
| 1. Prof. A. Roy Choudhury<br>Prof. & Head, Dept. of Physics,<br>Jadavpur University, Calcutta. Physics,<br>Saha Institute of<br>Bidhan Nagar, Kolkata-64. | 2. Dr. B.G. Ghosh<br>Dept. of Condensed<br>Matter Nuclear Physics,<br>I/AF, |
|---|---|

3. Prof. T.K. Dey  
Professor, Cryogenics Engineering  
Center, Indian Institute of Technology,  
Mines, Kharagpur 721 302.

4. Dr. P.S. Gupta  
Prof. & Head Dept. of  
Physics, Indian School of  
Dhanbad.

### ***Department of Civil Engineering:***

#### ***Chairman***

Prof. S. Sengupta, Head of the Department

#### ***Members***

- |                            |                       |
|----------------------------|-----------------------|
| 1. Prof. K.R. Rochoudhary. | 2. Prof. Gopal Pathak |
| 3. Prof. V.C.S. Rao        | 4. Prof. Arun Kumar   |
| 5. Dr. Ashok Mishra        | 6. Prof. A.K. Ray     |

#### ***Panel of Experts from outside of the Institute***

- |  |  |
|--|--|
| 1. Dr. B.P. Verma<br>Prof. Dept. of Civil Engg.<br>RIT Jamshedpur                | 2. Dr. S.K. Ghosh<br>SAIL, Ranchi                        |
| 3. Dr. S. Talapatra<br>Dept. of App. Mechanics<br>Bengal Engg. College Howrah.-9 | 4. Dr. C.K. Singh<br>Engineer-in-Chief,<br>P.W.D. Ranchi |

### ***Department of Computer Science & Engineering***

#### ***Chairman***

Prof. S.C. Goel, Head of the Department

#### ***Members***

- |                    |                    |
|--------------------|--------------------|
| 1. Mr. R.G. Sahoo  | 2. Prof. S. Dutta  |
| 3. Mrs. Aruna Jain | 4. Dr. P.K. Barhai |
| 5. Dr. B.M. Karan  |                    |

#### ***Panel of Experts from outside of the Institute***

- |                                      |                            |
|--------------------------------------|----------------------------|
| 1. Dr. S.K. Rath<br>N.I.T. Rourkela. | 2. Dr. B.C. Saxena<br>JNU. |
| 3. Dr. A. Mishra<br>RIT, Jamshedpur. |                            |

## ***Department of Electrical & Electronics Engineering***

### ***Chairman***

Prof. S. C. Goel, Head of The Department

### ***Members***

- |                         |                            |
|-------------------------|----------------------------|
| 1. Prof. R.Sukesh Kumar | 2. Prof. M. Puri           |
| 3. Ms. S. Marman        | 4. Prof. R.K. Narayan      |
| 5. Prof. P.K. Sinha     | 6. Prof. R.C. Jha          |
| 7. Prof. S.C. Goel      | 8. Prof. A.P. Singh        |
| 9. Dr. P.K. Mohanti     | 10. Prof. (Dr.) M.K. Ghosh |

### ***Panel of Experts from outside the Institute***

- |   |   |
|---|---|
| 11. Prof. (Dr.) T.K. Basu<br>(Dept. of EEE, IIT<br>Kharagpur) | 12. Prof. (Dr.) Samiran<br>(Dept. of EEE, IIT<br>Kharagpur) |
|---|---|

## ***Department of Electronics & Communication Engineering***

### ***Chairman***

Prof. S.C. Goel, Head of The Department

### ***Members***

- |                          |                    |
|--------------------------|--------------------|
| 1. Prof. R. Sukesh Kumar | 2. Prof. M. Puri   |
| 3. Ms. S. Barman         | 4. Dr. P.K. Barhai |
| 5. Dr. B.M. Karan        |                    |

### ***Panel of Experts from outside of the Institute***

- |   |   |
|---|---|
| 1. Dr. G. Panda<br>R.E.C. Rourkela.       | 2. Dr. P.C. Bakshit<br>Calcutta University. |
| 3. Dr. Ajay Chakraborty<br>IIT Kharagpur. |   |

## ***Department of Mechanical Engineering***

### ***Chairman***

Prof. A. Prasad, Head of the Mechanical Engineering

### ***Member***

- |                       |                        |
|-----------------------|------------------------|
| 1. Dr. Ashok Mishra   | 2. Prof. B.K. Verma    |
| 3. Dr. M.N. Verma     | 4. Mr. B.N. Giri       |
| 5. Mr. R.P. Sharma    | 6. Dr. A.K. Chatterjee |
| 7. Dr. Surendra Kumar |                        |

### ***Panel of Experts from outside of the Institute***

- |  |   |
|--|---|
| 1. Dr. P.K. Nag<br>IIT, Kharagpur.     | 2. Dr. R.K. Charadwaj<br>(Rajasthan).<br>MIA, Alwar     |
| 3. Dr. S.K. Agarwal<br>BCE, Bhagalpur. | 4. Dr. S.R. Bhattacharya<br>Jadavpur Univ.<br>Jadavpur. |

### ***Department of Management***

#### ***Chairman***

Prof. Anand Mohan Agarwal, Head of The Department

#### ***Members***

- |                   |                    |
|-------------------|--------------------|
| 1. Prof. S. Kumar | 2. Prof. A. Prasad |
| 3. Mr. Utpal Baul | 4. Mrs. S. Shivani |

### ***Panel of Experts from outside the Institute***

- |   |                                       |
|---|---------------------------------------|
| 1. Prof. J. Mahapatra,<br>Sambalpur University<br>IIM Kolkata | 2. Prof. R. Mazumder,<br>IIM, Kolkata |
|---|---------------------------------------|

### ***Department of Polymer Engineering***

#### ***Chairman***

Dr. (Mrs) M. Mukherjee, Head of The Department

#### ***Members***

- |                    |                     |
|--------------------|---------------------|
| 1. A.P. Singh      | 2. Prof. B.L. Gupta |
| 3. Mrs. S. Goswami |                     |

### ***Panel of Experts from outside the Institute***

- |  |  |
|--|--|
| 1. Prof. S.Maiti,<br>Rtd. Prof. Materials Sc.<br>IIT Kharagpur | 2. Prof. P. Ghosh,<br>Rtd Prof, Dept. of<br>Polymer, Sc.& Tech.<br>University of Calcutta. |
|--|--|

### ***Department of Remote Sensing***

#### ***Chairman***

Prof. N. S. Nathawat, Head of The Department



### **Members**

- |                     |                    |
|---------------------|--------------------|
| 1. Dr. A.K. Singh   | 2. Dr. N. Patel    |
| 3. Dr. Gopal Pathak | 4. Dr. P.K. Barhai |

### **Panel of Experts from outside of the Institute**

- |  |                                    |
|--|------------------------------------|
| 1. Dr. J.R. Sharma<br>CAZIR, Jodhpur<br>Dehradun | 2. Dr. P.L.N. Raju                 |
| 3. Dr. I.V. Murlikrishna<br>Hyderabad            | 4. Dr. S.M. Ramaswami<br>Tamilnadu |

### **Department of Space & Rocketry Engineering** **Chairman**

Dr. A.K. Chatterjee, Head of the Deptt.

### **Members**

- |                     |                    |
|---------------------|--------------------|
| 1. Dr. P.C. Joshi   | 2. Dr. Mohan Verma |
| 3. Dr. J.K. Prasad  | 4. Dr. T.K. Nandi  |
| 5. Mr. P.K. Dash    | 6. Dr. S. Kumar    |
| 7. Dr. M. Mukherjee |                    |

### **Panel of Experts from outside the Institute**

- |   |   |
|---|---|
| 1. Dr. A.K. Ghosh<br>Dept. of Aerospace Engg.<br>IIT Kharagpur                | 2. Dr. N.G. R. Iyengar<br>Dept. of Aerpc Engg.<br>IIT Kharagpur |
| 3. Shri A.K. Chakrabarti<br>Dept. of Aerospace Engg,<br>k-15, DRDL, Hyderabad | 4. Shri S.C. Ghosh,<br>Aerpc Engg,<br>LPSC, Trivandrum          |

### **Department of Production Engineering** **Chairman**

Prof. (Dr.) Surender Kumar

### **Members**

- |                             |                             |
|-----------------------------|-----------------------------|
| 1. Prof. (Dr.) A.M. Agarwal | 2. Prof. (Dr.) Ashok Mishra |
| 3. Prof. A.K. Thakur        | 4. Prof. Vinay Sharma       |

### ***Panel of Experts from outside of the Institute***

#### ***Members***

- |  |   |
|--|---|
| 1. Prof. (Dr.) S.K. Agawal<br>(MNNIT, Allahabad) | 2. Prof. (Dr.) A.K. Jha<br>(IT BHU, Varanasi) |
|--|---|

### ***Department of Architecture***

#### ***Chairman***

Prof. N. Sengupta, Head of the Department

#### ***Members***

- |                           |                  |
|---------------------------|------------------|
| 1. Prof. D. J. Biswas     | 2. Mrs. P. Khare |
| 3. Prof. K.R. Rochowdhury |                  |

### ***Panel of Experts from outside of the Institute***

- |   |   |
|---|---|
| 1. Prof. Soumen Chakraborty<br>Jadavpur University, Jadavpur. | 2. Prof. B.K. Sengupta<br>IIT, Kharagpur. |
|---|---|

### ***Department of Information Science***

#### ***Chairman***

Dr. A.M. Agrawal, Head of Dept.

#### ***Member***

- |                   |                  |
|-------------------|------------------|
| 1. Dr. B.M. Karan | 2. Dr. S.C. Goel |
| 3. Dr. G. Sahoo   | 5. Bhaskar Karn  |

### ***Panel of Experts from outside the Institute***

- |   |   |
|---|---|
| 6. Dr. A.R.D. Prasad<br>Associate Prof., DRTC,<br>ISI, Bangalore. | 7. Dr.C.R.Kariddappa,<br>Head & Chairman,<br>Dept. of LIS<br>Karnatak Univ.Dharwad. |
|---|---|

\* \* \*

# IMPORTANT TELEPHONE NUMBER

Sno.	Name	Department	Phone No.	Fax No.
1.	Dr. S.K. Mukherjee	(Vice-Chancellor)	2275402	2274401
2.	Dr. K.V. Krishnamurthy	(Registrar)	2276052	
3.	Prof. Awadh Prasad	(Mechanical Department)	2275924	
4.	Prof. S.C. Goel	(Computer Department and ECE Department)	2275333, 2276184 (R&D), 2276185, 2275750	
5.	Dr. S. Kumar	(Production Department)	2275044	
6.	Dr. A. K. Chatterjee	(Space & Rocketry )	2275983, 2276224	
7.	Dr. P.C. Joshi	(Dean Academic )	2276290, 2275290	
8.	Dr. P.K. Barhai	(Physics Department)	2275522	
9.	Mr. B.B. Pant	(Training & Placement)	2275566	
10.	Prof. N. Sengupta	(Architecture Department)	2276249	
11.	Prof. S. Sengupa	(Civil Department)	2276051	
12.	Prof. A.K. Ray	(Applied Mechanics)	2276083	
13.	Dr. N. C. Mahanti	(Depart. Of Mathematics)	2276182	
14.	Dr. B.M. Karan	(Department of Electrical)	2276499	
15.	Dr. (Mrs.) M. Mukherjee	(Department of Polymer)	2276053	
16.	Dr. M.S. Nathawat	(Depart. Of Remote Sensing)	2276003	
17.	Dr. B.L. Gupta	(NTMIS)	2276181	
18.	Dr. A.M. Agrawal	(Depart. Of Management)	2276223	
19.	Prof. S.P. Bhatnagar	(Pharmacy Department)	2276249	
20.	Dr. Mohan Verma	(Controller of Examination)	2275138	2275923
21.	Dr. D. Sasmal	(Dean UG)	2275872	
22.	Dr. Gopal Pathak	(Dean Faculty Development)	2276004	
23.	Prof. A.P. Singh	(University Polytechnic)	2276008	
24.	Mr. R.K. Singh	(STEP/SIRDO)	2275823	
25.	Mr. D. Jha	(Purchase)	2275352	
	B.I.T Exchange		2275444, 2275896, 2276002, 2276210(INPCO)	
	V.I.P Guest Huse Chairman Bungalow		2275213 2275214	
	Hostels:		H1-2276074, H2-2276073,	

H3-2276072,  
H4-2276071  
H5-2276069,  
H6-2276068,  
H7-2276067,  
H8-2276075,  
H9-2276076.

**Off Campus Centre :**

1.	Kolkata	22811945 22818393
2.	Jaipur	751567 751601
3.	Allahabad	2751178 2751075
4.	Noida	2553661 4554146
5.	Ranchi (Lalpur)	2531817
6.	Bahrain	00973690025 97369287
7.	Muscat	(968) 684801 968684663

\* \* \*

# ADDRESS OF THE EXTENSION CENTRES

1. **B.I.T. Extension Center Allahabad**  
Naini, Allahabad-211010  
Phone : (0532) 2697363  
Fax: 2695682
2. **B.I.T. Extension Center Noida**  
B-7 Industrial Area  
A-7 Sector-1  
P.O TSL  
Noida-201301  
Phone: (0120) 2553661-2  
Fax : 24554146
3. **B.I.T. Extension Center Lalpur**  
Lalpur Chowk  
Ranchi-834001  
Phone : (0651) 2531817
4. **B.I.T. Extension Center Kolkata**  
14-B CAMAC STREET  
Kolkata-700017  
Phone (033) 22811945/  
22818393  
Fax : 22818393
5. **B.I.T. Extension Center Jaipur**  
BISR Campus  
27, Malviya Industrial Area  
Jaipur –302017  
Phone : (0141) 2751178/2751075  
Fax : 2751601
6. **B.I.T. Extension Center Bahrain**  
C/o Mohmmmed Jalal & Sons  
W.L.L.  
Post Box-747, Manama  
Bahrain (A-Gulf)  
Phone: 00973690025  
Fax : 00973692879
7. **B.I.T. Extension Center Muscat**  
P.O. Box 249, Hamriya,  
Postal Code 131,  
Muscat, Sultanate of Oman  
Phone: (968) 684801  
Fax : 968 684663

\* \* \*

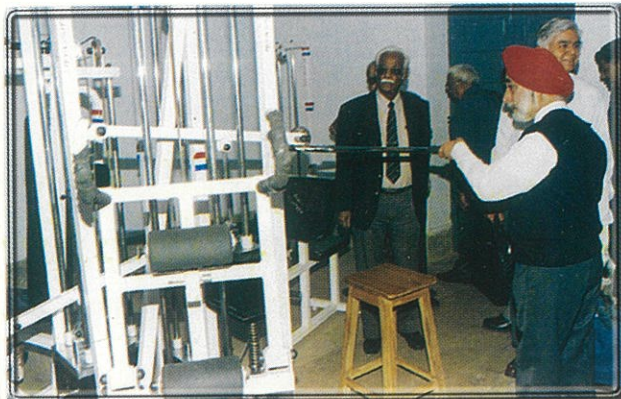
# THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and change. It begins with the first settlers who came to the Americas, and continues through the years of exploration, settlement, and the struggle for independence. The story is one of a people who have built a great nation from a small group of pioneers.

The story of the United States is a story of a people who have built a great nation from a small group of pioneers. It is a story of growth and change, of exploration and settlement, of the struggle for independence and the building of a new nation.

The story of the United States is a story of a people who have built a great nation from a small group of pioneers. It is a story of growth and change, of exploration and settlement, of the struggle for independence and the building of a new nation.

The story of the United States is a story of a people who have built a great nation from a small group of pioneers. It is a story of growth and change, of exploration and settlement, of the struggle for independence and the building of a new nation.



NBA Team at Gym



Cadets from the Institute



Chilling out at Parvati Valley



Ready to go



BITOTSAV 2003



# Birla Institute of Technology

Mesra-835 215, Ranchi, Jharkhand

Phone - (0651) 2275444, 2275896 • Fax - (0651) 2275401

E-mail : [birlatech@bitsmart.com](mailto:birlatech@bitsmart.com), • Website : <http://www.bitmesra.ac.in>

