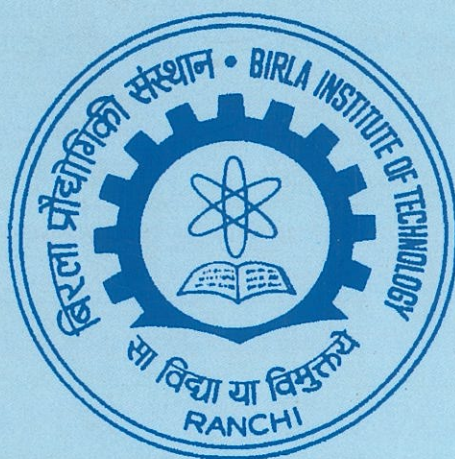


# **ANNUAL REPORT**

## **2003 - 2004**



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



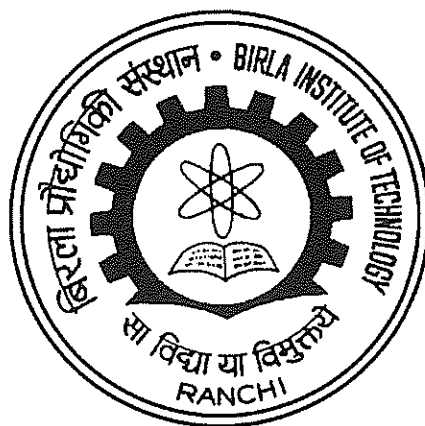


CONVOCATION 2003 – 2004



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**(DEEMED UNIVERSITY)**  
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**INDIA**

## ***प्रार्थना***

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

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## VICE-CHANCELLOR's REPORT

The Institute has continued to expand and consolidate its role as a provider of cost effective professional education of high quality both within the country and outside the country also. During the period under reference the first batch of students in the M.Tech. programmes in "New Material & Processing Technology" and "Environmental Science & Engineering" have been admitted. The first batch of students from the Bahrain International Centre of the Institute received their diplomas in the first-ever graduation ceremony of the overseas students held on Oct. 13, 2003. 24 students were declared successful and awarded diploma in the ceremony addressed by the Hon'ble Minister of Labour and Social Affairs of the State of Bahrain. This is the first occasion when any university level institution of our country held the graduation ceremony for the successful students after completion of their respective programmes from its center located outside our country. 14 more working professionals have successfully completed their B.Sc. I.T. programmes offered through the same international center. These students were also conferred the respective degrees in this Convocation. This year the first batch of Special Class Railway Apprentice of the Indian Railways received their Bachelor Degree in Mechanical Engineering after successfully completing the 4-year programme of the Institute marking the beginning of a new era of technical education in our country in the form of a unique cooperative effort between the Indian Railways and our Institute.

The Institute continued to consolidate its academic infrastructure by adding equipment worth Rs. 800 lakhs during the period. Two hostels, one for boys and the other for girls, having respectively 282 and 184 single seated rooms, were inaugurated to augment the residential infrastructure for the students. Similarly, the residential accommodation infrastructure for staff was augmented by adding 64 new units during the period under reference.

The teachers of the Institute continued to receive awards and distinctions. The faculty members of the Institute participated in many Seminars/ Symposia/Workshops/Conferences held within and outside the country. During the period under reference 90 faculty members were sponsored to attend national level programmes while 6 faculty members were supported to attend international programmes. Many faculty members received recognition in form of awards, medals and certificates of merits for the research publications made in the journals of national level professional societies like, the Institution of Engineers (India), Indian Institute of Industrial Engineering, Indian Pharmaceutical Society etc. Many of the research publications published by the faculties received recognitions and awards like the "Best Case Study" in the area of Industrial Engineering published in the Journal of the Indian Institute of Industrial Engineers; the Gold Medal for the "Best Paper" published in the Journal of the Institution of Engineers (India) (Aero Space); and the "Certificate of Merit" for a paper published in the Journal of The Institution of Engineers (India) (Production Engineering Division). One of the faculty members, Dr. D. Pal of Electronics & Communication Engineering Department, undertook about a 10-week research programme in the University of London under the 'Exchange Programme' organized by the Royal Society of London and Indian National Science Academy. Dr. M.S. Nathawat, Professor and Head of the Department of Remote Sensing of our Institute was awarded citation jointly by M.S. Swaminathan Research Foundation, Chennai, Bhoovigyan Vikas Foundation, New Delhi and Department of Agriculture, Government of Andhra Pradesh for his contribution in the field of Remote Sensing and GIS Techniques. Dr.J.T. Andrews, Reader and Dr. Arun K Sarma, Lecturer of the Department of Applied Physics, received the BOYSCAST Fellowship of the Department of Science & Technology, Government of India. Dr. Mohan Verma, Professor in the Department of Space Engineering & Rocketry was honoured with 'Dalmiya HEMSI Award', instituted by Dalmiya Group of Industries and High Energy Materials Society of India, for the year 2003 in recognition

of his path breaking contribution in development of new class of liquid rocket propellants for rocket engines. He was also awarded 'Best R&D Project Award 2004' by AICTE in recognition of his meritorious research work. 'Technology Day Award 2004' was also conferred on him by the DST, Government of India, in appreciation of the unique R&D approach adopted for study of complex fluid systems.

I am further glad to report that our institution has been chosen as the Indian participating institution in the Asia Link Programme supported by the European Commission in the area of 'Wireless and Mobile Communication Technologies'. The other participating institutions and countries in this international project are Aalborg University, Aalborg, Denmark, Delft University of Technology, Delft, The Netherlands, Università di Roma Tor Vergata, Rome, Italy, and Institut Teknologi Bandung, Bandung, Indonesia. Under this project an International Centre for research in 'Wireless and Mobile Communication' was inaugurated at our Institute on March 28, 2004.

The Institute keeping in line with its commitment to the development of our great nation established a rural technology cell to implement the different provisions of the Memorandum of Understanding signed with the Khadi and Village Industries Commission, Government of India. Through this cell the Institute has taken up the task of designing small tamarind processing machine, preparation of turmeric formulation based facial cream and enhancing productivity of brass artifact production by the rural artisans.

The departments of Applied Physics, Electronics & Communication Engineering and Electrical & Electronics Engineering were identified by the Department of Science & Technology to receive support under FIST Programme to the extent of Rs. 82.00 lakhs. The Government of Jharkhand has approved a sum of Rs. 100.00 lakhs for establishing a training facility in the area of Plastic Engineering to be established in the Polymer Engineering Department of the Institute.

During the year under review, several academic interaction programmes in the form of Seminar/Symposium/Workshop were organized in the Institute. This year such activities started with a AICTE-ISTE sponsored Short-Term Training Programme on "Present Trends and Future Prospects of Non-Conventional Energy – Problems & Challenges", which was organized by the Department of Mechanical Engineering during June 9-21, 2003. National Conference on "Value Engineering – a Fast Track to Profit Improvement & Business Excellence" was held by the Department of Production Engineering between July 26-27, 2003 at the Institute premises. The Department of Space Engg. & Rocketry organized the 17<sup>th</sup> National Convention of Aerospace Engineers and National Seminar on "Indian Aerospace Vehicles – Technological Challenges" during November 3-5, 2003. 1<sup>st</sup> one-day International Workshop on "Wireless Communication Technologies" was conducted by the Department of Electronics & Communication Engineering of the Institute on November 12, 2003. The Workshop was held under the auspices of the ASIA-LINK Programme, a Euro-Asian Network of five countries wherein India was represented by our Institute. Eight international level experts from the participating countries and another 30 experts from India covering industries and academic institutions attended the said workshop. 18<sup>th</sup> National Symposium on "Plasma Science & Technology" was held by the Department of Applied Physics in collaboration with Plasma Science Society of India during December 8-11, 2003. The 48<sup>th</sup> Congress (2003) of the "Indian Society of Theoretical and Applied Mechanics" was organized at the Institute by the Department of Applied Mechanics between Dec.18 and 21 2003. A one-day National Seminar on "Sustainable Energy Development" was held in the Institute on Jan. 24, 2004 by the Department of Mechanical Engineering. The seminar was inaugurated by our esteemed Chancellor, H.E. Shri Ved Prakash Marwah. A one-week course on "Heritage Management : Emerging Trends and Need of Indigenous Approaches", sponsored by the Council of Architecture, was organized and hosted by the Department of Architecture during March 15 -19, 2004. The last one of this year was a National Workshop on "Curriculum Development



for Technical Education" was held by the Department of Production Engineering at the Institute premises during April 3 - 4, 2004. In this workshop the main focus was given to give and share new ideas of developing and modifying the existing curriculum to have an edge in rapidly changing world scenario.

The Institute organized during this period a few Games & Sports activities. The Eastern Zone Inter Technical Cricket Tournament in memory of Shri Chetan Devraj, East Zone Inter-University Badminton Tournament for men and women were organized between Oct. 31 - Nov. 4, 2003 and Jan. 5-10, 2004 respectively. The Badminton Tournament was held in the enclosed-built Indoor Badminton Stadium, constructed with the cost of Rs. 50.00 lakhs having contribution from the Government of India, Government of Jharkhand and the Institute itself.

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 'BITOTSAV' in the campus from 8<sup>th</sup> to 12<sup>th</sup> February, 2004.

The XIV Convocation of our Institute was held on 8<sup>th</sup> February, 2004 in which a total of 1439 students was awarded several degrees and diplomas, out of which 1001 students were recipients of Under-graduate degrees, 432 Post-graduate degrees, 6 Post-graduate diplomas and 6 Doctoral degrees.

I would further like to report that to meet the demand of multiple skills from graduating engineers, the Institute proposed to the UGC re-introduction of 'double degree' programmes for the students of Engineering who completed their Under-graduate degree in any discipline.

Keeping in line with the national level effort to encourage effective teaching of science the Institute faculty members have taken active interest in re-visiting the process of 'Communication Concepts of Physics', particularly, at school level. Dr. R.K. Popli, Professor of Applied Physics Department has published quite a few articles in this domain and has also organized programmes for school teachers exposing them the techniques of 'pragmatically irreducible sub-concepts', 'operational-level concepts' and 'explicating the implicit'. This effort is a part of developing the concept of common man's science, which is considered to be essential to inculcate the scientific temper effectively amongst the students and youths of our country.

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 the Institute during the period under report.

\*\*\*

## INTRODUCTION

The Institute was established as an All India Institute for imparting technical education and research on 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 place of pride 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 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 the 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 from the main building. 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.

<b>Institute Building</b>	<b>Sq. mtrs.</b>
Main building & Administration block	3700
Class room & laboratory, Drawing halls, Staff room's etc	19300
Library block	2600
Mini-Auditorium	450
Space Engg. & Rocketry block including Explosive and Fuel cell	930
Cryogenic laboratory (SER) (Near Completion)	118
Workshop sheds, General stores, Garage/Godown	3721
Gymnasium	850
Indoor Badminton Stadium	977
Animal House	400
R & D Building	7200
Multi Purpose Hall	360
Multi Purpose Hall (Near Completion)	348
Biotechnology Centre	3334
Polymer Engineering	744
Lecture Theater (Under Construction)	1104

### **Residential Complex**

Staff quarters in different categories	360 Nos.
Residential complex for supporting services :	
Guards, Dairy, Shopkeepers, Washerman etc.	70
Staff Quarters in different categories (Nearing completion)	12

### **Hostel Accommodation**

Seven Boy's Hostel	1694 Rooms (single)
Four Girl's Hostel	332 Rooms (double)
	&184 Rooms (single)
One Foreign Student's Hostel	152 Rooms (single)
Boys Hostel (Under Construction)	284 Rooms (single)

### **Guest Accommodation**

The Institute maintains three Guest-houses. Two general purpose with 38 furnished rooms and one 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 (three indoor & five outdoor)	-----	8
• Kho-Kho ground	-----	1
• Kabaddi ground	-----	1

## Dispensary-Cum-Health Centre

1. No. of Beds : Male – 08, Female – 04.
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), Maternity & Anti-natal-check-up.
3. In case of any emergency, which is to be managed by super specialist in Intensive Care Center 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 to residence of 10 local Villages at free of cost. One Rural Dispensary has been started for the local villagers under community health services by the Institute in a near by village. One doctor and one paramedical staff are posted there from 8 a.m. to 6 p.m. daily for the medical treatment of villagers.
5. One dispensary with two doctors and paramedical staff has been started functioning at Lalpur Extension Centre to fulfill the immediate medical requirements of staff and students of the center.
6. Specialist Facility – Services of specialist of Rajendra Institute of Medical Sciences, Ranchi are available to the Hospital.
7. Staff - members and their dependants as well as students have been covered by Medclaim for reimbursement of their medical expenses.

8. 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.        |
| • Garage 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 eight hostels for boys and four 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 large number 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 outer games, quizzes, competitions and adventure trips are very attractive feature of the hostel life.

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

Each hostel has an Independent Mess, completely managed by the students through Mess committee members elected 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 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	60	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
<b>Master of Engg. Degree Courses:</b>			
Electrical specialization	12	2 years	1964
1. Control system			
2. Power system			
Mechanical specialization	06	2 years	1964
1. Heat Power Engg.			
2. Design of Mech. Equipment			
Civil specialization	02	2 years	1964
1. Soil Mechanics			
2. Structural & Foundation Engg.			
Electronics & Communication specialization	12	2 years	1965
1. Instrumentation			
2. Microwave			



Space Engg. & Rocketry specialization	10	2 years	1965
1. Rocket Propulsion			
2. Aerodynamics			
Comp. Added. Design & Drafting specialization	05	2 years	1999
1. Comp. Aided Analysis & Design			
2. Tribology			
Automated Manufacturing Process	25	2 years	
Software Engineering	15	2 years	2000
Quality Engineering & Mngt	25	2 years	2002
<b>Master of Technology Programmes</b>			
Remote Sensing	18	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>Master of Business Administration</b> specialization	60	2 years	1980
1. Marketing			
2. Finance			
3. Systems			
4. Industrial Management			
<b>Master of Pharmacy</b> specialization	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 knowledge, the part-time Post-graduate Programme are offered at 3 levels:

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 (Rajasthan)	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 2003-2004

### Student Enrollment.

During the academic year 2003-2004, a of total of 6532 students were registered in various courses. The branch-wise enrolment is detailed below.

A. Course	Full-Time	Part-Time
Bachelor of Engineering.	2172	-
Bachelor of Architecture	96	-
Bachelor of Pharmacy	132	-
Bachelor of Hotel Management & Cat. Tech	56	-
Bachelor of Nautical Sciences	94	-
Bachelor of Comp. Applications	1107	-
Bachelor of Business Administration	949	10
Bachelor of Technology	-	4

Diploma in Engineering	252	
Master of Business Administration	315	47
Master of Computer Applications	797	71
Master of Pharmacy	50	-
Master of Engineering	100	5
Master of Technology	112	13
M.Sc (Biomedical Instrumentation)	46	-
M.Sc (Information Science)	61	-
M.Sc (Information Technology)	42	-
<b>Total</b>	<b>6382</b>	<b>150</b>
<b>Grand Total</b>	<b>- 6532</b>	

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

As many as 129 students were pursuing the Ph.D. programme in the area of Engineering, Science, Pharmacy and Management during the academic session 2003-2004.

#### **New intake in 2003-2004**

In the academic year 2003-2004, 2269 fresh students admitted in various disciplines. The branch-wise backup is given below.

<b>A Course</b>	<b>Full-Time</b>	<b>Part-Time</b>
Bachelor of Engineering	530	-
Bachelor of Architecture	17	-
Bachelor of Pharmacy	38	-
Bachelor of Nautical Sciences	94	
B.C.A.	323	-
Bachelor of Hotel Management Tech.	33	10
Diploma Engg.	102	19
M.C.A	329	-
M.E.	59	3
M.Tech.	58	
M.Sc.	68	-
M. Pharmacy	25	-
<b>Total</b>	<b>2237</b>	<b>32</b>
<b>Grand Total</b>	<b>- 2269</b>	



## **B. Enrollment in Ph.D. Programme –**

Thirty two new Scholar registered for the Ph.D. Programme in the area of Engineering, Science, Pharmacy and Management during session 2003-2004. The details are given below.

<b>SN.</b>	<b>Name of Scholars</b>	<b>Title of Thesis</b>
1.	Mr. P.N. Mishra	"Investigation of the Mechano-Emission characteristics during crack propagation in some ferromagnetic materials."
2.	Mr. Raghavendra Kumar Mishra	"Prediction of Mechanical Behavior of Composites using Homogenization."
3.	Mr. Vivek Kumar Gaba	"Investigation on the Solar hybrid Cold Storage cum Power Generation System for the State of Jharkhand."
4.	Ms. Richa Pandey Ojha	"Virtual Prototyping of Human Limb and its myogenic control using reverse engineering method."
5.	Mr. Bibhanshu Sekhar Choudhary	"Mechatronics based Integrated Bell-Conveyor System Optimal Design for Bulk Solid handling."
6.	Mr. Devdas B. Lata	"Production, Storage and use of Hydrogen as substitute for Hydrocarbon Fuels."
7.	Mr. Prabal Datta	"Numerical Investigation of some convective boundary layer flows."
8.	Mr. Raj Kumar Gothwal	"Rhizosphere Microbial Community Analysis of Soil from hot arid regions of Rajasthan."
9.	Ms. Parul Makhija	"Study of Proteases from Halophilic Bacteria."
10.	Ms. Rashmi Mishra	"Microbiological investigation on recovery of Zinc from Low grade ores and other waste products."
11.	Mr. R.N. Mandal	"Participatory Delivery of Built-Space for Development of Social Infrastructure."
12.	Mr. Lakhan Lal Mahto	"Aquatic Zonation and Mapping of Fish Biodiversity in parts of North East Region of India using GIS Remote Sensing Techniques."
13.	Mr. Nagaraja S.R.	"Industrial Application of Shock Waves."

14. Mr. Vijay Agrawal "Indian Manufacturing Industry-Causes of Declining Trend and its Impact on Indian Economy."
15. Mr. Pradip Banerjee "Emerging Trends in Farm Mechanization and Marketing Prospects of Farm Machineries in West Bengal."
16. Ms. Anamika Roy "Characteristics of Microstrip Antennas Operated at Higher Order Modes."
17. Mr. N. Yadav "Evolution of Sequential Oscillation in Single Organic Substrate in a Chemical System."
18. Mr. P.K. Das "Development of Programmable Logic Controller based Automatic Generation Control."
19. Mr. Mrinal Mishra "Constraint Satisfaction problems in Electromagnetic."
20. Mr. Gurvinder Singh "Identification of Novel Cardioprotectives for application in cardiomyopathies."
21. Mr. V. Sadhish Kumar "Investigation of some Natural Polymer on Oral controlled Drug Delivery System and its Preclinical & Chemical Evaluation."
22. Mr. N.V. Rabindra "Search for polymorphs in a few selected drugs."
23. Mr. Pradosh Kumar Mohapatra "Pharmaceutical studies on Capparis Species used in indigenous System of Medicine."
24. Mr. Sanjay Kumar Panda "Pharmacognostical, Phytochemical & Pharmacological studies on Tubers of Chlorophyllum jant & Fez."
25. Mr. Vijay Pandey "Development of Feature Recognition System : A link between Design and Manufacturing."
26. Mrs. Rina Agrawal "Knowledge Management based Techniques to resolve Complex Problems of High Risk Turn-key projects."
27. Mr. Pradeep Kumar "Technology Management in Coal Industry with reference to open case mines of Coal India Ltd."

- |     |                               |   |
|-----|-------------------------------|---|
| 28. | Mr. Birendra Kumar Singh      | "Hydraulic jump properties over a roughbed in composite and non-composite channels."        |
| 29. | Mr. Sharad Chandra Srivastava | "Intelligent Controllers for Flexible Manufacturing Environment."                           |
| 30. | Mrs. B. Sailaja               | "Decision Support System (DSS) for Rice Management using Geographical Information Systems." |
| 31. | Mr. Abhishek Kumar            | "Phytopharmacological studies on some Herbal Drugs of Ayurvedic Importance."                |
| 32. | Mrs. S.M. Verma               | "Synthesis and Pharmacological studies of some Azabicyclononane Analogs."                   |

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

The following scholars have submitted the Ph.D. Thesis for evaluation during the year 2003-2004.

- | <b>SN.</b> | <b>Name of Scholars</b>  | <b>Title of Thesis</b>   |
|------------|--------------------------|--|
| 1.         | Ashish Kumar Chakraborty | Development of an Alternative Robust Algorithm for robotic Vision.   |
| 2.         | Somnath Chattopadhyaya   | Transfer of Agile Manufacturing Small Technology to Rural, Medium and Scale Industries (with Special Reference to Indian Manufacturing Environment). |
| 3.         | Asha Prasad              | Electricity Sector Reforms in India and Human resource Adjustment Issues.  |
| 4.         | Anjana Pradhan Ghorai    | Some Problems of Seismic Waves in Layered Media.   |
| 5.         | Manjari Chakraborty      | Restructuring undergraduate Education of Architecture in India Realities and Reforms.  |
| 6.         | Shradha Shivani          | Socio-Cultural Context of Entrepreneurship A Study of Entrepreneurs at Ranchi.   |
| 7.         | Kalyan Chatterjee        | Development of Dual Mode and Soft Computing Based Control Techniques for Load Frequency Controller of Interconnected Thermal Power Systems.          |

## Convocation, Results, Degree/Diploma Awarded

Upon the recommendation of the Board, the following scholars who have cleared the programme during 2003-2004 were awarded Degree/Diploma in the convocation 2003-2004 held in February 2004.

### A. Ph.D. Degrees :

SN.	Name of Scholar	Titles of Thesis
1.	Pramod Kumar Dash	"Experimental Studies on Fatigue of Carbon Fibre Reinforced Composites Under Adverse Environmental Conditions."
2.	Rabindra Prasad Sharma	"Computer Aided Analysis of Three Dimensional Natural Convection in Porous Media"
3.	Debanghsu Chakraborty	"Leadership and Motivation: A Critique of Western and Eastern Thoughts"
4.	Pradeep Kumar Chatterjee	"Development of Strategic Marketing System for Engineering Consultancy Services in the Domain of Industrial marketing"
5.	Bhaskar Karn	"Fuzzy Information Retrieval"
6.	Ajay Srivastava	"Effect of Subsurface Features on the Geomorphology of Gangetic Plain: An Integrated Approach Using Remote Sensing and Geographic Information System"

### B. Other Degrees/Diplomas :

### C. Course & Branch Cumulative

		<u>Class Obtained</u>			
		I	II	Total	Cum.Total
<b>I. Post Graduate Degrees :</b>					
Master of Engineering	: Civil	2	-	2	
	: S.E. & R.	4	-	4	
	: A.M.S	6	-	6	
	: CAAD	5	-	5	
	: Software	15	-	15	
	: ECE	6	4	10	
	: Electrical	11	2	13	
	: Mechanical	7	-	7	
Master of Pharm. Sc.	: M.Pharm.	19	5	24	
Master of Comp. App.	: M.C.A.	102	46	148	
Master of Business Admn.	: M.B.A.	29	21	50	



Master of Science	: B.M.I.	4	4	8	
	: Information Sc.	24	5	29	
	: Information Tech.	17	5	22	
	: Electronics & Telecom.	134	17		
M. Tech.	: Computer Science	42	16	58	
	: Remote Sensing	12	2	14	
		-----	-----	-----	-----
		<b>318</b>	<b>114</b>	<b>432</b>	<b>432</b>

## II. Post Graduate Diploma :

	I	II	Total	Total
: Diploma in Engg. (CA)	1	-	1	
: Business Administration	-	1	1	
: Computer Applications	1	3	4	
		-----	-----	-----
		<b>2</b>	<b>4</b>	<b>6</b>

## III. Under Graduate Degrees :

	ID	I	II	Total	
Bachelor of Engineering	: Mechanical	36	37	-	73
	: E.E.E.	18	25	-	43
	: E.C.E.	45	48	-	93
	: Civil	-	07	-	7
	: Computer Sc.	43	30	-	73
	: Production	05	04	-	09
	: Polymer	-	03	-	03
Bachelor of Pharm. Sc.	: B.Pharm.	08	14	-	22
Bachelor of Architecture	: B. Arch.	13	11	-	24
Bachelor of Science	: Electronics	-	01	-	01
	: B.C.A.	254	86	-	340
	: B.B.A.	64	70	-	134
Bachelor of Technology	: Mechanical	23	41	-	64
	: E&E	21	39	-	60
	: Civil	19	36	-	55
		-----	-----	-----	-----
		<b>549</b>	<b>452</b>	<b>-</b>	<b>1001</b>
		<b>Grand Total : 1439</b>			

## FACULTY POSITION INCLUDING EXTENSION CENTER

### A. Summary of the faculty position :

Category	Number
Professor	39
Reader	68
Senior Lecturer	94
Lecturer	187
Associate Lecturer	51
PSO	1
SO	1
Senior Sport Officer	1
Other R A Cum Tutor, Programmer, Univ. Teacher	26
AMET Faculty	43
<b>Total</b>	<b>431</b>

### B. Departmentwise details of faculty position :

#### Department of Architecture

Sl. No.	Name	Designation	Qualification
1.	Dr. Ajay Khare	Reader	Ph.D. (UK)
2.	Mrs. Manjari Chakraborty	Reader	M.Tech. (C.Sc.), PGDEE
3.	Mr. D. J. Biswas	Reader	MCP
4.	Mr. N. R. Mandal	Reader	MUP
5.	Mrs. Ritu Kumari	Lecturer	MURP
6.	Mrs. Rachna Khare	Lecturer	PGDEE
7.	Mr. S. P. Bhattacharya	Lecturer	M. Tech. (Str.),
8.	Mrs. Jayeeta Dey	CAAD Programmer	B. Arch.

#### Department of Applied Chemistry

Sl. No.	Name	Disignation	Qualification
1.	Dr. Usha Jha	Reader & Head	Ph.D.
2.	Dr. P.K. Srivastava	Reader	Ph.D.
3.	Dr. D. Tiwary	Reader	Ph.D.
4.	Dr. Bimal Verama	Lecturer	Ph.D.

\* Appointment during the year 2003-2004

5.	Dr. R.K. Dey	Lecturer	Ph.D.
6.	Dr. I.Sinha	Lecturer	Ph.D.
7.	* Dr. J.P. Pandey	Lecturer	Ph.D.
8.	Mr. Gyan Kumar Agrawal	Associate Lecturer	

#### Department of Applied Mathematics

Sl. No.	Name	Disignation	Qualification
1.	Prof. N.C. Mahanti	Professor & Head	Ph.D.
2.	Dr. S.S. Roy	Reader	Ph.D.
3.	Dr. S.K. Jain	Reader	Ph.D.
4.	Dr. S.K. Chakraborty	Reader	Ph.D.
5.	Dr. S.K. Samal	Reader	Ph.D.
6.	Dr. R. Verma	Lecturer	Ph.D.
7.	Dr. P.K. Mishra	Lecturer	Ph.D.
8.	* Dr. P. Saikrishnan	Lecturer	Ph.D.
9.	* Dr. M. Trivedi	Lecturer	Ph.D.
10.	* Dr. S. Padhi	Lecturer	Ph.D.
11.	Mrs. A. Pradhan	Associate Lecturer	M.Sc.
12.	Mr. P. Datta	Associate Lecturer	M.Sc.
13.	* Mr. D.R. Mukherjee	R.A. Cum Tutor	M.Sc.

#### Department of Applied Mechanics

Sl. No.	Name	Designation	Qualification
1.	Prof. A.K. Roy	Professor & Head	M.Tech. M.S.
2.	Prof. R.P. Singh	Professor	M.E.
3.	Prof. K.R. Roychowdhury	Professor	M.E.
4.	* Mr. J. Srinivas	Reader	
4.	Mr. U.S. Prasad	Lecturer	M.E.
5.	Mr. R.K. Ranjan	Lecturer	M.E.
6.	Mr. Rajiv Ranjan	Lecturer	M.E.
7.	Mr. Alok Kumar	Lecturer	M.E.

\* Appointment during the year 2003-2004

**Department of Applied Physics**

Sl. No.	Name	Designation	Qualification
1.	Dr. P.K. Barhai	Professor & Head	Ph.D.
2.	Dr. D. Jairath	Professor	Ph.D.
3.	Dr. R.K. Popli	Professor	Ph.D.
4.	Dr. A.K. Srivastava	Principle Scientific Officer	Ph.D.
5.	Dr. G.G. Sarkar	Reader	Ph.D.
6.	Dr. J.T. Andrews	Reader	Ph.D.
7.	Dr. Swapan Konar	Reader	Ph.D.
8.	Dr. Sarang Medhekar	Senior Lecturer	Ph.D.
9.	Dr. (Mrs.) S. Keshri	Senior Lecturer	Ph.D.
10.	Dr. S.K. Sinha (I)	Senior Lecturer	Ph.D.
11.	Dr. R.K. Paul	Lecturer	Ph.D.
12.	Dr. Arum Sharma	Lecturer	Ph.D.
13.	Dr. S.K. Sinha (II)	Lecturer	Ph.D.
14.	* Dr. A. Ray	Associate Lecturer	Ph.D.
15.	Mr. M.K. Sinha	Associate Lecturer	M.Sc.
16.	* Mrs. Bornali Sarma	Associate Lecturer	M.Sc.

**Department of Bio-Medical Instrumentation**

Sl. No.	Name	Designation	Qualification
1.	Mr. Rakesh Kumar Sinha	Lecturer	M.Sc.
2.	Mr. Surendra Kumar	Lecturer	M.E.
3.	Mr. Supriya Kumar Das	Associate Lecturer	B.E.

**Department of Biotechnology**

Sl. No.	Name	Designation	Qualification
1.	Dr. D. Sasmal	Professor & Head	M. Pharm., Ph.D. Pharmacology, Toxicology
2.	* Dr. A.S. Vidyarthi	Reader	M. Tech., Ph.D. Bio-chemical Engineering
3.	Dr. P. Sukla	Lecturer	M.Sc., Ph.D. Microbiology, Fungal Biotechnology
4.	* Dr. K. Mukhopadhyay	Lecturer	M.Sc., Ph.D. Plant Tissue Culture, Plant Mol. Bio.

\* Appointment during the year 2003-2004

5.	* Dr. Kanchan Phadwal	Lecturer	M.Sc., Ph.D. Microbiology, Bioinformatics
6.	* Dr. Sanjay Ghosh	Lecturer	M.Sc., Ph.D. Molecular Genetics
7.	* Mr. P.K. Mishra	Lecturer	M.Tech.
8.	Mr. Harmeet Singh	Assoc. Lecturer	M.Sc. Zoology Cell & Molecular Biology
9.	* Mrs. Supreet Kaur	Assoc. Lecturer	M.Sc. Biochemistry

### Department o Civil Engineering

Sl. No.	Name	Designation	Qualification
1.	Prof. S. Sengupta	Professor & Head	M.E.
2.	Dr. K.R. Roychoudhary	Professor	Ph. D.
3.	Dr. K.V. Krishnamurty	Professor	Ph.D.
4.	Dr. Gopal Pathak	Professor	Ph. D.
5.	Dr. Balram Singh	Reader	Ph. D.
6.	Dr. Anand Kumar Sinha	Reader	Ph. D.
7.	* Dr. R.R. Sahay	Reader	Ph. D.
8.	Mr. Arun Kumar	Lecturer	M.E.
9.	Mrs. Bindu Lal	Lecturer	M.E.
10.	Mr. Birendra Kumar Singh	Lecturer	M.E.
11.	Mrs. S. Chakraborty	Lecturer	M.E.
12.	Mr. Suresh Kumar	Lecturer	M.E.
13.	* Mr. Rajesh Kumar	Lecturer	M.E.
14.	* Mr. U.C. Sahoo	Lecturer	M.Tech.
15.	* Mr. Siddhartha Sengupta	Lecturer	M.E.
16.	Mr. Jitu Kujur	Associate Lecturer	B.E.

### Department of Computer Science

Sl. No.	Name	Designation	Qualification
1.	Prof. S.C. Goel	Professor & Head	M.E.
2.	Dr. G. Sahoo	Professor	Ph.D.
3.	Mr. S. Dutta	Reader	B.Sc., PGDCA, MCA, MBA
4.	Mr. P.K. Sharma	Senior Lecturer	B.Sc., M.Sc., PGDCTA, M.Tech.
5.	* Mr. Ravi Prakash	Senior Lecturer	B.Sc., M.Sc., MCA

\* Appointment during the year 2003-2004



6.	Mr. K. Lal	Lecturer	M.Tech.
7.	Mr. D.K. Mallick	Lecturer	M.Tech.
8.	Mr. S.K. Chatterjee	Lecturer	M.Tech.
9.	Mrs. Aruna Jain	Lecturer	M.Tech.
10.	Mr. B.K. Sarkar	Lecturer	B.Sc., M.Sc., MCA
11.	Mr. R.K. Jena	Lecturer	M.Tech.
12.	Mr. I. Mukherjee	Lecturer	B.Sc., M.Sc., MCA
13.	Mr. V.K. Jha	Lecturer	B.E.
14.	Mr. P. Paul	Lecturer	M.E.
15.	* Mr. S. Paul	Lecturer	B.Sc., MCA
16.	Mr. Abhishek Srivastava	Lecturer	M.E.
17.	Mr. Pankaj Gupta	Lecturer	M.Tech.
18.	Mrs. Itu Snigdha	Lecturer	M.E.
19.	Mr. S. Vijayvargiya	Lecturer	M.Tech.
20.	* Mr. K.S. Patnaik	Lecturer	M.E.
21.	* Mr. Ritesh Jha	Lecturer	B.Sc., M.Sc.
22.	* Mr. I.D. Ram	Lecturer	M.E.
23.	* Mr. A. Mustafi	Lecturer	B.Sc., MCA
24.	* Mr. Tara Shankar Rudra	Lecturer	B.E. M.I.T.
25.	* Mr. K.K. Patnaik	Lecturer	M.Tech.
26.	Mrs. Sanchita Ghosh	Lecturer	M.Tech.
25.	Mr. K.T. Lucas	Associate Lecturer	M.Tech.
26.	Mr. M.K. Thakur	Associate Lecturer	M.Tech.
27.	Mr. B.K. Chanda	Associate Lecturer	BA, PGDCA, MCA
28.	Ms. S. Mishra	Research Associate	M.Tech.
29.	Mr. M. Pap Rao	Research Assistant	B.Sc. MCA

#### Department of Electrical & Electronics Engineering

Sl. No.	Name	Designation	Qualification
1.	Dr. B.M. Karan	Ph. D.	
2.	Dr. R.C. Prasad	Professor	Ph. D.
3.	Prof. B.P. Roy	Professor	M.E.
4.	Prof. R.K. Narayan	Professor	M.S.
5.	Dr. B.N. Das	Professor	Ph. D.
6.	Prof. N. Pathak	Reader	M.E.

\* Appointment during the year 2003-2004

7.	Dr. T. Ghose	Reader	Ph. D.
8.	Mr. P.R. Thakura	Lecturer	M.E.
9.	Mrs. N.L. Nath	Lecturer	M.E.
10.	Mr. R.C. Jha	Lecturer	M.E.
11.	Mr. D.K. Mohanta	Lecturer	M.E.
12.	Mr. K. Chatterjee	Lecturer	M.E.E.
13.	Mr. P.K. Upadhyay	Lecturer	M.Sc.
14.	Ms. Vijaya Laxmi	Lecturer	M.E.
15.	Ms. Jyotsna Sahu	Lecturer	M.E.
16.	Mr. S. Ghosh	Lecturer	M.E.
17.	Mr. Prem Prakash	Lecturer	M.E.
18.	* Mr. K.C. Jana	Lecturer	M.E.
19.	* Mr. S.G. Kadwane	Lecturer	M.E.
20.	* Mr. S. Samanta	Lecturer	M.E.
21.	* Mr. Avinash Kishore	Lecturer	M.E.

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

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Prof. S.C. Goel	Professor & Head	M.E.
2.	Prof. R. Sukesh Kumar	Professor	M.E.
3.	Mr. M. Puri	Reader	M.E.
4.	Mr. K.K. Masand	Reader	M.E.
5.	Mr. B.B. Pal	Reader	M.E.
6.	Dr. N. Gupta	Reader	Ph.D.
7.	Dr. S.K. Ghorai	Reader	Ph.D.
8.	Dr. J.S. Roy	Reader	Ph.D.
9.	Mr. N. Poddar	Reader	M.E.
10.	* Mr. P. Kumar	Sr. Lecturer	M.E.
11.	Mr. V.R. Gupta	Lecturer	M.E.
12.	Mr. S.S. Solanki	Lecturer	M.E.
13.	Mr. V.K. Singh	Lecturer	M.E.
14.	Dr. S. Srivastava	Lecturer	Ph.D.
15.	Mr. K. Mahto	Lecturer	M.E.
16.	* Mr. Sanjeet Kumar	Lecturer	M.E.
17.	* Mr. J. Sahay	Lecturer	M.E.

\* Appointment during the year 2003-2004

18.	Mr. P.K. Upadhyay	Lecturer	M.E.
19.	* Mr. Sanjay Kumar	Lecturer	M.Tech.
20.	Mr. M.K. Jha	Associate Lecturer	B.E.
21.	Mr. N. Chattoraj	Associate Lecturer	B.Tech.

#### **Department Hotel Management & Catering Technology**

Sl. No.	Name	Designation	Qualification
1.	Mr. Ashish Dahiya	Lecturer	B.A., H.M.
2.	Mr. Moloy Das	Chef	B.Sc., H.M.
3.	* Mr. Priti Ranjan Sahoo	Lecturer	H.M.
4.	Mr. Roshan Prasad	Associate Lecturer	H.M.
5.	Mr. Sanjay Kumar	Associate Lecturer	B.A., M.T.M.
6.	* Mrs. Swati K. Kumar	Lecturer	H.M., M.Tech.

#### **Department of Management**

Sl. No.	Name	Designation	Qualification
1.	Dr. A.M. Agrawal	Professor & Head	Ph.D.
2.	Mr. S.C. Mishra	Reader	M.E.
3.	Dr. A.N. Jha	Reader	Ph.D.
4.	Dr.S.K. Bose	Reader	Ph.D.
5.	Dr. (Mrs.) M. Bhagat	Reader	Ph.D.
6.	Dr. R.N. Bhagat	Sr. Lecturer	Ph.D.
7.	Mrs. S. Shivani	Lecturer	MBA
8.	Mr. Anand Kumar	Lecturer	MBA
9.	Mr. Vijay Agrawal	Lecturer	MBA
10.	Ms. Ruma Tripathi	Lecturer	MBA
11.	Mr. P.C. Jha	Associate Lecturer	M.A.

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

Sl. No.	Name	Designation	Qualification
1.	Dr. Bhaskar Karn	Lecturer	Ph.D.
2.	* Mr. Arindam Dutta	Associate Lecturer	M.Sc.

\* Appointment during the year 2003-2004

### Department of Mechanical Engineering

Sl. No.	Name	Designation	Qualification
1.	Prof. Ashok Mishra	Professor & Head	D.Sc.
2.	* Dr. A.N. Sinha	Professor	Ph.D.
3.	Dr. M.N. Verma	Reader	Ph.D.
4.	Dr. P.V. Kumar	Reader	Ph.D.
5.	Dr. B.N. Giri	Reader	Ph.D.
6.	Mr. P.K. Choudhary	Reader	M.E.
7.	Dr. Arbind Kumar	Reader	Ph.D.
8.	Mr. Kumar Arbind	Reader	M.Tech.
9.	* Mr. D.B. Laata	Sr. Lecturer	M.E.
10.	Mr. R.P. Sharma	Lecturer	M.E., M.Tech.
11.	Mr. Girish Pathak	Lecturer	M.Tech.
12.	Mr. S.K. Sinha	Lecturer	M.Tech. MBA
13.	Mr. A.K. Roy	Lecturer	M.E.
14.	Mr. B.S. Choudhary	Lecturer	M.Tech.
15.	Mr. Rajeev Kumar	Lecturer	M.E.
16.	Mrs. R.P. Ojha	Lecturer	M.E.
17.	Mr. J. Singh	Lecturer	M.Tech.
18.	Ms. Rashmi Rekha Sahoo	Lecturer	M.Tech.
19.	Mr. V.S. Chauhan	Lecturer	M.Tech.
20.	Mr. Ranjeet Ranjan	Lecturer	M.E.
21.	* Mr. R.K. Mishra	Lecturer	M.Tech.
22.	* Mr. Vivek Gaba	Lecturer	M.E.
23.	* Mr. O.P. Pandey	Lecturer	M.E.
24.	* Mr. S.K. Mishra	Lecturer	M.E.
25.	* Mr. P. Mishra	Lecturer	M.E.
26.	Mr. B.K. Prabhakar	Associate Lecturer	M.E.

### Department of Pharmaceutical Sciences

Sl. No.	Name	Designation	Qualification
1.	Prof. S.P. Bhatnagar	Professor & Head	M. Pharm.
2.	Prof. D. Sasmal	Professor	Ph.D.
3.	Prof. G.M. Panpalia	Professor	Ph.D.

\* Appointment during the year 2003-2004

4.	Dr. B.N. Sinha	Reader	Ph.D.
5.	Dr. P.R.P. Verma	Reader	Ph.D.
6.	Mrs. S.G. Panpalia	Reader	M. Pharm
7.	Mr. S. Samanta	Reader	M. Pharm
8.	Dr. S. Jha	Reader	Ph.D.
9.	* Dr. R.N. Gupta	Reader	Ph.D.
10.	Mrs. S.M. Verma	Sr. Lecturer	M.Pharm
11.	Mr. R. Chandra	Lecturer	M.Sc., M. Tech.
12.	Mrs. R. Mazumder	Lecturer	M. Pharm
13.	Mr. A. Mazumder	Lecturer	M.Pharm, MBA
14.	Dr. S. Ganguly	Lecturer	Ph.D.
15.	Mr. A. Oraon	Lecturer	M.Pharm
16.	Mrs. P. M. Mazumder	Lecturer	M.Pharm
17.	* Mr. A. Patnaik	Lecturer	M.Pharm
18.	Mr. Jayaram Kumar	Lecturer	M.Pharm
19.	* Mr. Venkatesan J.	Lecturer	M.Pharm

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

Sl. No.	Name	Designation	Qualification
1.	Dr. (Mrs.) M. Mukherjee	Professor & Head	B. Tech (Hons), M.Sc. (Engg.), Ph.D.
2.	Dr. P. Mukhopadhyay	Lecturer	B.E., M. Tech., Ph.D.
3.	Sri. C. Guria	Lecturer	B.Sc. (Hons.), B.Tech., M.E.
4.	Sri. S. Datta	Lecturer	B.Sc. (Hons.), M.Tech.
5.	Sri. G. Sarkhel	Lecturer	B.Sc. (Hons.), B.Tech, M.Tech.
6.	Sri. K. Kumar	Associate Lecturer	B.Tech, MBA

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

Sl. No.	Name	Designation	Qualification
1.	Dr. Surendra Kumar	Prof. & Head	Ph.D.
2.	Prof. Atul Anand	Reader	B.E. , MBA
3.	Prof. A.K. Thakur	Reader	M.Tech.
4.	Dr. Alok Varma	Reader	Ph.D.

\* Appointment during the year 2003-2004



5.	Dr. B.K. Singh	Reader	Ph.D.
6.	Sri. S.P. Lal	Reader	M.E.
7.	Sri. Vinay Sharma	Lecturer	M.E.
8.	Sri. Sanjay Kumar Jha	Lecturer	M.E.
9.	Sri. Saranjit Singh	Lecturer	M.E.
10.	Sri. Ritesh Kumar Singh	Lecturer	M.E.
11.	Sri. S. Mutthukumar	Lecturer	M.E.
12.	Sri. S.C. Srivastava	Lecturer	M.E.
13.	Sri. Vijay Pandey	Lecturer	M.E.
14.	Sri. Rajeev Agrawal	Lecturer	M.E.
15.	Sri. A.N. Sinha	Lecturer	M.E.

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

Sl. No.	Name	Designation	Qualification
1.	Dr. M.S. Nathawat	Professor & Head	Ph. D.
2.	Dr. Nilanchal Patel	Reader	Ph. D.
3.	Dr. A.K. Singh	Reader	Ph. D.
4.	Mr. Subhas Chelliah	Lecturer	M.Tech (RS)
5.	Mr. Ajay Srivastava	Lecturer	M.Tech (Civil)
6.	Mrs. Richa N.K. Sharma	Lecturer	M.Sc. Physics
7.	* Mr. V.S. Rathore	Associate Lecturer	M.Sc. Geology

#### **Department of Space Engineering Rocketry**

Sl. No.	Name	Designation	Qualification
1.	Dr. A.K. Chatterjee	Professor & Head	Ph.D.
2.	Dr. P.C. Joshi	Professor	Ph.D.
3.	Dr. M. Varma	Professor	Ph.D.
4.	Dr. J.K. Prasad	Professor	Ph.D.
5.	Dr. T.K. Nandi	Reader	Ph.D.
6.	Sri. Arnab Roy	Lecturer	M.E.
7.	Dr. P.K. Dash	Lecturer	Ph.D.
8.	Sri. Sudip Das	Lecturer	M.E.

\* Appointment during the year 2003-2004

**Physical & Sports**

Sl. No.	Name	Designation	Qualification
1.	Dr. Rama Shankar Singh	Sr. Sports Officer	Ph.D.
2.	Mr. Mahendra Kumar	Lecturer	

**University Polytechnic**

Sl. No.	Name	Designation	Qualification
1.	Shri. P.K. Sinha	OSD	M.E.
2.	Shri Abinash Prasad	Lecturer	B.Sc. (Engg.)
3.	Shri Ramkesh	Lecturer	M.E.
4.	Shri N.K. Singh	Lecturer	MBA,MCA
5.	Ms. Tanushree Bose	Associate Lecturer	M.Sc.
6.	Shri N.K. Mukherjee	Associate Lecturer	B.E.
7.	Dr. B.N. Sanyal	Associate Lecturer	Ph.D.
8.	Ms. Sumana Kumari	Associate Lecturer	M.Sc.
9.	* Shri S. Sharan Kumar	Associate Lecturer	M.Tech.
10.	* Shri Rajan Kumar	Associate Lecturer	B.E.
11.	Shri P.C. Behari	Scientific Officer	Diploma in Engg.
12.	Shri M.K. Nandi	Scientific Officer	B.E.
13.	Shri. P.N. Munda	Supervisor	B.Sc. (Engg.)
14.	Shri D.K. Jain	Suptt. Electronics Lab.	B.Sc. (Engg.)
15.	Shri R.K. Prasad	Asstt. W/S Suptt.	B.E.
16.	Shri. G.M. Ansari	Asstt. System Analyst	MCA
17.	Shri T.K. Parashar	Sr. Tech. Assistant	M.Sc.
18.	Shri. S.K. Maulik	Technician	Diploma in Engg.

**Extension Centre Allahabad**

Sl. No.	Name	Designation	Qualification
1.	Dr. L. Sahoo	Professor & Head	Ph.D.
2.	Mr. S. Kanungo	Lecturer	M.Tech.
3.	Mr. R.S. Pandey	Lecturer	M.Sc.
4.	Mrs. Anita Kushwaha	Lecturer	MCA

\* Appointment during the year 2003-2004

5.	Mr. Raman Kumar Singh	Lecturer	MCA
6.	Mr. R.K. Srivastava	Lecturer	B.E. MMS
7.	Mr. Rohit Kumar Pandey	Associate Lecturer	MA, MBA, PGDPM
8.	Mr. B.K. Singh	Senior Lecturer	M.E.
9.	Mr. Anil Kumar Singh	Lecturer	M.E.
10.	Mr. Dhaneshwar Mahto	Associate Lecturer	M.E.

### **Extension Centre Chennai**

#### **BIT Faculty**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Prof. Awadh Prasad	Professor	B.Sc. (Mech.), M.S.I.E. (USA)
2.	Prof. K.R. Viswanathan	Professor	M.A., Dip. In Eco. Adm.

#### **AMET Faculty**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Capt. K.Vivekanand	Director	Master (F.G.)
2.	Mr. K.Seyadu	Training Coordinator	M.Sc.
3.	Mr. K.Venkataraman	Professor	(Steam & Motor) Chartered Engineer
4.	Capt. Yeshwanth Raj	Professor & Head	Master (F.G.)
5.	Mr. M. Rajasekaran	Professor & Head	B.E.
6.	Cmde. D. Krishnamurthy	Professor & Head	MA,ND,PSC, MBA
7.	Capt. Jacob Abraham	Professor	Master (F.G.)
8.	Capt. V.V.Nair	Professor	Master (F.G.)
9.	Mr. A. Venugopal	Assistant Professor	
10.	Mr. T. Mohan	Assistant Professor	B.E.
11.	Mr. G. Mohan Dass	Assistant Professor	
12.	Capt. R.Krishnamurthy Kumar	Assistant Professor	
13.	Mr. J.P. Thiagarajan	Professor & Head	MBA, BL, CAIIB
14.	Cdr. A. S. Perumal	Assistant Professor	B.E.
15.	Mr. D.P. Santhanam		
16.	Mr. A.K.K. Raju	Radio Officer	
17.	Mr. Chellappan Emrose	Radio Officer	
18.	Mr. R.N. Raju	Radio Officer	

\* Appointment during the year 2003-2004

19.	Mr. P. Manickam	Lecturer	
20.	Mr. C. Mohanrangan	Lecturer	
21.	Mr. A.P. Narayanan	Lecturer	
22.	Mr. G.Selvaraj	Lecturer	
23.	Prof. K. Swami	Professor	M.Sc., M.Phil., PGDCA
24.	Prof. G. Selvarkumar	Professor	M.Sc., M.Phil
25.	Prof. D. Balasubramanian	Professor	Ph.D.
26.	Dr. V.Balasubramanian	Professor	
27.	Prof. G.Kanagasapapathy	Professor	M.Sc., M. Phil.
28.	Prof. V. Thirugnanasambandam	Professor	M.Sc., M.Phil.
29.	Dr. T.R. Sivaramakrishnan	Professor	Ph.D.
30.	Mr. A.D. Ravishankar	Professor	M.Sc.
31.	Mr. J. Gopinath	Lecturer	M.E.
32.	Mr. D. Arivazhagan	Lecturer	B.E. MBA
33.	Ms. Sree naaga Kumari	Lecturer	M.A.
34.	Mr. G. Balaganesan	Lecturer	M.E.
35.	Mr. M.S.Lingam	Lecturer	
36.	Ms. Marion Patricia Gomes	Lecturer	M.A.
37.	Mr. S. Muthukumaran	Lecturer	M.Sc., M.Phil.
38.	Mr. L.Karthikeyan	Lecturer	MBA, M.Phil., PGDFTM.
39.	Mr. R.Sundar	Lecturer	M.E.
40.	Mr. A. Veeramani	Lecturer	M.E.
41.	Mr. J. Rengamani	Lecturer	M.Sc., MBA
42.	Mr. D. Srinivasan	Lecturer	M.E.
43.	L.T. M. Sivaraj		

#### **Extension Centre Jaipur**

Sl. No.	Name	Designation	Qualification
1.	Shri. O.P. Rishi	Scientific Officer Coordinator	M.Tech.
2.	Shri. B. Pathak	Lecturer	PGDCA, MCA
3.	Shri. Ashutosh Gupta	Lecturer	M.Tech.
4.	Shri. Vivek Gaur	Lecturer	M.Tech.
5.	Mrs. Smita Agrawal	Lecturer	B.E.
6.	Ms. Ritu Goyal	Lecturer	M.Sc.

\* Appointment during the year 2003-2004

7.	Ms. Archana Bhatnagar	Lecturer	MCA
8.	Shri. Harvinder Singh	Lecturer	MBA
9.	Shri .Ashok Sharma	Associate Lecturer	M.A., PGDBM
10.	Shri. S.K. Sharma	Programmer	B.Sc., CICP
11.	Ms. Shweta Mahlawat	Tech. Assistant	M.Sc.

#### **Extension Centre Kolkata**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Mr. R.T. Goswami	Lecturer	MCA
2.	Mrs. Joysree Das	Lecturer	M.Tech.
3.	Mrs. Jayasri Ray	Associate Lecturer	MCA

#### **Extension Centre Lalpur**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Mr. S. Choudhary	Reader	M.E.
2.	Mr. Utpal Baul	Reader	B.Sc., MBA
3.	Mr. A.K. Choudhary	Reader	M.Tech.
4.	Mr. Amar Kumar	Reader	B.E.
5.	Mr. Kumar Rajnish	Reader	B.Sc., MCA
6.	Dr. (Mrs.)Vandana Bhattacharjee	Reader	Ph.D.
7.	Mrs. Amrita Priyam	Lecturer	M.Tech.
8.	Mr. O.Tirkey	Lecturer	M.Tech.
9.	Mr. G.S. Vijaya	Lecturer	B.E., PGDMM, MBA
10.	Mr. T.K. Banerjee	Lecturer	M.Sc., MBA
11.	Mr. N.P. Tiwari	Associate Lecturer	MCA
12.	Mrs. Anupama Sahai	Associate Lecturer	B.Sc., MBA, MIS
13.	Mr. Arun Singh	Associate Lecturer	M.Tech.
14.	Mr. Somnath Mukherjee	Associate Lecturer	M.Sc., MBA
15.	Mrs.Rupa Mahanti	Associate Lecturer	B.Sc., M.Sc.
16.	Mr. Sanjay Kumar	Associate Lecturer	MCA
17.	Dr. A.K. Jha	Asst. Adm. Officer	Ph.D.
18.	Mr. Anand Prasad Sinha	Res. Associate	B.Sc., B.Ed., MBA

\* Appointment during the year 2003-2004



19.	Mr. P.S. Bishnu	Teaching Asst.	M.Tech.
20.	Mr. J. Bhagat	R.A. Cum Tutor	M.Com.
21.	Dr. (Mrs.) Jyoti Khare	Dy. Coordinator	Ph.D.
22.	Mr. S.N. Sahdeo	Teaching Asst.	MBA
23.	Mr. Sushil Kumar	Teaching Asst.	

#### **Extension Centre Noida**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Mr. B.P. Joshi	Professor & Director	B.E., M.E. PGDBM
2.	Mrs. Asha Prasad	Reader	
3.	Mrs. S. Mallika	Senior Lecturer	M.E.
4.	Dr. Kanhiya Singh	Senior Lecturer	Ph.D.
5.	Dr. Tarun Pandiya	Senior Lecturer	Ph.D.
6.	Mr. Sanjay Kumar	Lecturer	M.Tech.
7.	Mr. S.P. Singh	Lecturer	M.Tech.
8.	Mrs. Mrinalioni Mehta	Lecturer	B.Tech.
9.	Mr. C.S. Suryanarayan	Lecturer	MCA
10.	Mrs. Superna Dutta	Lecturer	M.A.
11.	Mrs. Monica Aggarwal	Lecturer	B.Com., PGDBM, NET
12.	Mrs. Vibha Kaw	Lecturer	MCAM, PGDCA
13.	Mrs. Soma Sirkar	Lecturer	M.Sc.
14.	Mrs. Sanjala M. Nautiyal	Lecturer	MCA
15.	Mr. Sachin Sexena	Lecturer	MCA
16.	Mr. Pranab Kumar	Lecturer	MA, LLB
17.	Mr. A.R. Srivastava	Lecturer	B.E., PGDBM
18.	Mr. B.K. Joshi	Associate Lecturer	MCA
19.	Mrs. Illa Sahai	Associate Lecturer	M.Sc.
20.	Mrs. Vijaya Laxmi	Associate Lecturer	M.Sc.
21.	Mr. Puneet Mittal	Associate Lecturer	MBA
22.	Ms. Priyanka Trivedi	Associate Lecturer	B.E.
23.	Mr. Rupesh Pande	Associate Lecturer	MCA

\* Appointment during the year 2003-2004

24.	Mr. Neeraj Pathak	Associate Lecturer	M.Sc.
25.	Mrs. Sundus Ahmed	Jr. Programme	B.E.
26.	Mr. Rayees Ahmed	Jr. Sys. Analyst	MCA, PGDCA
27.	Mr. Vijendra Bhagat	Lab. Assistant	M.Sc., PGDCA
28.	Ms. Sheetal Dhir	Lab Asst.(Trainee)	B.Sc.

#### **Extension Centre Bahrain**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Prof. T.R. Ranganath	Profesor & Director	M.E.
2.	Prof. Surya Lal Mishra	Professor	B.Tech., MBA
3.	Dr. Mohammed Khalid	Professor	Ph.D.
4.	Dr. N. Srinivas	Reader	Ph.D.
5.	Mr. Prateek Sharma	Reader	B.Sc., MCA
6.	Mr. Niloy Bhattacharya	Reader	B.Com., MCA
7.	Mr. Pradeep Chhawchhariya	Reader	M.E., M.Phil.
8.	Mr. Aparajit Nandi	Univ.Edu.Teacher	B.Com., M.Com., MDBA
9.	Mr. A. Rajendran	Univ.Edu.Teacher	B.Sc.
10.	Mr. A.M. Susai	Univ.Edu.Teacher	B.Ed., M.Sc.
11.	Mrs. Kaveri Mukherjee	Univ.Edu.Teacher	B.E.
12.	Mrs. Sandhya V.S.	Univ.Edu.Teacher	M.Tech.

#### **Extension Centre Muscat**

<b>Sl. No.</b>	<b>Name</b>	<b>Designation</b>	<b>Qualification</b>
1.	Dr. Praveen Dhayni	Professor & Director	Ph.D.
2.	Dr. S.K. Sharma	Reader	Ph.D.
3.	Dr. Munish	Reader	Ph.D.
4.	Dr. Peeyush Tiwari	Lecturer	Ph.D.
5.	Mr. Satish Chander	Lecturer	
6.	Mr. Harshit Kumar	Lecturer	
7.	Mr. Piyush gupta	Lecturer	
8.	Ms. Vijay P.	Lecturer	
9.	Dr. G. Raju	Sr. Lecturer	Ph.D.
10.	Ms. Sanchita Ghosh	Lecturer	
11.	Mr. Sanjay Kumar	Lectuer	

\* Appointment during the year 2003-2004

12.	Dr. Neeta Baporikar	Reader	Ph.D.
13.	Mr. Iftekhar Ahmed	Lecturer	
14.	Mr. Jyoti Kumar Chandel	Lecturer	
15.	Mr. Avnish Vijay	Lecturer	
16.	Dr. Sadaf Zehra	Associate Lecturer	Ph.D.
17.	Mr. Mohd. Mohatram	Lecturer	
18.	Mr. Akhilesh Kumar Roy	Lecturer	
19.	Ms. Jenila J.	Associate Lecturer	
20.	Ms. Anusuya Patil	Lecturer	
21.	Mr. Sivakumar	Lecturer	
22.	Ms. Maruthi Kumari	Lecturer	
23.	Mr. T.D. Manohar	Lecturer	
24.	Mr. El Amin ElNur	Lecturer	
25.	Mr. Kenneth Mc Gowan	Lecturer	
26.	Ms. Indrani Basu	Associate Lecturer	
27.	Ms. Mona Saha	Associate Lecturer	
28.	Ms. Linus Norhona	Associate Lecturer	
29.	Ms. Helen Daniel	Associate Lecturer	

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\* Appointment during the year 2003-2004



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**ACTIVITIES OF  
ACADEMICS DEPARTMENTS**

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## DEPARTMENT OF ARCHITECTURE

The Department was established in the year 1993 and offers a 5-year degree course in Architecture. The sixth batch of students (1998 batch) graduated this year and the students have found gainful employment besides those who have opted for higher studies in India and USA. 20 students of 1999 batch are expected to graduate in May 2004.

The department in the current year has established a seminar room fully equipped with various audio-visual equipments like LCD projector, Overhead projector and slide projector. The Department has also established a Building Center with financial support from HUDCO. The center will promote use of Cost Effective & Environment Friendly Technologies for Building construction through various training programmes.

The department hosted the Annual NASA (National Association of Students of Architecture) design competition for Jharkhand Assembly Building & Capital complex. The students of the department participated in the national and zonal conventions of NASA and won many prizes including being declared the overall champion at the eastern zone and the 'best participating college' at the national meet.

Faculty member, Dr. A. Khare received Ph.D. from De Montfort University Leicester, UK

**Degree/Diploma offered :** B. Arch. (5 year degree course in Architecture).

**Faculty Position :** In-Charge Dr. D. Sasmal, Reader -4, Lecturer-4, CADD Programmer/  
Associate Lecturer 1

**Number of Student registered with Department :** B. Arch. - 86

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

**A. Ongoing Project : -**

Project Title	Funding Agency	Sanctioned Amount	Date of Sanction	Duration of project
Prototype architectural designs of schools for Autistic pupil.	AICTE	1.50 lakhs	10.3.03	2 years

**B. Project completed during the year 2003-2004 :**

Project Title	Funding Agency	Sanctioned Amount	Date of Sanction	Duration of project
The Millennium package for Architectural Education – A Thorough Recast of the Undergraduate Scope.	AICTE	3 lakhs & Salary for 3 years	October 2003.	3 years

**C. Seminar/Conference/Short term course conducted by the Department :**

A one week Short-term course on Heritage Management: Emerging Trends and Need of Indigenous Approaches sponsored by Council of Architecture (New Delhi) under QIP of AICTE (N. Delhi) was arranged between 15-19 March, 2004. Dr. A. Khare was the Coordinator and Mr. N.R. Mandal was the Co-coordinator for the course.

A total of 33 delegates attended the course. Sri. N. N. Pandey, Secretary Sports, Youth Affairs and Culture Department, Government of Jharkhand was the Chief guest at the opening ceremony. Mr. Onkar Chouhan, Superintending archeologist ASI Ranchi Circle, Dr. P.K. Mishra, Dy. Supdt Archeologist, State archeology Department and Prof. M. Chattopadhyaya, Ex-Head Architecture Dept. Jadavpur University were some of the dignitaries who acted as resource persons.

A photo-exhibition on archeological treasures of Jharkhand was organized as part of the course.

#### **D. Publication by faculty :**

##### **I. International Journals**

1. Dr Ajay Khare 'Temples of the Pala period on the Chhotanagpur Plateau and its Eastern Fringes'. Journal of Bengal Art, Vol. 7 2002, pp 65-75 Ed. By Enamul Haque, Pub. By ICSBS. Dhaka.
2. Dr Ajay Khare, 'Conservation Issues Related with Brick & Terracotta structures of Bengal' Journal of Bengal Art, Vol 6, 2001, pp. 193-200. Ed. by Enamul Haque, Published by ICSBA, Dhaka.

##### **II. National Journals**

1. Dr. Ajay Khare, 'Conservation: Brick and Terracotta structures' in Architecture + Design May-June, 2003. pp 70-73.
2. Prof. Manjari Chakraborty, "Teaching of Architecture: The New Professional Task"; Journal of Indian Institute of Architects (JIIA), Vol. 68, Issue-03, April-June 2003.
3. Prof. Manjari Chakraborty, "Realigning Education for Sustainable Construction"; seminar proceedings of "19<sup>th</sup> National Convention of Architectural Engineers"; Department of Architecture and Planning, Maulana Azad National Institute of Technology, Bhopal, October 2003.
4. Mrs. Rachna Khare, "Autistic Vyakti se samvaad sambandhi Dishanirdesh" Deepshikha Newsletter', July 2003, Vol. XI, pg. 17-18.
5. Mrs. Rachna Khare, "Intervention strategies for the management of ASD", Conference Proceedings Workshop on 'Autism Awareness' organized by State Nodal Agency Center (SANC) of National Trust', Ranchi, 14<sup>th</sup> Feb. 2004.

#### **E. Conference/Seminar attended :**

1. Dr. Ajay Khare, Attended 'National Seminar on Art & Architecture of Eastern India'. Held at Calcutta University on 25<sup>th</sup> March 2004. Acted as invited speaker + presented a paper 'Valabhi temples and their use in Bengal Architecture'.
2. Dr. Ajay Khare, Attended two Short-term courses held at Bhubaneswar and Hyderabad as a Resource person.
3. Mrs. Manjari Chakraborty, "National Workshop on curriculum Development" – organized by Department of Architecture, Jadavpur University, Kolkata, India in September 2003.
4. Mr. N.R. Mandal, International Workshop on Urban Renewal; New Delhi : February 17-19, 2004.
5. Mrs. Rachna Khare, STC (QIP) on 'Conservation of Historic buildings', R.V. College, Bangalore, 2-7, April –2004.

6. Mrs. Rachna Khare, 'Verbal Behaviour from theory to practice', workshop organized by AFA, New Delhi, 27-29, Feb. 2004.
7. Mrs. Rachna Khare, Short –term course on 'Heritage Management: Emerging Trends and Need of Indigenous Approaches'; 15-19, March 2004.
8. Mrs. Ritu Kumari, Short-term course on "Passive Solar Design & Planning of Buildings and Cities"; Energy Centre, MANIT Bhopal, 5-10 January, 2004.
9. Mrs. Ritu Kumari, Short-term course on 'Heritage Management: Emerging Trends and Need for Indigenous Approaches' 15-19 March, 2004.
10. Mr. S.P. Bhattacharya, Short-term course on 'Earth Quake in Built Environment'; IIT, Roorkee' 15-19 December, 2003.
11. Mr. S.P. Bhattacharya, Short-term course on 'Heritage Management: Emerging Trends and Need of Indigenous Approaches'; 15-19 March, 2004.
12. Mrs. Jayeeta Dey, National Seminar on : Architecture & Planning Education & Profession. The Changing Dimensions and Future Directions of 21<sup>st</sup> Century. Shibpur B.E. College Kolkata.
13. Mrs. Jayeeta Dey, Short-term Course on Heritage Management, B.I.T. Mesra from 15-19 March, 2004.

#### **F. Consultancy Projects :**

##### **External Consultancy Work**

- Interior design for Birsa Munda Air port Ranchi
- Campus development plan and design scheme of lecture theatre complex for BHU.
- Hockey academy at Ranchi for department of sports, Government of Jharkhand
- Vocational training center for Deepshikha, Ranchi

##### **In House Consultancy Work**

- Extension of students hostel
- Building for Biotechnology building
- Building for Kislaya School
- Indoor Badminton Stadium

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## DEPARTMENT OF APPLIED CHEMISTRY

This is a support dept. involved in teaching applied chemistry courses at undergraduate and postgraduate level. The dept. has made significant contribution towards course formulation and development of M.Tech. programme in Environmental Science and Engineering. The major thrust areas of research activities in the dept. are related to water quality assessment, waste water treatment, solid waste management, bioremediation. Dye based polymers, oscillation reactions, biodiesel, computational sciences, solid state chemistry, non conventional energy sources and nanochemistry. The Dept. has a well equipped water technology and fuel technology lab and is in the process of introducing computational techniques in the environmental and fuel lab for modeling and simulation purposes. It is proposed to develop the infrastructure required for materials chemistry at post graduate and research level especially in the areas of Biomaterials. Two faculty Dr. B.J. Allapat and Dr. N.K. Nema from the Environmental Div. Of IIT Delhi were invited to deliver a series of lectures on environment related topics for the benefit of the students of M.Tech. Environmental Science and Engineering between 8-11 March 2004.

The Dept. also interacted with the UB, Environment and Society Institute at State University of New York at Buffalo, USA and proposed to work in collaboration with the institute for strengthening and promoting interdisciplinary environmental research, teaching and service activities within the university and to utilize that expertise in assisting communities to resolve their environmental problems. Currently the dept. is working on a join.

**Degree/Diploma offered :** Ph.D., Support Department involved in teaching applied chemistry courses at Undergraduate & Postgraduate level.

**Faculty Position :** Reader-3, Leacturer- 4, Associate Lecturer-1

**Number of student enrolled with Department :** Ph.D.-3

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

### A. Ongoing Projects :

1. Dr. R.K. Dey – 2004, UGC project number, F12-32/2004 (SR), "Extension of metal ion using chemically modified silica gel, Budget: 0.8 lakhs
2. Dr. I Sinha-2003, Principal Investigator of a SERC-DST Young Scientist Fast Track project of "Simulation of micro structural evolution of glass-ceramics from the perspective of percolation theory" Project started on 4<sup>th</sup> July 2003, Budget : Rs. 4.26 lakhs.
3. Dr. P.K. Srivastava, : i) Co-Investigator in a UGC major research project entitled "Testing & Validity of Faradey law and ohm law of ECM of newly Engineering Materials" is under progress since November 12, 2003 total Cost 5.06 lakhs. ii) PI in a UGC sponsored project entitled- "Evolution of sequential oscillations in a single organic substrate in chemical system" Budget 2.08 lakhs.
4. Dr. D. Tiwary: Principal Investigator of a UGC project on "Removal of Toxic Metal ions from Aqueous Wastes by Inorganic Particulates" project started on 19<sup>th</sup> February 2003 Budget Rs. 2.08 lakhs.
5. Dr. Usha Jha: Consultant (Environmental Pollution Monitoring) in research project entitled "Impact of Environmental Tobacco Smoke Its Effect on Respiratory Health in Adult" Project in charge is Prof. Brydon J.B. Grant, Chief pulmonary & critical care medicine, State University of New York at Buffalo, U.S.A., 2003.

## **B. Project Completed**

1. Dr. Bimal Verma's Project entitled Synthesis of some dye based polymer: UGC, 2.08 lakhs.

## **C. On going Ph.D. Programmes**

### **Supervisor/Research Scholar/Topic**

1. Dr. Usha Jha/Mrs. Vineeta Arora/"Investigating the relationship between raw coal, coal characteristics and effluent quality in a given beneficiation process and developing a cause effect paradigm".
2. Dr. P.K. Srivastava, Mr. N. Yadav "Evolution of sequential oscillations in a single organic substrate in chemical system".
3. Dr. Bimal Verma, Miss Lakshmikanta "Synthesis and characterization of some dye based polymers".

## **List of publication/Proceedings 2003-2004**

1. Dr. Usha Jha et all- "Coal beneficiation processes and its impact on environment" proceeds of Annual environmental colloquium held at Environment and Society Institute, State University of New York at Buffalo, U.S.A., April 2003.
2. Dr. Usha Jha : "Environmental Science and its inclusion in the curriculum of technical education" Proceeds of National seminar of curriculum development in technical education, 3-4 April, 2004.
3. Dr. P.K. Srivastava et all, "Color bands polymer in methacrylic acid polymerization" J. Indian Chem. Society, 80, 559-561, 2003.
4. Dr. P.K. Srivastava et all: synthesis and characterization of polygly –Triacrylate, Material Science Rescavt Indiaj Volume 1. NOI, 65-68, 2003.
5. Dr. P.K. Srivastava et all: Trees & Bushes like pattern in B-Z system proceedings 40<sup>th</sup> Annual convention of Chemists Indian Chemical Society Jhansi Dec. 23-27, 2003.
6. Dr. R.K. Dey "Synthesis and Characterization – o-hydroxyacetophenone" J. of Applied Science, 88,570-581 2003.
7. Dr. R.K. Dey, "Studies of metal ion uptake behaviour of formaldehyde condensed 4, 4'-diaminodiphenylmethane and o-hydroxybenzaldehyde" – Indian Journal of Chemical Technology, 00, 000-000, 2004.
8. Dr. I Sinha "Simulating the effect of glass micro structures on crytallization and percolation behaviour of glass ceramics" J. of non crystalline solids, 324, (1-2) 36-49, 2003.
9. Dr. I Sinha- Secondary processing under different heat treatment schedules of 2124 Al alloy –SiCp composites and their mechanical properties, at proceedings NMD-ATM 2003, Kolkata from Nov. 14-16, 2003.
10. Mr. Gyan Agrawal "Characterization of vinyl polymer silica colloidal nanocomposites using solid state NMR spectroscopy," J.Phy. Chem. B, 107, 2003.

**D. Seminar/Conference/Workshop/Orientation programmes attended :**

1. Dr. Usha Jha attended a training program on solid waste management organized by the Indo French Unit for Water and Waste Technology at IIT Delhi between 8-10 March, 2004.
2. Dr. Usha Jha participated in a national level seminar at BIT, Mesra on "Curriculum development in Technical Institutions" 3-4 April 2004.
3. Dr. Usha Jha attended a seminar on Water Resources Management and Conservation "Water 2003" organized jointly by the Confederation of Indian Industries and Dept. of Water Resources. Govt. of Jharkhand, 8<sup>th</sup> Dec. 2003.
4. Dr. P.K. Srivastava attended the Annual Convention of Chemists, Indian Chemical Society in Jhansi, June 2003.
5. Dr. P.K. Srivastava attended the International Conference on Advanced Manufacturing Technology VJIT, Mumbai, Jan. 2003.
6. Dr. R.K. Dey attended a UGC sponsored refresher course at Jadavpur University in January 2004.
7. Dr. R. K. Dey attended a conference on Modern Trends in Chemistry at Jadavpur Univ. Kolkata, Jan. 2<sup>nd</sup> 2004.
8. Dr. I. Sinha attended a national level seminar at NMD-ATM 2003 Kolkata 14-16 Nov. 2003.

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## DEPARTMENT OF APPLIED MATHEMATICS

Department of Applied Mathematics is one of the oldest department of the Institute. The Department has been teaching all mathematics courses offered in different branches of Engineering, Management, Pharmaceutical Sciences, Architecture and University Polytechnic. The Department has launched its own AICTE approved PG course entitled "M.Tech in Scientific Computing" from the session 2002. The faculty members of the Department are aggressively engaged in research and development activities. The areas where research is in progress include fluid mechanics, solid mechanics, parallel computing, mathematical modelling, fuzzy optimization, scismology, differential equation, vibration and finite element application in engineering application.

The Department has started an ambitious programme on R & D activities in atmospheric and oceanic sciences.

The Department organises seminar/symposium almost every year.

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

**Faculty Positions :** Professor –1, Reader – 4, Lecturer –5, Associate Lecturer –2, R.A. Cum Tutor –1.

**Number of Students enrolled/registered in M.Tech. Programme :** 7

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

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

1. Dr. S.K. Chakraborty (PI), Dr. S.K. Samal (Co-I), 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), Prof. N.C. Mahanti (Co-I), Fuzzy approach to traffic and transportation management systems, UGC, 1.3.2002 Rs. 2, 97, 560, 3 years.

### **C. Project completed during the year 2003-2004.**

1. Prof. N.C. Mahanti (PI), Prof. A.K. Chatterjee (Co-I) Coastal Dispersion Model, UGC, 30.3.2001, Rs. 1, 75, 560, 3 years.
2. Dr. S.K. Jain (PI), Transient analysis of laminated composite plates by FEM, AICTE, 2001, 3 years.
3. Dr. S.K. Jain (PI), Vibration of non-uniform sandwich plates, UGC, 2001, 3 years.

### **D. Publication by faculty :**

#### **I. International Journal**

1. A. Pradhan, S.K. Samal, N.C. Mahanti, Influence of anisotropy on the Love waves in a self-reinforced medium, Tamkang Journal of Science and Engg., Vol. 6, no. 3, pp. 173-176, 2003.
2. P.K. Mishra and C.K. Sharma, Throughout analysis of pipelined multiprocessor modules, Pure and Applied Mathematics in International Journal, vol. 57, pp. 234-240, 2003.
3. P.K. Mishra, complexity of VLSI using optimal discrete Fourier Transform, Oxford Journal of Mathematical Sciences (to appear).
4. P.K. Mishra, An efficient parallel algorithm for shortest path in planer layered Digraphs, Journal of Zhu. Univ., China (to appear).



5. P.K. Mishra, Optimal parallel algorithm for shortest path problems in interval graphs, Journal of Zhu, Univ. China (to appear).
6. R.P. Singh and S.K. Jain, Free asymmetric transverse vibration of parabolically varying thickness polar orthotropic annular plate with flexible edge conditions, Tamkang Journal of Science and Engineering (accepted for publication).

## **II. National Journals**

1. S. Padhi, On oscillatory linear third order forced differential equation, Differential equations and Dynamical systems (to appear).
2. A. Pradhan, S.K. Samal and N.C. Mahanti, Surface waves in a liquid filled porous solid layer bounded by elastic half space and liquid layer, Bulletin Calcutta Mathematical society (to appear).
3. P.K. Mishra and C.K. Sharma, Area time tradeoffs for Parallel merging, Journal of National Academy of Sciences (India). Vol. 73(A), V, pp. 513-424, 2003.
4. R.P. Singh and S.K. Jain, Asymmetric vibration of non-uniform polar orthotropic annular plate with edges elastically restrained a particular case study, Journal of Institute of Engineers, vol. 84, November 2003.
5. R.P. Singh and S.K. Jain, Asymmetric vibration of non-uniform polar orthotropic annular plate with edges elastically restrained –a special case study, Journal of the Institution Engineers, Vol. 84, January, 2004.
6. R.P. Singh and S.K. Jain, Study of free asymmetric transverse vibrations of linearly varying thickness polar orthotropic annular plate with flexible edge conditions, Journal of structured Engineering (accepted for publication).

## **Proceedings**

1. M. Trivedi and D. Shukla, Mean estimation under post-stratified cluster sample, Advances in mathematical, statistical and computational methods in science and technology, Editor, S. Dey, Pragati Prakashan, 2003.

## **Book :**

Predicting meteorological events: Mathematical approach Editor, N.C. Mahanti, Narosa Publishing House, New Delhi (to appear).

## **E. Seminar/Symposium/Short-term courses attended by faculty members.**

1. S. Padhi, 31<sup>st</sup> Annual conference of Orissa Mathematical Society, Institute of Mathematics and Applications, Bhubaneswar, Feb. 7-8, 2004.
2. M. Trivedi, International conference on Recent statistical techniques in life-testing, reliability, sampling theory and quality control, BHU, Varanasi, Dec. 29-31, 2003.
3. S.K. Samal, National seminar on Advances in Theoretical and applied seismology, ISM, Dhanbad, Oct. 29-30, 2003.
4. P.K. Mishra, 73<sup>rd</sup> Annual conference of NASI, India, Oct. 10-12, 2003.

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## DEPARTMENT OF APPLIED MECHANICS

The Department of Applied Mechanics was initiated in 1995. The objective for the creation of this department was to function it as a service department to all engineering students for teaching common subjects like Engineering Mechanics, Engineering Graphics etc. In its existence it started out with five faculty members and now it has seven full time and one part-time faculty.

The opportunity and the challenge to improve products and productivity is a perennial desire for the industry to survive and to prosper in an environment, which is becoming extremely competitive, cost effective and automated. In order to train and supply adequate manpower in the field of CAD/CAM the Department has introduced a Four Semester Master of Engineering Programme on Computer Aided Analysis and Design [M.E. (CAAD)]. Basic objectives of this Programme are to provide :

- In-depth understanding of Analysis and Computational Model of engineering Design problems.
- Impart Knowledge to the students as how to develop Software packages for Engineering Analysis & Design.
- Reduce training liabilities of the industries for their entry-level engineers particularly for the industry involved in Design & Development and for the industry developing engineering Software packages.
- Impart knowledge and identification of appropriate technology.
- Supply manpower for R&D activities in the field of Engineering Mechanics, Materials, Dynamics & Controls and Design & Development.

The department is aiming at the active interaction between Institute and Industry related to the postgraduate course 'Computer Aided Analysis and Design'. In this regard the attempt is being made to make the course perfectly suitable for the industry involved in Design & Development and for the IT industry developing engineering software packages. For effective design of the course, the interactions with eminent academicians of some leading institutions and prominent technologists of leading industries are planned. The interactions with I.I.T., Delhi, I.I.T., Kharagpur, Jadavpur University and B.E. College Shivpur had been made with an effective course structure as an output. The same is planned with the industry for the design of industry-suited course structure.

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

The department also offers subjects like engineering mechanics to all undergraduate engineering students.

**Faculty Position :** Professor – 3, Lecturer – 4

**Number of student enrolled with Department :** M.E. (CAAD) – 3

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

**A. Seminar/Conference/Short term course conducted by the Department Number of delegates,**

**Name of dignitaries.**

1. Department organized a four-day international conference of ISTAM in December 2003. Nearly 120 delegates from India and abroad attended this conference. 138 research papers were presented by the delegates.

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

### **I. International conference**

1. Abhay Kumar, "Optimal Discrete Fourier Transform in Computing", ITPC 2003, Kathmandu, Nepal.

### **II. National Conference**

1. Abhay Kumar, "Value Engineering & its application to Educational Institution: A case study of time analysis." National Conference On Value Engineering B.I.T., Mesra, Ranchi, July 2003.
2. Abhay Kumar, "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, July 2003.
3. Alok Kumar, "Computer aided Analysis of the Dome of Blast Furnace", 20<sup>th</sup> AIMTDR Conference B.I.T., Mesra, Ranchi.
4. Rajesh Ranjan, "P/M Products: The winning Challenge", National Conference On Value Engineering B.I.T. Mesra, Ranchi, July 2003.
5. Rajesh Ranjan, "Study of Market Logistic: Special Reference to Usha Martin Ltd.", National Conference On Value Engineering B.I.T., Mesra, Ranchi, July 2003.
6. 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, July 2003.
7. Rajiv Ranjan, "Value Engineering & its application to Industry: A case study of ceiling fan." National Conference On Value Engineering B.I.T., Mesra, Ranchi, July 2003.
8. Rajiv Ranjan, "PM (Powder Metallurgy) forging finds a better space among conventional Manufacturing technique: A value facturing approach." National Conference On Value Engineering B.I.T. Mesra, Ranchi, July 2003.
9. Rajiv Ranjan, "Productivity improvement of a compressor Assembly plant layout: Value additions by Assembly line Balancing." National Conference On Value Engineering B.I.T., Mesra, Ranchi, July 2003.
10. Rajiv Ranjan, "A case study of VE in Bicycle design", National Conference On Value Engineering B.I.T. Mesra, Ranchi, July 2003.

### **C. Other activities.**

Consultancy Assignments :

- Sri Ram Ballbearing, Ratu, Ranchi.

Institute-Institute Interaction :

- University of South Florida, Tampa, Florida 33620, USA for student exchange programme.

Institute-Industry Interaction :

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

1. Prof. A.K. Ray has been elected as Vice-President of ISTAM and nominated in the national executive committee of ISTAM.

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## DEPARTMENT OF APPLIED PHYSICS

The Department has several modern laboratories and computational facilities with several softwares 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 processes computerized anodic vacuum arc deposition unit with data acquisition system (Keithley Instruments, USA). Laboratories are equipped with plasma arc generator (Hypertherm, USA), monochromator (Join 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.

The Department has recently set up basic facilities (Hand lay up technique and vacuum bag technique) for fabrication of fiber composite plates for R&D and laboratory course of M.Tech. (New Material & processing technologies).

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  $T_c$  Superconductor, Photonics, Optoelectronics, Optical Communication, Nondestructive testing of materials using real time holography and composite materials. At present there are two UGC, two DST, one AICTE, one BRNS, one ISRO and one KVIC (Govt. of India) projects running in the department. Four Junior Research Fellows and Two Project Fellows and one Senior Research Fellow are working in these projects. Six Scholars are registered for Ph.D.

The Department has been offering M.Tech in New Materials and Processing Technology since February, 2003.

### **Degree/Diploma offered :**

- M.Tech (New Material and Processing Technology).
- Ph.D. (in various branches of pure & applied physics).
- Involved in teaching in all the courses in the area of applied physics in undergraduate & postgraduate programme.

**Faculty Position :** Professor – 4, Reader – 3, Senior Lecturer – 3, Lecturer – 3, Assist. Lecture – 2, Principal Scientific Officer – 1.

### **Number of students enrolled with department :**

- M.Tech. (New Materials and Processing Technology) - 10
- Ph.D. (in various branches of pure & applied physics) – 06

### **Academic innovations, research & development activities :**

- The research activities in the department has resulted in 11 Foreign Journal, 03 Indian Journal, 28 Indian and Foreign conference papers and 03 books published during 2003-2004.

- Department successfully organized The 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) under the Convener-ship of Dr. P.K. Barhai in collaboration with Plasma Science Society of India (PSSI) during Dec. 8-11, 2003.
- Dr. P.K. Barhai visited the Plasma Neno Technology Facilities at Chubu University, Japan during 8-9 April, 2004.
- Dr. P.K. Barhai visited Ngee Ann Polytechnic, Singapore and saw the facilities in the Department of Physics as well as other academic infrastructure.
- Department also organized 2<sup>nd</sup> colloquium on review of research and development projects of the Institute funded by various funding agencies during March 20-21, 2004.
- Dr. V. Chopra, Goodwill, Mumbai delivered a lecture on "Cryogenics System in Research & Industry" in December 2003. Mr. Abhijit Ray, Indian Institute of Technology, Kharagpur, delivered a lecturer on "Super conductivity and Magnetic Sensors" in October 2003.
- Mrs. B. Sarma, Institute of Advance Studies in Science and Technology, Guwahati, delivered a lecturer on "Plasma Sheath" in October 2003.
- Dr. G.G. Sarkar, MECON, Ranchi, delivered a lecturer on "Laser Systems" in August 2003.
- Mr. Amitava Ray, RDCIS SAIL, Ranchi delivered a lecture on "Physical Metallurgy of Steel" in July 2003.
- Dr. S. Ganguli, SINP, Kolkata, delivered a lecture on "Mossbauer effect and its Industrial Applications" in July 2003.
- Mr. S. Bhattacharya, Barkatullah University Bhopal, delivered a lecture on "High  $T_c$  Superconductors" in June, 2003.
- Shri Shambhu Sharan Kumar, Jamshedpur, delivered a lecture on "Formulation And Comparative Study of Industrial Stoving Paints For Automobile Industry And Improvement in The Quality of Anodic Electro Deposition Coating" in June 2003.
- Dr. B.B. Nayak of R.R.L., Bhubneshwar delivered a lecture on "Plasma Processes of New and Advanced Materials" in April 2004.

#### A. Ongoing Project :

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration
Investigation of Dispersion Managed Breathers in Long haul Optical Communication systems and Study the effects of Higher Order Nonlinearities in All Optical Switching.	DST	9/4/02	11.75. Lac	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	8.2.02	5.85 Lac	3 years
Theoretical Investigation of Induced Nonlinear Optical Fiber Wave guides and Devices.	UGC	1.7.03	3.10 Lac	3 years

Fatigue behavior of adhesively bonded fiber composite Aluminum.	AICTE	3.4.03	3.80 Lac	2 years
Investigation of the effect of higher order nonlinearities on optical pulse propagation in semiconductor doped glass fibers and wave guides.	BRNS	9/2/04	8.88 Lac	3 years
Development and characterization of high temperature thin film thermocouples for aero space.	ISRO	24/12/03	10.72 Lac	2 years
Technical interface unit.	KVIC, Govt. of India	2003	42 Lac	4 years
Measurement of optical properties of stratified media using optical coherence.	DST	1/9/03	20 Lac	3 years

**B. Project sanctioned during the year 2003-2004 :**

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration
Theoretical Investigation of Induced Nonlinear Optical Fiber Wave guides and Devices.	UGC	1/7/03	3.10 Lac	3 years
Fatigue behavior of adhesively bonded fiber composite Aluminium joints	AICTE	3/4/03	3.80 Lac	2 years
Investigation of the effects higher order nonlinearities optical pulse propagation in semiconductor doped glass fibers and wave guides.	BRNS	9/2/04	8.88 Lac	3 years
Development and characterization of high temperature thin film thermocouples for aero space applications.	ISRO	24/12/03	10.72 Lac.	2 years
Technical interface unit.	KVIC, Govt. of India	2003	42 Lacs	4 years

**C. Project completed during the year 2003-2004 :**

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration
Testing and analysis of thin sheet materials using real time holography.	AICTE	June 2000	6.00 Lac	3 years

**D. Project submitted during the year 2003-2004 :**

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration
Effect of low temperature on mechanical properties of composites	AR & DB, Ministry of defense, Govt. of India	2003	9.68 Lac	2 years

**E. Publication by the faculty :****I. 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 and S. Medhekar	J. Nonlinear Optical Physics & Materials, Vol. 12, No. 1 (2003) p 101-112
2.	Stable and Quasi stable spatio-temporal solitons in cubic quintic nonlinear media	S. Jana & S. Konar	J. Nonlinear Optical Physics & Materials (in press)
2.	Linear and nonlinear propagation of sinh-Gaussian pulse in dispersive media possessing Kerr nonlinearity.	S. Konar & S. Jana	Optics Communications (in press)
4.	All-optical light deflection and displacement using nonlinear slab wave guide.	M. Mishra & S. Konar	Fiber and integrated optics (in press)
5.	Sheath equivalent electrical model for equilibrium child Sheath description.	C.B. Dwivedi, U. Deka and A. Sarma	Phys. Scripta (in press).
6.	Sheath equivalent circuit model for transient sheath dynamics.	U.Deka, Ramprakash, A. Sarma and C.B. Dwivedi	Jpn. J. Appl. Phys. (accepted).
7.	Electron Internal Delay Effect on acoustic soliton behavior in transonic region.	U. Deka, A. Sarma, Ramprakash, P.K. Karmakar & C.B. Dwivedi	Phys. Scripta (in press).
8.	Thermal Conductivity of $\text{La}_{0.67}\text{Sr}_{1-x}\text{MnO}_3$ ( $x=0, 0.5, 1$ ) and $\text{La}_{0.6}\text{Y}_{0.07}\text{Ca}_{0.33}\text{MnO}_3$ pellets between 10 and 300K	A. Ray and T.K. Dey	Solid State Commu. 126 (2003) pp. 147-152.

9.	Annealing time dependence of electrical receptivity and magneto-resistance of La $0.6Y0.07Ca0.33MnO_3$ pellets prepared by "Pyrophoric" method.	A. Ray and T.K.Dey	Journal of Magnetism and Magnetic Materials 266 (2003) pp. 268-277.
10.	Low field second harmonic response and ac susceptibility of (Bi, Pb)-2223 pellet in a Generalized Critical State Model.	A. Ray, T.K. Dey and S.K. Ghatak	International Journal of Modern Physics B, 21 (2003) pp. 3831-3846.
11.	Static and dynamic screening of the polaritonic fields nitride nanostructures : a theoretical and experimental study.	A Reale, A. Di Carlo, P. Lingli, G. Traetta, M. Comecicalo, A. Bassased, R. Cingolani, Berti, E. Napolitani., M.Natali, S.K. Sinha, A.V. Drigo, A. Vinattieri and M. Collocchi.	Physica B, 314 (2002) 35-38.

## II. National Journals :

Sl. No.	Title of Research Paper	Author (S)	Name, Volume, Page of Journal & year.
1.	Interface defects in GaN/sapphire studied using Rutherford backscattering spectroscopy and channeling.	S.K. Sinha (I) P.K. Barhai	Pramana (accepted)
2.	Scientific temper: an issue above ideologies.	R.K. Popli	Ind. J. of Scientific commun., Vol. 2 No. 1 (2003) 21
3.	Magneto-transport studies in yttrium doped lanthanum manganites between 10-300K.	M. Battabyal, A. Ray and T.K. Dey	Indian J. Pure & Appl. Phys., 41 (2003) pp 443-447.

## III. Conference Papers

Sl. No.	Title of Research Paper	Author (S)	Conference
1.	Metallic Multilayer Coating Using Anodic Vacuum arc Plasma.	P.K. Barhai & M.K. Sinha	International COE (Centre of Excellence) on Plasma Sc. & Tech., Sponsored by Plasma New COE (1 <sup>st</sup> century COE Program) held at Nagoya Univ., Nagoya, Japan.



2.	Material testing and analysis using digital real time holography.	J.T. Andrews, K. Bose and P.K. Barhari	International Conference on Laser Application and optical metrology ICLAOM-03 held at IIT Delhi.
3.	Dielectric study of fly ash.	S.K. Sinha –II, P.K. Barhai	Condensed Matter Days held at Dept. of Physics, Jadavpur University, Kolkata during 27-29 Aug. 2003.
4.	Interface defects in GaN/sapphire studied using Rutherford backscattering spectroscopy and channeling.	S.K. Sinha-II, P.K. Barhai (Oral presentation by S. K. Sinha)	Condensed Matter Days held at Dept. of Physics, Jadavpur University, Kolkata during 27-29 Aug. 2003.
5.	Fly ash coating on mild steel by anodic vacuum plasma arc system.	S.K. Sinha-II, M. K. Sinha, B. Pathak and P.K. Barhai	18 <sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
6.	Diffusion of metal/metal and metal/ceramics interface on energetic ion bombardment studied by RBS and SIMS techniques.	S.K. Sinha –I	18 <sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
7.	Spray dried CO <sup>2+</sup> doped P2T ceramics as a electromechanical transducer.	S.K. Sinha –II, P.K. Barhai	National Seminar on Emerging Trends in Science & Tecjnology, held during 30-31 Jan 2004 at Karunya Nagar, Coimbatore.
8.	Spatio-temporal solitons in parabolic nonlinear media.	S.Jana & S. Konar	Proceedings of National Laser Symposium, Dec. 22-24, 2003 IIT, Kharagpur.
9.	Double humped Gray and black solitons in Kerr nonlinear media.	S. Konar and M. Mishra	National Conference on Nonlinear Systems And Dynamics, Dec. 28-30, 2003 IIT Kharagpur.
10.	Induced focusing of laser beams in paratolune sulfonate.	S. Jana & S. Konar	International Conference on Computers and Devices for Communication, held at Kolkata Jan. 1-3, 2004.

11.	Design of all optical light deflector and spot size controller.	M. Mishra and S. Konar	International Conference on Computers and Devices for Communication, held at Kolkata Ja. 1-3, 2003.
12.	Influence of interpulse Raman scattering on the dynamics of soliton propagation in dispersion managed optical communication systems.	M. Mishra and S. Konar	National Conference on Emerging Areas in Applied Physics at ISM Dhanbad during Feb. 21-23, 2004.
13.	Conversion of a circular Gaussian laser beam into elliptical beam and vice versa using optical nonlinearity.	M. Mishra and S. Konar	National Conference on Emerging Areas in Applied Physics held at ISM Dhanbad during Feb. 21-23, 2004.
14.	All optical switches using Kerr nonlinear slab wave guide.	M. Mishra and S. Konar	National Conference on Emerging Areas in Applied Physics held at ISM Dhanbad during Feb. 21-23, 2004.
15.	Nonlinear cosh-Gaussian laser beams in Kerr media.	S. Konar and S. Jana	National Conference on Emerging Areas in Applied Physics held at ISM Dhanbad during Feb. 21-23, 2004.
16.	Self focusing and self tapering of laser beams in non Kerr optical media.	S. Jana and S. Konar	National Conference on Emerging Areas in Applied Physics held at ISM Dhanbad during Feb. 21-23, 2004.
17.	Study of some properties of Bi-2122 sample.	V. Dayal and S. Keshri	Proceedings of DAESSP, held at Jiwaji Univ. Gwalior, Dec. 26-30, 2003.
18.	Pressure coefficient of out-of phase resistivity.	S. Keshri	Proceedings of DAESSP, held at Jiwaji Univ. Gwalior, Dec. 26-30, 03.
19.	Susceptibility of bulk Bi-2223 superconductor.	V. Dayal, P.K. Nayak and S. Ravi	NCMA-2004 held at Kurukshetra Univ. Haryana, March 11-13, 2004.
20.	AC susceptibility in study in Bi <sub>1.2</sub> PbO <sub>0.33</sub> Ca <sub>2.06</sub> Cu <sub>3</sub> O <sub>4</sub> superconductor.	S. Keshri, S. Ravi, V. Dayal and P.K. Nayak.	National seminar and conference on cryogenics and its frontier applications held at Bengal Engineering College, Howrah (W.B.) during March 25-27, 2004.

21.	Future scope of non-intrusive diagnostics for basic and applied research in plasma sheath experiments.	A. Sarma	18 <sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
22.	Study of dependence of resistivity on grain size of aluminium thin film deposited using Anodic vacuum arc.	M.K. Sinha, R.K. Paul, B. Pathak, A. Sarma and P.K. Barhai.	18 <sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
23.	Observation of properties parameterization of anodic vacuum arc plasma by using electrostatics probe diagnostics.	M.K. Sinha, R.K. Paul, B. Pathak, A. Sarma and P.K. Barhai.	18 <sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
24.	Resistivity aluminium thin films deposited using Anodic vacuum arc.	M.K. Sinha, R.K. Paul, B. Pathak, A. Sarma and P.K. Barhai.	18 <sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
25.	Reconstruction errors in Abel inversion	R.K. Paul, J.T. Andrews, K. Bose & P.K. Barhai	18 <sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
26.	Analysis of Portevin Le-Chatelier Effect in Low Carbon Steel in the light of Chaos.	B. Barat, P. Mukherjee, A. Ray, A. Sarkar and A. Banerjee	Shanghai International Symposium on Nonlinear Science and Applications-2003 Ocean Hotel, Shanghai, China, Nov. 9-13, 2003.
27.	Assy of Stored Energy, Dissipation and J <sub>c</sub> in Oxygen Ion Irradiated BSCCO Superconductor.	S.K. Bandyopadhyay, A. Ray, Pintu Sen, P. Barat, P. Mukherjee and T.V. Chandrashekhar.	National Conference on Materials and their Applications (NCMA'04), Kurukshetra Univ. Kurukshetra, India. March, 11-13, 2004.
28.	Magnetism Studies of Oxygen Ion Irradiated BSCCO Superconductors through SQUID.	S.K. Bandyopadhyay, A. Ray, Pintu Sen, P. Barat, P. Mukherjee and T.V. Chandrashekhar.	Condensed Matter and Materials Physics Conference (CMMP'04) Univ. of Warwick, Warwick, U.K. April, 4-7, 2004.

#### **IV. Books/Monographs :**

1. Rakesh Popli, "Khele Kude Nache Gaye, a compilation of resource materials", Ekal Vidyalaya Yojna, New Delhi (2003) (in Hindi).
2. Rakesh Popli, "A stroll through space –time (a leisurely discourse on Einstein's theory of relativity", Vigyan Prasar, New Delhi (2003).
3. Rakesh Popli, Edited "Teacher support" magazine of National Council for Teacher Education, New Delhi.

#### **E. Seminar/Symposium/Short-term courses attended by faculty members.**

1. Prof. P.K. Barhai attended the International COE (Centre of Excellence) Forum on Plasma Sc. & Tech., (21<sup>st</sup> century COE Program), held at Nagoya Univ. Nagoya, Japan.
2. Dr. P.K. Barhai attended the National Workshop on Status of Basic Science Research in Institutions of Higher Education, organized by Association of Indian University (AIU) at Panjabi University, Patiala during January 29-30, 2004.
3. Dr. P.K. Barhai attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
4. Dr. D. Jairath attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA –2003) held at BIT, Mesra during Dec. 8-11, 2003.
5. Dr. Rakesh Popli delivered a seminar on "Paradoxes in electricity and magnetism" at Vellore Institute of Technology, Vellore (T.N.) on April 17, 2003.
6. Dr. G.G. Srakar delivered a lecture "Application of Laser in steel industry" as invited speaker at The Workshop on Application Laser in Mechanical Industry (WALMI-2004) held at Jadavpur University Kolkata during 27-29 Feb. 2004.
7. Dr. S. Medhekar attended Workshop on Application of Laser in Mechanical Industry (WALMI-2004) held at Jadavpur University Kolkata during Feb. 27-29, 2004.
8. Dr. (Mrs.) Keshri delivered series of lectures on "Mathematical Physics" for UCG sponsored refresher course at Ranchi University during March 12-14, 2003.
9. Dr. (Mrs.) Keshri attended National seminar and conference on cryogenics and its frontier applications held at Bengal Engineering Collage Hawrah during March 25-27, 2004.
10. S.K. Sinha –I attended Condensed matter days held at Dept. of Physics, Jadavpur University Kolkata during Aug. 27-29, 2003.
11. Dr. R.K. Paul attended Workshop on Application of Laser in mechanical Industry (WALMI-2004) held at Jadavpur University Kolkata during Feb. 27-29, 2004.
12. Dr. Arun Sarma attended 1<sup>st</sup> SERC School of Plasma Based Particle Accelerators, SINP Kolkata Feb. 2-21, 2003.
13. S.K. Sinha-II attended Condensed matter days held at Dept. of physics, Jadavpur University Kolkata during Aug. 27-29, 2003.
14. S.K. Sinha-II attended National seminar on emerging trends in science & Technology, held during Jan. 30-31, 2004 at Karunya Nagar, Coimbatore.
15. Mrs. Bornali Sarma attended 1<sup>st</sup> SERC School on Plasma Based Particle Accelerators, SINP Kolkata. Feb. 2-21, 2003.
16. Dr. R.K. Popli attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.

17. Dr. A.K. Shrivastava attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
18. Dr. J.T. Andrews attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
19. Dr. Swapan Konar attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
20. Dr. Sarang Medhekar attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
21. Dr. (Mrs.) S. Keshri attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
22. Dr. R.K. Paul attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
23. Dr. S.K. Sinha –I attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
24. Dr. Arun Sarma attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
25. Dr. S.K. Sinha –II attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
26. Mr. M.K. Sinha attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.
27. Mrs. Bornali Sarma attended 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.

**F. Award nomination of faculty by important organization:**

1. Dr. P.K. Barhai has been appointed as peer team member, National Assessment and Accreditation Council (NAAC) Bangalore for five years.
2. Dr. P.K. Barhai has been nominated as Adviser, National Advisory Committee Plasma Science Society of India, IPR, Gandhi Nagar.
3. Dr. R.K. Popli was nominated Editor of Bulletin of Indian association of Physics teachers.
4. Dr. J.T. Andrews is the recipient of prestigious BOYSCOST fellowship to do post doctoral research in Humboldt Univ., Germany for the year 2003-2004.
5. Dr. Arun Sarma is the recipient of prestigious BOYSCOST fellowship to do post doctoral research in University of Innsbruck, Austria for the year 2003-2004.
6. M.K. Sinha received best poster award in 18<sup>th</sup> National Symposium on Plasma Science & Technology (PLASMA-2003) held at BIT, Mesra during Dec. 8-11, 2003.

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## Department of Biomedical Instrumentation

Current day technology is quite extensive in electronic equipment with processor control in all life saving equipment. Thus, a definite need of the trained workforce was felt in this area by the clinicians and technologists. To fulfill the gap in this area, this institute has started a postgraduate programme in Biomedical Instrumentation that aims at imparting in-depth knowledge to students with live exposure to the use of sophisticated medical equipment. This 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 major objective of the programme is to impart knowledge of all possible applications of Biomedical Instrumentation, its technology, its use and intelligent operation to assist physicians and surgeons. Apart from the above mentioned medical institutions, the department has continued interaction with different other hospitals such as Apollo Hospital at Ranchi as well as with Calcutta Medical and Research Institute at Kolkata to develop the technical skill and know how about the modern advanced medical equipment among the students.

The Department of Biomedical Instrumentation also has a strong collaboration with G.E. Medical Systems (India). Two G.E. fund scholarship amounting to Rs. 1.65 lacs each is being currently awarded to eligible students of M.Sc. Biomedical Instrumentation, to meet total expenses for five semesters. The G.E. Medical Systems (India) has now also given their consent to provide training to ten other student during their fifth semester. The department is trying to continue the collaborative works with different other organizations in the area of Biomedical Instruments.

The department has completed one research project during the session 2003-2004 and another projects is currently enduring. During this session, a moderate number of research papers have been published as well as communicated in international and national journals. Faculty members of this department have also started collaborative research works in different areas of Biomedical Engineering with the School of Biomedical Engineering and Department of Electronics Engineering, Banaras Hindu University, varanasi (India). Faculties of the department of Biomedical Instrumentation are enthusiastically involved to continue the ongoing research in the area of Biomedical signal Processing, Biomedical Instrumentation, Biomedical and several other related areas. Emphasis has also been laid on the application of soft computing such as artificial neural network, fuzzy logic genetic algorithm etc. for the processing and expert computerized classification of different Biosignals.

**Degree/Diploma offered :** M.Sc. (Biomedical Instrumentation).

**Faculty Position :** Lecturer – 2, Associate Lecturer – 1.

**Number of students enrolled with department :** 45

### Academic Innovations, Research and Development activities :

#### A. Ongoing Project :

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project
Control of multifunctional prosthesis through simulation of myoelectric signals.	UGC	March 2001	Rs. 2,77,500.00	3 years

**B. Project completed during the year 2003-2004 :**

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project
Intelligent monitoring system for syncopic patients in varied postures.	AICTE	June 2001	Rs.4,25,000.00	2 years

**C. Publication by faculty :**

**I. International Journals :**

1. Pal, B.B. Pal, D. & Das, B.N. (2003) A biomedical electronic converter used at analog to digital interface for instrumentation system, Presented in National Symposium on Mathematical Methods and Application, IIT Madras, Chennai, 22<sup>nd</sup> Dec.
2. Pal, B.B., Pal, D. & Das, B.N. (2003) Some important Biomedical Electronic analog filter with Digital Control arrangement, Presented in National Symposium on Mathematical Methods and Application, IIT Madras, Chennai, 22<sup>nd</sup> Dec.
3. Sinha, R.K. (2003) Artificial neural network detects changes in electro encephalogram power spectrum of different sleep-wake states in an animal model of heat stress, Medical and Biological Engineering and Computing (IEE), 41 (5): 119-126.
4. Sinha, R.K. & Ray, A.K. (2003) Effect of p-CPA Pretreatment on EEG Power Spectra in Experimental Open Brain Injury in Rats, Iranian Biomedical Journal, 7 (3): 119-126.
5. Sinha, R.K. (In Press) Electro-encephalogram disturbances in different sleep-wake states following exposure to high environmental heat, Medical and Biological Engineering and Computing (IEE), 42.
6. Sinha, R.K. & Ray, A.K. (Accepted) The effect of acute and chronic heat exposure on frequency of EEG components in different sleep-wake state in young rats, Iranian Biomedical Journals.
7. Sinha, R.K. & Ray, A.K. (Communicated) An assessment of changes in open-field and high plus-maze behavior following heat stress in rats, Iranian Biomedical Journal.
8. Sinha, R.K. (Communicated) Estimation of electro-encephalogram power spectrum as an index of heat stress by artificial neural network, Journal of Medical Engineering and Technology.

**II. National Journals :**

1. Sinha, R.K. (2002) Backpropagation artificial neural network to detect hyperthermic seizures in rats, Online Journal of Health and Allied Sciences, 4:1.
2. Sinha, R.K., Agrawal, N.K. & Ray, A.K. (2003) a power spectrum based backpropagation artificial neural network model for classification of sleep-wake stages in rats, Online Journal of Health and Allied Sciences, 1:1.
3. Sinha, R.K., Ray, A.K. & Agrawal, N.K. (Accepted) An artificial neural network to detect EEG seizures, Neurology India.
4. Agrawal, N.K., Sinha, R.K., Ray, A.K. & Singh, S.P. (Communicated) Chronic Exposure of Modulated 2450 MHz Microwave Radiation Alters the Thyroid Hormone Secretion in Pregnant Rats, Online Journal of Health and Allied Sciences.

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

1. Faculty members and students of Department of Biomedical Instrumentation attended one-day workshop on "Modern Medical Equipment arranged specially for them by Advanced Diagnostic Centre, Ranchi on 14<sup>th</sup> 2003.
2. R.K. Sinha attended- AICTE-ISTE Two Week Training Programme "Present trends & future prospects of non-conventional energy in Jharkhand – Problems & Challenges" organized by Department of Mechanical Engineering (9-21 June 2003), Birla Institute of Technology, Mesra.
3. Dr. B.N. Das attended "Assessor's training workshop" conducted by AICTE Eastern Regional Centre Kolkata (8<sup>th</sup> November 2003) at TTTI, Kolkata.
4. Dr. B.N. Das, R.K. Sinha and S. Kumar attended "1<sup>st</sup> One Day International Workshop on Wireless Communication Technologies IWWCT-2003" organized by Department of Electronics and Communication Engineering (12<sup>th</sup> November 2003), Birla Institute of Technology, Mesra.
5. Dr. B.N. Das and R.K. Sinha attended – "Interactive Workshop & Awareness Programme on Advances and Scope in Biotechnology Education" organized by ISTE and Department of Biotechnology (29<sup>th</sup> March 2004), Birla Institute of Technology, Mesra.

**E. Awards/Nomination of faculty by important organization :**

1. Dr. B.N. Das, Worked as an AICTE expert team member to assess two Engineering Colleges on 10 –11 March at Kolkata.
2. Dr. B.N. Das, Attended a meeting of examiners arranged by UPSC on 13 – 14 July, 2004 at New Delhi.
3. Dr. B.N. Das, Attended different meetings of the Managing committee of the University Institute of Technology, University of Burdwan, Bardwan as a AICTE member on the committee.
4. Dr. B.N. Das, Attended a selection committee meeting for Institute of Applied Engineering and Technology, Bundelkhand University of Jhansi as expert member, nominated by Chancellor/Governor of U.P. in June 2003.

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## DEPARTMENT OF BIOTECHNOLOGY

The Department of Biotechnology was established in 2002 with financial support from the Department of Agriculture, Government of Jharkhand, with objectives like providing education and training facilities, to carry out application oriented research, to develop in house technologies, and to promote consultancy services in various areas of Biotechnology. The department is planning to introduce postgraduate courses in Biotechnology and Biochemical Engineering. The department has a well-defined independent building of about 35000 sq. ft. with well-equipped laboratories of :-

- Molecular Biology, Genetic Engineering and Cell Biology
- Plant and Animal Biotechnology
- Microbiology
- Biochemistry
- Enzyme Engineering
- Bioinformatics,
- Bioprocess Engineering
- Chemical Engineering and
- Wastewater Treatment

The department has a vision to develop a "Centre for Excellence" in Biotechnology for carrying out basic research on Biofuels, Biodiversity conservation, Cultivation of endangered medicinal plants of Jharkhand, to create a Biotech Information Hub and Entrepreneur Park. Moreover some new areas like Proteomics and Genomics, Drug Discovery and Vaccine Development, IPR and Patenting in Biotechnology are of special interest to this department. The department has expertise in all areas of Biotechnology involved in research and teaching.

The new 'state-of-the-art' instrumentation facilities included in the present fiscal year are MegaBACE Automated DNA sequencer, GC-Mass Spectrophotometer, Lab and Pilot scale Bioreactors, Cross-flow filtration systems.

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

**Faculty Position :** Professor - 1, Reader - 1, Lecturers - 5, Associate Lecturers - 2.

**Number of Students Enrolled :** 38

### **Academic Innovations, Research and Development activities :**

#### **A. Projects submitted during the year 2003-2004 :**

- Dr. Kunal Mukhophadyay: Research Proposal submitted to DBT "Study of biodiversity, conservation and molecular documentation of *Commiphora wightii* using plant biotechnological approaches and exploring possibilities of extra cellular production of the oleo-gum resin 'guggul' in suspension cultures".
- Dr. Kanchan Phadwal: Proposal submitted to DBT for setting up a "BTIS Subcentre" at BIT, Mesra, Ranchi.
- Dr. Sanjay Ghosh: Research Proposal submitted to Ministry of Health, Govt. of Jharkhand. "A study on molecular basis of virulence in *Leishmania*".

- Mr. Pankaj Kumar Mishra: Research Proposal submitted to Ministry of Health, Govt. of Jharkhand "Identification and characterization of filarial infective stage specific antigen leading to development of filarial vaccine".

**B. Seminar/Conference/Short term course conducted by the department :**

- Interactive Workshop and Awareness Programme on "Advances and Scope in Biotechnology Education" (March 29<sup>th</sup> 2004), Sponsored by Indian Society For Technical Education (ISTE). A total of Delegates 124 participated in the workshop.

Dr. S.K. Mukherje, Dr. A.K. Chaterjee where some of the dignitaries participated in it.

- Dr. P.Chosh, Executive Director, Birla Institute of Scientific Research, Jaipur delivered lecture on "Recent Advances in Biotechnology" on 23<sup>rd</sup> January 2003.

**C. Publication by faculty :**

- D. Sasmal & Papiya Mitra Mazumder (2003). Comparative assessment of the antimicrobial activities of citrinin and crude extract of *Fusarium moniliforme*. *The Indian Pharmacist II* (15) 67-71
- Kanchan Phadwal (2003). Effect of nutrient depletion on  $\beta$ -carotene and glycerol accumulation in two strains of *Dunaliella* sp. *Bioresource Technology*, 90 (1), 55-58.
- Kanchan Phadwal (2003). Isolation and characterization of an indigenous isolate of *Dunaliella* sp. for  $\beta$ -carotene and glycerol production from a hypersaline lake, India. *Journal of Basic Microbiology*, 43 (4), 423-429.
- Sanjay Ghosh (2003). Mitochondrial differentiation in kinetoplastid protozoa: a plethora of RNA controls. *Differentiation* 71: 549-556.
- Sanjay Ghosh (2003). Role of Superoxide Dismutase in survival of *Leishmania* within the macrophage. *Biochemical J.* 369: 447-452.

**D. Seminars/Symposium/Short term courses attended by faculty:**

1. D. Sasmal & Sangita Das presented paper on "Diuretic activity of the ethanolic extract of the levels of *Nyctanthes arbortristis*" at the 55<sup>th</sup> Indian Pharmaceutical Congress, Dec. 19-21, 2003 at Chennai.
2. Kunal Mukhopadhyay attended a three days workshop and delivered invited lecture on Medicinal Plant Biotechnology conducted by Birla Institute of Scientific Research, Jaipur, India from Oct. 15-17, 2003.

3. Kunal Mukhopadhyay attended a symposium on "Genomics and Bioinformatics" at Bose Institute, Kolkata, Jan. 29-30, 2004.
4. Kanchan Phadwal attended a three workshop and delivered invited lecture on Proteomics and Genomics in Biotechnology conducted by Birla Institute of Scientific Reseach, Jaipur, India from Sept. 18-20, 2003.
5. P.K. Mishra attended a conference and delivered a lecture on Cell mediated immune response generated in mice and gerbil model by various forms of vaccine preparations, 30<sup>th</sup> Annual Conference of Indian Immunological Society, SGIMR, Lucknow Nov. 23-25, 2003.
6. P.K. Mishra delivered an invited lecture on Development of parasitic Vaccine at school of Life Sciences, Sambalpur University, Jyoti Vihar.
7. P.K. Mishra attended a symposium on Genomics and Bioinformatics at Bose Institute, Kolkata, Jan. 29-30, 2004.
8. Harmeet Singh attended a short term course on "Recent Advances in Design and Analysis of Biotechnology processes" I.I.T. Mumbai, May 13-17, 2003.
9. Pratyosh Shukla and Harmeet Singh attended a trade fair Biotech India International 2003- Bio-convergence for Excellence, Hyderabad, Sept. 24-27, 2003.
10. Sanjay Ghosh delivered an invited lecture at European Molecular Biology Laboratory (EMBL), Heidelberg. "Molecular characterization of Superoxide dismutase in Leishmania", 2003.

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## DEPARTMENT OF CIVIL ENGINEERING

The department offers Undergraduate degree course, Postgraduate degree course with soil mechanics and structural engineering as specialization. The department offers the quality development in the state. The department also offer adequate facilities for research work. The faculty members are actively engaged in research and consultancy in which all students of the department programmes have ample opportunity of active involvement. Both undergraduate & Postgraduate Students are trained in computer applications in Civil Engineering problems and the latest software that 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 materials testing laboratories including concrete laboratories; Road materials laboratories; Rock mechanics laboratories; Soil mechanics laboratories etc. All are well equipped for all sorts of testing satisfying all requirements of Indian Standard Codes. Hydraulic 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 and strengthened by the addition of equipments and through repairing of many machine and equipment.

The department has purchased another set of Total station and one set of SPT and one set of GPS is in the process of purchasing through MODROB scheme, AICTE.

**Degree/Diploma offered :** B.E. in Civil Engineering, M.E. (Soil Mechanics and Foundation Engineering), M.E. in Structural Engineering, Ph.D.

**Faculty Position :** Professor – 4, Readers –3, Lecturers –8, Associate Lecturer –1.

**Number of Student enrolled with department :** 57

### Academic Innovation, Research & Development Activities :

#### A. On going project :

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 CMPDIL Ranchi.
2. AICTE project sanctioned on MODOROB scheme in the financial year 2002-2003 for Rs.7.00 lakhs for infrastructure development vide letter No. 8021/RD/NPROJ/MOD-57/2002-2003 dated 10.3. 2003.

#### B. Seminar/Workshop organized :

1. Department organized a 3 day's training programe on "Construction and Maintenance of Rural Roads under PMGSY" for REO engineers of Jharkhand from 14<sup>th</sup> to 16<sup>th</sup> February, 2004.

#### C. Seminar/Symposium/Short-term course attended by the faculty members :

1. Civil Engineering Department is very much attached to the infrastructure development of the state of 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 advisors of EdCIL Ministry of Resource Development, Govt. of India.
4. Prof. S. Sengupta participated and presented a paper 'Poverty, Rural India and Civil Engineers, on 19<sup>th</sup> National Convention of Civil Engineering. On 'Role of Civil Engineers in Poverty alleviation'. Organized by Institution of Engineers, Ranchi on 22<sup>nd</sup> and 23<sup>rd</sup> November, 2003.
5. Prof. S. Sengupta participated Annual session of Indian Road Congress on 8<sup>th</sup> to 11<sup>th</sup> January, 2004 at Ahmedabad.
6. Prof. S. Sengupta organized Technical Training programme on construction and Maintenance of Rural roads under PMGSY for REO Engineers, Jharkhand from 14 – 16 February, 2004.
7. Prof. S. Sengupta scrutinized all the DPR for Rural roads for Jharkhand under PMGSY as the representative of Min. of Rural Development, Govt. of India. It is a continuous process.
8. Prof. S. Sengupta was actively involved for technical support for the development of Birsa Munda Airport at Ranchi and Gaya Airport at Gaya during March 2004.
9. Dr. Balram Singh attended the International Conference on Earth Resources Manageemnt, Kuvemopu University, Shimoga, India, during January, 28-30, 2004, 'Rainwater harvesting – A Case study - BIT Mesra campus.
10. Dr. A.K. Sinha was actively involved as course coordinate in Technical Training programme of REO Engineers, Jharkhand during February 14-16, 2004.
11. Mr. Arun Kumar was involved in Technical Training programme of REO Engineers, Jharkhand during February 14-16, 2004.
12. Dr. R.R. Sahay was actively involved in Traffic design of Gaya & Ranchi Airport during March, 2004.
13. Mrs. Bindu Lal was involved in Technical Training programme of REO JE's/AE's Engineer, Jharkhand during February 14-16, 2004.
14. Mr. Siddharth Sengupta was involved in Technical Training programme of JE's/AE's Engineers, Jharkhand during February 14-16, 2004.

15. Mr. U.C. Sahoo participated and presented a paper on "Planning for Infrastructure Development in Transportation Sector" in the 19<sup>th</sup> National Convention of Civil Engineers organized by Institution of Engineers (I) Ranchi sector during 22-23 November, 2003.
16. Mr. U.C. Sahoo involved as course coordinator of JE/AE's REO Engineers, Jharkhand under PMGSY.
17. Mr. U.C. Sahoo attended a short term course on "FEM and its application to solve Complex Problems" organized by UCE, Burla during 8-13 March, 2004.
18. Mr. Rajesh Kumar attended the international conference Structural Engineering Convention-An International Meet, IIT Kharagpur, Dec. 12-14, 2003.
19. Mr. Rajesh Kumar attended the International Conference on ISTAM, BIT Mesra, Ranchi, December, 2003.
20. Mr. Rajesh Kumar attended the National Conference of Institution of Engineers, Ranchi on November- December, 2003.
21. Mr. Rajesh Kumar was involved in the training programme on Construction and Maintenance of Rural Roads under PMGSY for REO Engineers, held on February 14-16, 2004.

#### **D. Educational Tour :**

The department has organized the educational tour for Civil Engineering students on 4<sup>th</sup> semester to 8<sup>th</sup> semester students including ME students and few faculties participated. Dr. C.K. Singh, Ex-Engineers in chief-cum Spl. Secretary cum-Addl. Commissioner and Visiting professor of this department arranged the expert lecturers at the site related to roads, bridges and hot-mixed plant in Ranchi districts.

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## DEPARTMENT OF COMPUTER SCIENCES & ENGINEERING

The Department of Computer Science started functioning in 1983 for Bachelor's degree course with bare minimum laboratory facilities, and sanctioned strength of the thirty students. Within a span of 21 years the Department has grown rapidly to become one of the largest departments of the Institute. The faculty of the department involved in research work primarily in the areas of Parallel and Distributed Computing, Software Engineering, Artificial Intelligence & Expert Systems, Soft Computing, Computer Graphics, Image Processing and Modeling & Simulation.

### Computer Centre

The Computer Laboratory is equipped with nine High End Systems with latest S/W known to be qualified under the Super Mini-Computer category and Super Computer PARAM 10000. The detail of each one is described below:

- \* PARAM – 10000 Super Computer, 8 CPU (Ultra SPARC III @ 400 MHz), 2 CPU per node, 2.5 GB Memory, 10 x 9.1 GB Ultra SCSI HDD, 32X CD ROM Drive per node, 1.44 MB FDD per node, 2 x 360W Power Supply per node, PGX 32 Graphics Card per node, 10/100 Fast Ethernet Card in each node, 8 Port PARAM NET Switch, 4 nos. PARAM NET CCP2 Cards, 12 Port per node, Ethernet Switch, Console 21", 4 MM 12/24 GB DAT Drive, Solaris 7 Server unlimited user license per node, University Workshop Software's, C, C++, F-7, F-90, Pascal, Java.

- \* Rs/6000 P Series P610 with 64 bit RISC based Server

Dual Processor

375 MHz Processor

Integrated SCSI-3 F/W Adapter

Power GXT 135 P Graphics Accelerator (PCI) and 36.4 GB Ultra 3 SCSI Hot & Cold Plug HDD x 2.

- \* DEC-Alpha-600 has Alpha@175 MHz with 2.5 GB Hard Disk, 600 MB CDROM, 525 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 has 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, 32 MB RAM, 16 KB Data & Instruction Cache, Indy Video Camera, Microphone, Speakers, Mouse, 540 MB HDD, IRIX Operating System Version 5.2 with C, C++, PASCAL, COBOL Compilers, Multimedia Showcase.

- \* SUN ULTRA IS BUS workstation/64 MB RAM/2 GB HDD/17" Color Monitor/CDROM Drive/Microphone/Built in Ethernet/Solaris 2.5 Operating System/Java Workshop/C/C++ FORTRAN 77 Compiler.

- \* One High End IBM Netfinity Server Pentium-II having Clock Speed 450 MHz/256 MB SDRAM/9.00 GB HDD/32X CD ROM/Floppy Drive/IBM Mouse and 17"SVGA Color Monitor with Window NT Operating System and is networked with 100 Nos. IBM Thin Client.

- \* 1 No. Server of HCL Infinity PII, 333 MHz/192 MB SDRAM/4.3 HDD/1.44 MB FDD/17" SVGA Color Monitor Digital 32X CD Drive/Keyboard/Mouse.

- \* Compaq Proliant 400, 550 MHz Clock Speed, 20 GB HDD/576 MB SDRAM/512 KB Cache/1.44 MB FDD/15" Color Monitor.

- \* Digital Deil 5100/RISC Processor/2.1 GB HDD/96 MB RAM/133 MHz Clock Speed.

Total No. of PCs-300 all PIV 256 MB SDRAM, 40 GB HDD.

**Degree/Diploma offered :**

Under Graduate Programme	Bachelor of Engineering (Computer Science)
	Bachelor of Engineering (Information Technology)
Post Graduate Programme	M.Tech. (Computer Science)
	ME (Software Engineering)
	Master of Computer Application

**Faculty Position :** Professor –2, Reader –1, Senior Lecturer –2, Lecturer –21, Associate Lecturer –3.

**Number of Students enrolled with department :** Undergraduate – 326, Postgraduate - 227

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

**A. Ongoing Project :**

Project	Funding Agency	Amount (Rs.)	Duration
COILNET "Content Development for IT Localization Network for Socio-Economic Development" of Jharkhand.	Ministry of Information Technology	1 Cr.	3 years
To Set-up Incubation Center.	SIDBI	2.25. Cr.	

**B. Project submitted during the year 2003-2004 :**

1. Dr. G. Sahoo, "The Design of Neural Networks using a Priori Knowledge for Time Series of Forecasting" submitted to AICTE.
2. Mr. R.K. Jena & Dr. G. Sahoo, "Design and Use of Soft Computing Techniques for Predication of Protein Structures" submitted to AICTE.

**C. Seminar/Conference/Short-term Course conducted by the Department :**

1. COIL-NET has conducted the teachers training program for teachers of Government Girls High School, Bariatu in their premises. The training programme was aimed at training the teachers in Basic Computer usage as also office application using Hindi Software. It was a week - long programme starting January 12, 2004.
2. The proposal for the Short term course on Soft Computing Concepts and Applications by Dr. G. Sahoo & R.K. Jena has been approved by ISTE-AICTE for the session 2003-2004.

**D. Publication by Faculty :**

1. K. Lal, "Role of Medical Expert System in sports injuries" presented in Silver Jubilee Congress of Indian Association of Sports Medicine organized by IASM, AFSM and GNDU (jointly) at Guru Nanak Dev University Amritsar from 3 Dec. 2003.
2. Dr. G. Sahoo & Chinmay Majhi, "DNA Sequencing by Oligo Nucleotide Hybridization: A Genetic Algorithm Approach", submitted for publication in the proceeding of workshop GECCO-2004 on self organization in representations for Evolutionary Algorithms.
3. K. Sridhar patnaik, J.F. Peters, & B.D. Sahoo, "Software Cost Estimation Techniques – A Review", proceedings of the National Conference on Knowledge Based Automation of Software Engineering, AICTE New Delhi, SIET-Dhenkanal, ORISSA 15-21 July 2003.



4. K. Sridhar Patnaik, S. Malhotra, & B.D. Sahoo, "Software Development Effort Estimation using CBR: A Review", proceedings of the National Conference on Software Engineering Principles and Practice, SEEP 2004 P (87-94), AICTE, CSIR New Delhi, TIET- Patiala, Punjab, 5-6 March, 2004.
5. K. Sridhar Patnaik, J.F. Peters, & B.D. Sahoo, "Soft Computing approaches to software cost estimation", accepted for publication in CSI (Computer Society of India) journal.
6. A. Srivastava, "A Refinement of the Category-Partition Method of Testing", proceedings of the National Conference on Software Engineering Principles and Practice, SEEP 2004 P (87-94), AICTE, CSIR New Delhi, TIET – Patiala, Punjab, 5-6 March, 2004.

**E. Seminar/Symposium/Short-term Course attended by faculty members .**

1. All faculty members of the department attended the International Workshop on Wireless Communication Technologies held at B.I.T. Mesra, Ranchi on Nov. 12.2003.
2. Dr. G. Sahoo attended the National Workshop on Curriculum Development for Technical Education, April 3-4 , 2004 held at B.I.T., Mesra, Ranchi.
3. S. Paul attended National Workshop held at IIT, Roorkee.
4. K.T. Lucas & B.K. Sarkar attended the "Open Source Program" under the IBM University Programme, IIT Delhi, from 24<sup>th</sup> June 11<sup>th</sup> July 2003.

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## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

The department is dedicated to the current needs of the industry and has the flexibility to tune its programs according to different requirements. Application of new technology in various fields is one of the concerns of the department. The department has various collaborative projects with neighboring industries like RDCIS (SAIL), CCL, CMPDIL, HEC, ECL, Usha Martin etc. An MoU has been signed between BIT, Mesra and RDCIS, SAIL, Ranchi to increase research interaction in which the department plays an important role.

The department has been a center for research in the areas of digital signal processing, plasma engineering, microprocessor applications, fractional horsepower electric machines etc. 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 has 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 making toolbox to sense and identify objects.

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. In pursuit of that, the department is emphasizing to introduce new P.G. Course in Instrumentation, Power Electronics & Drives, and Electrical Machines.

The department targets to work in the area of intelligent control and apply the intelligent control methodologies or tools like neural network, fuzzy logic, and genetic algorithm in (a) Electrical Machine Drives (b) Power Systems and (c) Induction Heating.

**Degree/Diploma Offered :**

Title of Programme	Field of specialization	Full-time or Part -time	Duration
Under-graduate programmes	B.E. (Elect. & Electronics)	Full-Time	4 Years
Post-graduate programme	M.E. (Electrical) Control systems, Power systems	Full- time/ Part - time	2 Years 3 Years
Research program	Ph. D.	Full – time Part – time	

**Faculty Position :** Professor – 4, Reader – 2, Senior Lecturer – 1, Lecturer – 13.

**Number of Students Enrolled with Department :** Undergraduate – 143, Postgraduate – 24, Ph.D. – 6.

**Academic Innovations, Research Development Activities :****A. Ongoing Project :**

Title of the project	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project
Control of multifunction prosthesis through simulation of myoelectric signals.	UGC	June 2001	2.775 lacs	4 years
Development of Programmable Controller Based Automatic Generation Control	UGC	28.12.2003	4.92 lacs	3 years
Analysis of Intelligent Controller for AGC	AICTE	10.03.2003	3 lacs	2 years

**B. Project Sanctioned during the year 2003-2004**

Title of the project	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project
Establishment of centre for intelligent system control & design under fund for improvement of S&T infrastructure in universities & higher Educational institution (FIST).	DST	26.12.2003	27.00 lacs	5 years
MODROBS (Control Systems) for up-gradation of electrical measurement & instrumentation laboratory.	AICTE	10.03.2003	10.00 lacs	2 years

**C. Project submitted during the year 2003-2004**

Name of the Investigator	Title of the project and duration	Scheme	Funding Agency
Dr. B.M. Karan	Modernization & Removal of Obsolescence of Control System Laboratory.	MODROB	AICTE

**D. Seminar/Conference/Short-Term Course Conducted by the Department.**

1. Organized a seminar for IEEE Power Engineering Society, Ranchi on "Power System problems of Jharkhand State" on 13<sup>th</sup> September 2003. The speakers were Er. U.C. Rastogi, General Manager (Electrical), and Er. Kripal Singh, Dy. General Manager (Electrical) from MECON, Ranchi.
2. Conducted an "Inhouse Training Programme for Techniques of Electrical Maintenance Department of B.I.T. Mesra", during dated 15.9.2003 to 20.9.2003.

**E. Publications by Faculty****I. International Journal**

1. Dr. T. Ghose et al. "Effects of Unbalance and Harmonics on Optimal Capacitor Placement in Distribution Systems", Published in Electric Power System Research Journal, UK in November 2003.
2. Mr. D.K. Mohanta et al. "Fuzzy reliability evaluation of captive power plant maintenance scheduling incorporating uncertain forced rate and load representation," accepted for publication in Electric Power System Research Journal, UK.
3. Mr. R.K. Sinha et al. "EEG Disturbances in Different Sleep-wake States following Exposure to High Environmental Heat", accepted for publication in Medical and Biological Engineering and Computing (IEE).
4. Mr. R.K. Sinha et al. "Artificial Neural Network Detects Changes in Electro-Encephalogram Power Spectrum of Different Sleep-wake States in an Animal Model of Heat Stress", published in Medical and Biological Engineering and Computing (IEE), 41 (5); 595-600, 2003.
5. Mr. R.K. Sinha et al. "Effect of p-CPA Pretreatment on EEG Power Spectra in Experimental Open Brain Injury in Rats", published in Iranian Biomedical Journal, 7 (3) : 119-126, 2003.
6. Mr. R.K. Sinha et al. "The Effect of Acute and Chronic Heart Exposure on Frequency of EEG Components in Different Sleep-wake State in Young Rats", accepted for publication in Iranian Biomedical Journal.
7. Mr. R.K. Sinha et al. "A Power Spectrum Based Back-propagation Artificial Neural Network Model for Classification of Sleep-wake Stages in Rats", published in Online Journal of health and Allied Sciences, 4: 1, 2003.

**II. National Journals**

1. Dr. B.M Karan et al. "Simulation Model for Torque and Rotor Flux Estimation in Induction Motor", Journal of the Institution of Engineers (I), vol. 84, September 2003.
2. Mr. R.K. Sinha et al. "An Artificial Neural Network to detect EEG Seizures", accepted for publication in Neurology India.

### **III. Books/Monographs**

1. P.R. Thakura had done review of book on "Power Electronics", by Singh and Kanchandani,, TMH Delhi in July 2003.

### **F. Seminars/Symposium/Short-term course attended by faculty members :**

9. Dr. B.M. Karan et al. "Power Quality Disturbance Analysis using Wavelet Transform", Published in the proceedings of International conference on Emerging Technologies (ICET)', 2003 held in Bhubaneswar during 19-21 December, 2003.
10. Dr. B.M. Karan et al. "Power System Disturbance Recognition using STD- MRA Techniques," Published in the proceedings of International conference on Signal Processing & Robotics, held in IIIT, Allahabad during Feb 20-23, 2004.
11. Mr. D.K. Mohanta et al. "Emerging Trends in Fuzzy Based Power System Reliability Analysis", Published in the proceedings of 'International conference on Emerging Technologies (ICET)', 2003 held in Bhubaneswar during 19-21 December, 2003.
12. Mr. Kalyan Chatterjee et al. "Dual Mode PI Controller for AGC" Published in the proceedings of 'International conference on Emerging Technologies (ICET)', 2003 held in Bhubaneswar during 19-21 December, 2003.
13. Mr. Kalyan Chatterjee et al. " Neural Network Based Self-tuning of Integral Controller for Automatic Generation Control (AGC)", Published in the International Conference SCI 2003, Florida, USA.

### **National Conference**

14. Dr. B.N. Das et al. "Biomedical Electronic Converter used at Analog to Digital Interface for Instrumentation System", National Symposium of Mathematical Methods and Application (NSMMAA-03) at I.I.T. Madras, 22<sup>nd</sup> December 2003.
15. Dr. B.N. Das et al. "Some Important Biomedical Electronic Analog Filter with Digital Control Arrangement", National Symposium of Mathematical Methods and Application (NSMMAA-03) at IIT Madras, 22<sup>nd</sup> December 2003.
16. Mr. K. Chatterjee et al. "Design of Dual Mode Switching for AGC", Presented in the 27<sup>th</sup> National System Conference of NSC – 2003, held at IIT, Kharagpur during December 17-19, 2003.

### **Participation of Faculties in Short-term Course/Workshop etc.**

1. Dr. B.M. Karan, Vijaya Laxmi, J. Sahu, S. Ghosh & S. Samanta, Participated in "International Conference on High Performance Computing" at Hyderabad during 17<sup>th</sup> – 20<sup>th</sup> December, 2003.
2. Mr. R.C. Jha, Participated in the short-term course on "Electric Power System Operation and Management in Restructured Environment", sponsored by AICTE-IS. TE under the QIP, organized by Department of Electrical Engineering, IIT, Kanpur held during July 21-25, 2003.
3. Attended workshop on "Power Reforms : Technological and Financial" at IIT, Kanpur held during September 4-5, 2003.

4. Ms. J. Sahu and Ms. Vijaya Laxmi, Participated in the short-term course on "Real Time Signal Processing and Neural Computation using DSP Workstation", organized by IIT, Kanpur during 29<sup>th</sup> September –4<sup>th</sup> October, 2003.
5. Ms. J. Sahu and Ms. Vijaya Laxmi, Participated in "IEEE Workshop on Recent Advances in Power Electronics and Sensorless Control of Drives" at IIT, Delhi during 26-27 September, 2003.
6. Mr. S. Ghosh, Participated in short-term "Induction Training Programme" organized by TTTI Kolkata during 4-14 August, 2003.
7. Dr. T. Ghose, Participated in UGC sponsored course on "Recent Advances in Power Engineering" at Jadavpur University from 26.5.03 14-6.2003.
8. Dr. T. Ghose, Attended one day workshop on "Privatization of Power Market" organized by IEEE, Power Engineering Society, Kolkata.

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## DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

The Department has modern laboratories and support facilities in all major areas of Electronics and Communication. These include.

Instrumentation, Analog and Digital Communication, Digital Electronics and Integrated Circuits, Microwave, Microprocessor, Fiber Optics Communication, Television, Industrial Electronics, 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, monochrometer, SM/MM tapered Erbium doped/fibers.

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

A scalar network analyser with plotter (22 GHz), Spectrum analyser spanning 9 KHz to 22GHz range, Sweep oscillators for 5.9 to 12.4 GHz, 22GHz microwave frequency counter, milliwatt and power-meter support R&D work in the 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. The VLSI design software has been installed in all systems in the CAD Lab., and full-fledged laboratory course has been introduced from this semester. Also MULTISIM and ULTIMATE Software had been installed in the systems in our CAD Lab. Circuits & Devices Lab. course is presently being conducted in this Lab.

An International Center for Wireless and Mobile Communication has been inaugurated on March 28, 2004, under the Department of Electronics & Communication Engineering, BIT, Mesra, under ASIA-LINK programme. The details of ASIA-LINK are as follows : -

**ASIA-LINK Programme:** An Euro-Asian Network for strengthening Graduate Education and Research in Wireless Communication (EAGER-NETWIC) between BIT and Aalborg University, Denmark.

### Partners :

- Aalborg University, Denmark
- Delft University of Technology, Netherlands
- Università di Roma Tor Vergata, Italy
- Birla Institute of Technology, India
- Institut Teknologi Bandung, Indonesia

The Dept. was identified for 'Funds for Improvement of S & T Infrastructure in Universities and Higher Educational Institutions (FIST)' program of Dept. of Science & Technology receive a grant of Rs. 35 Lacs for support in level I category.

### Lectures Delivered

1. Prof. Ignas G.M.M. Niemegeers, Chair, Centre for Wireless & Personal Comm. & Head, Department of Telecommunication, Delft University of Technology, Netherlands, delivered a lecture to the final year students of Electronics & Comm. Engg. And Computer Science

Engg. On 27<sup>th</sup> March on the topic "Ubiquitous Computing and Communication & AG Systems".

2. Prof. Ramjee Prasad, Director, Centre for Tele Infrastruktur, CTIF, Aalborg University, Denmark, delivered a lecturer on 28<sup>th</sup> March 2004 on the topic "4G Systems" in the International Centre for Wireless & Mobile Communication, Department of Electronics & Comm. Engg.

**Degree/Diploma offered:** B.E., M.E. (Instrumentation), M.E. (Microwave), Ph.D.

**Faculty Position :** Professor – 2, Reader – 7, Senior Lecturer – 1, Lecturer – 9, Associate Lecturer – 2.

**Number of Students enrolled with Department :** Undergraduate – 329, Postgraduate – 11.

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

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

1. "Use of Nonlinear Photorefractive Materials in Fiber Interconnections" sanctioned by UGC, New Delhi on 12 Oct. 2000. Sanctioned amount of Rs. 4.19 Lacs, Duration – 3 years, Principal Investigator : Dr. S.K. Ghorai
2. "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 Duration – 2 years, Principal Investigator : Dr. J.S. Roy".
3. "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, Duration – 3 years, Principal Investigator : Dr. S.K. Ghorai".
4. "Design and Development of Active Filters and Oscillators to operate at Low frequencies", Acceptance received from ISRO. Principal Investigator : Dr. D. Pal.
5. MODROBS/Instrumentation Laboratory, AICTE, Sanctioned Amount Rs. 8.0 Lacs, Duration – 2 years, Principle Investigator: Prof. S.C. Goel.

#### **B. Project completed during the year 2003-2004 :**

1. "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, Duration – 3 ½ years, Principal Investigator : Dr. S. K. Ghorai.
2. "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.

#### **C. Projects submitted during the year 2003-2004 :**

1. Fiber Optic Communication Laboratory, AICTE, by Dr. S.K. Ghorai.
2. Design of Global Positioning System Receiver, DRDO, R & T (Electronics) Scheme by Dr. N Gupta & Prof. V.R. Gupta.

#### **D. Seminar/conference/short-term courses conducted by the department :**

1. Name of the Conference – International Workshop on Wireless Communication Technologies (IWWCT- 2003) Date : November 12, 2003. A total of 32 delegates participated in the workshop.



**Participants List :**

Mr. R.S. Sharma, IAS	-	Secretary, IT, Govt. of Jharkhand
Dr. Om Vikas	-	Senior Director, Min of IT, Govt. of India
Dr. H.C. Pande	-	Vice-Chancellor (Emeritus) BIT, Mesra
Dr. S.K. Mukharjee	-	Vice-Chancellor, BIT, Mesra
Dr. Ramjee Prasad	-	AAU
Prof. S. C. Goel	-	BIT
Dr. Susan Vonsild	-	AAU
Dr. Ignas Niemegeers	-	DUT
Dr. Ernestina Cianca	-	URTU
Dr. Suhartono Tjindronagore	-	ITB
Dr. Andriyan Bayu Suksmono	-	ITB
Mr. Mahendra Kumar	-	CGM, BSNL, Jharkhand
Dr. V. Paul	-	GM, BSNL, Jharkhand
Mr. N.K. Bhoi	-	GM, BSNL, Ranchi
Mr. D.N. Choudhary	-	AGM, BSNL, Jharkhand
Mr. K.K. Joardar	-	Commandant, CRPF
Mr. A.R. Jha	-	CCPL, Kolkata
Mr. Arpan Pal	-	TCS, Kolkata
Mr. Reddy	-	Tata Telecom, Bangalore
Mr. Sanjay Diwan	-	Tata Telecom, Delhi
Mr. Praveen Kumar	-	Tata Telecom, Kolkata
Mr. Vikaramjit Das	-	Falcon Enterprises, Mumbai
Mr. Anil Sharma	-	Falcon Enterprises, Mumbai
Siva Kumar	-	Institute of Technology, Orissa
Mr. Vasant Kumar	-	GIT, Noida
Mr. Subroto	-	IBM
Mr. Deepak Singh	-	DRDO, SSPL, ND
Dr. Vinod Kumar	-	Alkatel, France
Dr. S.L. Maskara	-	IIT Kharagpur
Dr. R.Garg	-	IIT Kharagpur
Dr. K. Giridhar	-	IIT Madras
Dr. U.B. Desai	-	IIT Bombay

#### **E. Publication by faculty :**

##### **I. International Journal :**

1. V.R. Gupta & N. Gupta, "Characteristics of a Compact Microstrip Antenna", Microwave and Optical Technology Letters, Vol. 40, No. 2, Jan. 2004, pp 158-180.
2. S.K. Ghorai and S. Narayan, "Data Dependent System Approach for Strain Measurement in Interferometric Fiber Optic Sensor", Optics & Laser Technology (Accepted 2004).
3. D.K. Gupta & N. Gupta "Stochastic Technique for Vehicle Routing Problems", International Journal of Computer Mathematics, Jan. 2004, pp. 1-9.

##### **II. International Conference Papers:**

1. V.R. Gupta and Nisha Gupta, "Design of a Circularly Polarized Microstrip Antenna – An Optimization Approach", 48<sup>th</sup> Congress ISTAM, IIT Kharagpur, an International meet held at BIT, Mesra, Ranchi, Dec. 2003.
2. Nisha Gupta and V.R. Gupta, "Characteristics of a Compact Microstrip Antenna", CODEC-2004, An International Conference held at Kolkata, Jan. 2004.
3. M.K. Jha, Anand Mohan & S.C. Goel, "Neural Network Based Trunk Dimensioning in telecommunications Traffic Engineering", International Conference on COMMUNICATIONS, DEVICES AND INTELLIGENT SYSTEMS (CODIS 2004, 8-10 January, Kolkata), Department of Electronics and Telecommunication Engineering, Jadavpur University, Kolkata-700032, India pp 9-12.

#### **F. National Conference Papers :**

1. B.B.Pal, D. Pal & B.N. Das, "A Biomedical Electronics Converter used at Analog to Digital Interface for Instrumentation system", Conf. NSMAA 2003 at IIT (Chennai) on 22.12.2003.
2. B.B. Pal, D. Pal & B.N. Das, "Some Important Biomedical Electronic Analog Filter with Digital Control Arrangement", Conf. NSMAA-2003.
3. J.S. Roy, "Microstrip Yagi array Antenna", Intl. Conf. On Microwave Antennas, Propagation and Remote Sensing, Jodhpur, Dec. 2003.
4. J.S. Roy, "Prioritized and Nonprioritized Handoff in Mobile Communication", CODIS-2004, Jan. 2004, Kolkata.
5. M.K. Jha, Anand Mohan & S.C. Goel, "Blocking Probability Analysis of Multistage Interconnection Networks & Their Performance Improvement Using Redundancy", National conference on "Modern Aspects of FACTS and Its Applications" (FACTS- 2003) 29-30 August 2003, Department of Electrical and Electronics Engineering, Kumaraguru College of Technology, Chinnavedampatti, Coimbatore.
6. M.K. Jha, Anand Mohan & S.C. Goel, "Analysis of MIN for Multicast Communication", National Seminar on cutting Edge Technologies in of ECE, Sant Longowal Institute of Engineering and Technology, Longwal-148106, Sangrur, Punjab.

#### **G. Seminar/Symposium/Short-term courses attended by faculty members.**

1. B.B. Pal, - Conf. NSMAA 2003 at IIT (Chennai) on 22.12.2003.
2. J.S.Roy, - Intl. Conf. On Microwave, Antennas, Propagation and Remote Sensing, Jodhpur, Dec. 2003.
3. Vibha Rani Gupta, 48<sup>th</sup> Congress ISTAM, IIT Kharagpur, an International meet held at BIT, Mesra, Ranchi, Dec. 2003.

4. P.K. Upadhyay, AICTE Short term course on Information Security at IIT Delhi (under QIP) 15<sup>th</sup> Dec. 3-19 Dec. 2003.
5. V.K. Singh, Workshop at IIT Bombay in field of Element of Microelectronics from 17-20 Dec. 2003.
6. J. Sahay, AICTE Short tem course on Information Security at IIT Delhi (under QIP) 15<sup>th</sup> Dec. 3-19 Dec. 2003.
7. Sanjeet Kumar, AICTE Short term course on Information Security at IIT Delhi (under QIP) 15<sup>th</sup> 3-19 Dec. 2003.
8. N. Chattoraj, "Application of Soft Computing Techniques in Power System" (Jan. 13-25, 2003).
9. Dr. SK. Ghoraï, Indo-Itallian Work shop on Photonics Technologies, Networking and Applications, 29 March, 2004 at IIT, Kharagpur.
10. M.K. Jha. International Conference on Communication Devices and Intelligent Systems (CODIS-2004, 8-10 Jan, Kolkata) Deptt. of ECE, Jadavpur University, Kolkata.
11. N. Gupta, CODEC-2004, An International Conference on Computers & Devices for Communication January 1-3 at Kolkata.

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## DEPARTMENT OF HOTEL MANAGEMENT

The Department of Hotel Management & Catering Technology was established in January-2003. Department offers Bachelor's Degree in Hotel Management & Catering Technology in order to shape future hospitality professionals. Department is in stage of Development –Various laboratories like Food Production Lab, Food and Beverage Services Lab, Accommodation Operation Lab etc. are in progress.

A twenty six room guesthouse with attached kitchen & dinning facilities is managed by the department so as to provide hands on practical exposure to the students departmental library is also maintained so as to provide accessibility to wide range of Hospitality & Tourism related books & Magazines to the students & staff members. Within a year of existence Department enjoys a good name in the field of hospitality in the state of Jharkhand. Department has provided hospitality services to H.E. Governor of Jharkhand, Chief Minister and other important dignitaries.

Department has also been providing support in the hospitality services for the Institute as and when required like Conferences, BITOTSAV etc in the Mesra premises. Students have also been taking keen interest in various activities celebration of completion of one year of year department was organized by the student since the month of January 2004. Recently the department on topic "hospitality & tourism" organized a meet on 21<sup>st</sup> day of March 2004. The Meet focused on three key issues- career opportunities in the field of Hospitality in the Jharkhand state.

Students from all parts of the country are learning in the department. At present the department has a strength of Fifty-Six students in Second & Third Semester of Four year Bachelor of Hotel Management & Catering Technology Programme.

**Degree/Diploma Offered :** Four Year Bachelor Degree in Hotel Management and Catering Technology.

**Faculty Position :** Lecturer – 3, Associate Lecturer – 2, Chef – 1.

**Number of Students Enrolled with the Department :** 56

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

- Providing hands on practical exposure to the students- by maintaining & upgrading 26 Rooms guesthouse.
- Provided hospitality services to H.E Governor of Jharkhand, Chief Minister and other Important dignitaries.
- Development of Various laboratories like Food Production Lab, Food and Beverage Services Lab, Accommodation Operation Lab etc. are in progress.

#### **A. Seminar/Conference conducted by the Department :**

- Department organized a meet on topic "hospitality & tourism" on 21<sup>st</sup> day of March 2004. The Meet focused on three key issues –Promotion of Tourism in the state of Jharkhand, safety & Security issues related to Jharkhand Tourism & Career opportunities in the field of Hospitality in the Jharkhand State.

#### **B. Publication by Faculty Members :**

- Presented and paper accepted for publication on Effective training methods in Hospitality & Tourism with special reference on simulation in National Symposium By

Sree Sarda Ma Educational Trust & Saurashtra University Rajkot. By Mr. Ashish Dahiya (lecturer HMCT BIT-Mesra & Dr. Sonia; Director SNICE Institute Indore).

- Presented & Paper accepted for publication on Role of Housekeeping in our Modern life organized VIHTM-Rajkot. By. Mr. Ashish Dahiya (Lecturer HMCT. BIT-Mesra).

**C. Seminar/Short term courses attended by faculty members**

- Mr. Sanjay Kumar & Mr. Priti Ranjan Sahoo attended a short-term course on Heritage Management Organized by Department of Architecture, BIT-Mesra.

**D. Award/Nomination of Faculty by Important Organizations :**

Department Membership By-Federation of Hotel & Restaurant Association of East India (In Process.)

**E. Student Activities :**

- Celebration of Foundation day of Department of Hotel Management- Jan. 2004.
- Organized a meet on Hospitality & Tourism in March 2004.

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## DEPARTMENT OF INFORMATION SCIENCE

The Department of Information Science continued its growth with the changing environment. More emphasis was put on the course curriculum development with the need of time.

Research and development activities continued in the Department which resulted in the award of Ph.D. to the Department's faculty member Bhaskar Karn in January 2004. As far as faculty positions are concerned one more faculty member joined in the Department as Associate Lecturer in July 2003.

Dr. Bhaskar Karn presented the paper titled "Curriculum development – An Essay" in the workshop organized on Curriculum Development, organized by ISTE.

**Degree/Diploma Offered :** M.Sc. Degree in Information Science, Ph.D.

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

**Number of students enrolled :** 65

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## DEPARTMENT OF MANAGEMENT

The department of Management was founded in 1979 to impart holistic management education to potential young managers. Special emphasis remains on nurturing personal integrity and social responsibility. With its massive infrastructure base of well equipped library and computer labs, seminar and conference rooms, the Department of Management facilitates better contemporary management education to the students. It is committed to trigger-off the scholars to become managers, leaders, innovators, challengers and continuous learners.

The department has its own highly qualified and experienced core faculty besides adjunct faculty drawn from the different departments of BIT. The department has been accredited by National Board of Accreditation, AICTE and was given 'B' grade. The MBA curriculum has been carefully designed to balance theory with practice as one of the most important developmental activities of the department. The two year full-time programme consists of forty-two paper spread over six trimesters. During the first trimester core courses cover areas of General Management and present an overview of the specialization papers. In the fourth and fifth trimesters, dual specialization courses are offered. In the sixth trimester, along with core courses students opt for sectoral specialization. The students undertake one project each in their functional area of specialization and their sectoral specialization. The students also undergo a two month intensive on job training in industries during their summer vacation. It gives them the required exposure to real life work environment. Students are also exposed to one foreign language other than English. It helps in their better placement in corporate world.

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

**Faculty Position :** Professor – 1, Readers – 4, Senior Lecturer – 1, Lecturer – 4, Associate Lecturer – 1.

**Number of Students :** 85

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

- MoU signed with Ningbo University, China for fruitful academic interactions.
- Collaboration with Alliance de Francaise for training students in French language and culture.
- Membership of European Case Cleaning House (ECCH) for teaching.

### **Research**

- Mrs. S. Shivani, Lecturer, BIT, Mesra – Submitted her Ph. D. thesis entitled, "Sociocultural Content of Entrepreneurship in India : A Study of Enterprenesurship in India".
- Mrs. Asha Prasad, Reader, BIT Noida Centre – Submitted her Ph.D. thesis entitled, "Electricity Sector Reforms in India and Human Resource Adjustment Issues".

### **Ph.D. Fellows Produced**

- Mr. Debangshu Chakraborty produced his thesis under the guidance of Dr. S.K. Mukherjee. The title of his research was "Leadership and Motivation: A Critic of Western and Eastern Thoughts".
- Mr. P.K. Chatterjee produced his thesis under the guidance of Prof. Awadh Prasad. The title of his research was "Development of Strategic System for Engineering Consultancy Services in the Domain of Industrial Marketing".

**A. Ongoing Project :**

Project Title	Sponsor	Principal Investigator/Status
An investigation of reasons for low level of women 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 medium scale suppliers.	DSIR	Dr. S.K. Mukherjee
Industry Institute Partnership Cell.	AICTE	Dr. A.M. Agrawal
Professional Education and its impact on Industrialization in Tribal Region – Need for Government Support for creation of Infrastructure (Jharkhand & Chattisgarh).	Min. of Tribal Affairs	Dr. A.M. Agrawal

**B. Project completed during the year 2003 –2004 :**

1. Dr. S.K. Bose, "A pronged approach for the Management of NPAs of commercial bank for the development of south Chotanagpur region" sponsored by AICTE.

**C. Publication by Faculty :**

1. Dr. A.M. Agrawal, "Knowledge Management Applicant in Higher Technical Institutions in India" published in Proceedings of IAMOT 2004 held at Florida, USA during April 3-7, 2004.
2. Dr. A.M. Agrawal, "Knowledge Management in Higher Technical Institutions", published in Proceedings Managing Knowledge markets in a Global Economy: The Indian Context" in a Conference organized by CSIR during 6-7 December, 2003 in Delhi.
3. Dr. A.M. Agrawal, "Globalisation Challenges and Oppourtunities Response from Indian education Sector", in a Seminar organized by Dept. of Commerce & Management Studies, Andhra University, Visakhapatnam during March 25-27, 2004.
4. Dr. A.M. Agrawal presented an Article in the area of Materials Management entitled, "Effectiveness of Purchasing", a Seminar organized by Indian Institute of Coal Management, Ranchi During March 15, 2004.
5. Dr. A.M. Agrawal co-authored with Mr. Anand Kumar, Article entitled, "Application of Re-Engineering to Indian Sheet Glass Industry" published in Industrial Engineering Journal of the Indian Institution of Industrial Engineering, Mumbai, Vol. XXXIII, No. 3, March 2004.
6. Dr. A.M. Agrawal co-authored with Mr. Anand Kumar, Article entitled, "A Study on Consumer Preference with Respect to the Pouch Packed Milk" published in Alternative, Vol. II, No. 2, April-Sept. 2003.
7. Dr. A.M. Agrawal co-authored with Mr. Vijay Agrawal, "Outsourcing the Magic Mantra of Business" published in Masterstroke of MSM in Inaugural issue, Vol. 1.
8. Dr. A.N. Jha, "Importance of Marketing function in Supply Chain Management" published in Growth, Vol. 31, No. 2, July-September, 2003.



9. Dr. A.N. Jha, "Empowerment of Small Scale Sector – A Challenge Before Jharkhand" published in Xavier Research Journal, Vol. 2, No. 1, Jan-April, 2003.
10. Dr. A.N. Jha presented an Article entitled, "A Financial Approach to Critical Evaluation of Inventory of small scale industries – A case study of Bihar Rubber Co. Ltd." In VII Annual International Conference organized by Indian Institute of Management, Indore during December 19-21, 2003.
11. Dr. S.K. Bose reviewed the book entitled, "An Introduction to Management – Its Principles and Practice by Prof. S.S. Chatterjee, published in Alternative, Vol. III, No. 1, October 2003 to March 2004.
12. Dr. S.K. Bose, "Ethical Issues of the modern leaders: A managerial perspective" published in Alternative, Vol. III, No. 1, October 2003 to March 2004.
13. Dr. Manju Bhagat, "Conceptual View of Organisation Climate" in Alternative, Vol. III, No. 1, issue : October 2003 to March 2004.
14. Dr. R.N. Bhagat presented a paper entitled, "Empowerment of Indigenous people to meet effective self-governance" in International Conference organized by XV ICAES 2K3 at Florence, Italy during 5-12 July, 2003.
15. Mr. Vijay Agrawal presented a paper entitled, "Implications of Globalisation of World Economy : Strategy for Growth and Internationalisation" in the International Conference on 'Mid-size Enterprises – Opportunities and Challenges in a Global Economy, held at New Delhi during Feb. 19-20, 2004.
16. Mr. P.C. Jha, Article entitled, "Rural Industrialisation of Bihar – A Case Study of Village and Small Scale Industry", in Alternative, Vol. II, No. 2, April – Sept. 2003.

#### **Seminar/Symposium/Short term Course Attended by Faculty Members :**

1. Dr. A.M. Agrawal, Participated in a UGC sponsored seminar at Andhra University in March, 2004.
2. Dr. A.M. Agrawal, attended a National Seminar organized by Indian Institution of Materials Management at IICM, Ranchi in March, 2004.
3. Mr. S.C. Mishra, Attended a Short Term Course on Quality and Productivity Tools for Library Management at IIT, Kharagpur during June 21-25, 2004. He delivered a presentation in the area of "Uneven Traffic Flow to Circulation Counters" with Mr. P.C. Sahu of DRDO, Orissa.

#### **Award/Nomination of Faculty :**

1. Dr. A.M. Agrawal nominated to 1. the panel of NAAC, UGC Expert Committee. 2. Visitor's minee to Selection Committee of Assam University. 3. Member Distance Education Council (DEC) of India.

#### **Students Activities :**

1. A three day Management Fest, SAMAAGAM was organized during 27-29<sup>th</sup> Feb. 2004. It was organized under the aegis of the executive Club of the students. Students from over 10 outstation institutions participated in it. Seminars, Industrial tours, guest lectures are also organized by them.

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## DEPARTMENT OF MECHANICAL ENGINEERING

The Department of Mechanical Engineering has initiated a research Collaboration scheme with Larsen & Toubro Pvt. Ltd. (Heavy engineering division) and the Memorandum of understanding (MOU) has been signed between L & T and the Institute on 27 April 2004. Under this MOU, following three provisions have been made:

- (i) **Henning Award** : Larsen & Toubro Ltd. Has constituted an Annual Henning Award for Technical Excellence for the best two technical papers related to the fields of L & T, for the B.E. (Mech/Prod) students of the Institute. The First prize consists of Rs. 12,000/- in cash and a certificate of merit and the second prize of Rs. 8000/- in cash and a certificate of merit.
- (ii) Every year L&T will select some P.G. students of the Department of Mechanical Engineer who will carry out live industrial problems of L & T as their P.G. thesis work and depending upon the merit of their thesis work, they will be given job opportunities in L& T.
- (iii) Faculty members will regularly interact with L & T for industrial consultancy. This will be a source of revenue generation for the Department/Institute as well.

The Department has established a Materials Research Laboratory where research works on Smart Mechanical System are under progress. Research grants from UGC and DST have already been received for the research works in this laboratory.

The Department has initiated four major research projects for the state of Jharkhand during the year under report. These are (a) Solar – Biomass hybrid cold storage cum Power Generation Unit for the Agro-products in Jharkhand. (b) Bio-mass Reactor Unit. (c) Animal Electricity. (d) Hydrogen Energy.

Under the scheme of rural technology sponsored by KVIC (Govt. of India) the Department has initiated solutions for improving the cottage industries of Jharkhand.

**Degree/Diploma Offered** : B.E. (Mechanical Engineering), M.E.(Heat Power), M.E. (Design of Mechanical Equipment).

**Faculty Position** : Professor – 2, Reader – 6, Senior Lecturer –1, Lecturer – 16.

Associate Lecturer –1.

**Number of Student enrolled with Department** : Undergraduate – 352, Postgraduate – 11.

### Academic Innovations, Research & Development activities :

1. During the year under report, research collaborations have also been initiated with IRIMEE for solving technical problems of the Ministry of Railways.

#### A. Ongoing Project :

Name of the Investigator	Title of the project and duration	Amount sanctioned	Funding Agency
Dr. Ashok Mishra	Correlation of Micro-structural characteristics with stress-induced Magnetic and electro-magnetic Effects in Metals (April 2001- March 2004).	Rs. 5.18 Lakhs	UGC

Dr. Ashok Mishra	Engineering of Smart Materials through Mechano emission characteristics (Nov. 2002- Nov. 2005).	Rs. 15.7612 Lakhs	DST
Dr. Arbind Kumar (Co-investigator)	Rural Technology	Rs. 20.00 Lakhs	KVIC (Govt. of India).

**B. Project submitted during the year 2003- 2004 :**

1. Development of Infrastructure For Smart Mechanical Systems Under the scheme of FIST, DST Govt. of India. Rs. 69.40 Lakhs.
2. Hydrogen energy and Design Simulation & Mechatronics under the scheme of SAP DRS Govt. of India. Rs. 49.95 Lakhs.
3. Development Of Non-Edible Vegetable Oil As A Legal Motor Fuel For Power Generation And Powering Agro-Based Industries. Rs. 24.53 Lakhs. Ministry of Non-Conventional Energy, Govt. of India through JREDA, Jharkhand.

**C. Seminar/Conference/Short term course conducted by the Department :**

During the year 2003- 2004, the Department organized the following seminars/short term course programmes :

- (a) AICTE-ISTE sponsored short term Training Programme on "Present Trends and future Prospects of Non-Conventional Energy in Jharkhand – Problems and challenges" (June 2003).
- (b) One day Technical Seminar on "Institute – Industry Interaction" for crusher Technology in collaboration with Larsen & Toubro Ltd. (Nov. 2003).
- (c) One day seminar on "Sustainable Energy Development in Jharkhand" in collaboration with Jharkhand renewable Energy Development Agency (Jan. 2004) inaugurated by His excellency Governor of Jharkhand.
- (d) One day Seminar on "Henning Award for Technical Excellence" in collaboration with Larsen & Toubro Ltd. (Heavy Engineering Division), Kansbahal (April 2004).

**D. Publications by faculty :**

**I. Papers/articles published by teachers in learned journals and monographs/books /published.**

1. Ashok Misra and Arbind Kumar, "Some basic aspects of electromagnetic radiation during crack propagation in metals", International Journal of Fracture, pp. 0-15, (in press).
2. Arbind Kumar and Ashok Mishra, "Shape anisotropy of magnetic field generation during tensile fracture in steel", J. Magnetism and Magnetic Materials (in press).
3. Arbind Kumar, Rajeev Kumar and Ashok Mishra, "Effect of rolling direction, notch-depth ratio and thickness on electromagnetic radiation during crack propagation in Metals", Metallurgical and materials Transactions A (Communicated).
4. Arbind Kumar and Ashok Mishra, "Effect of Materials, shape and physical properties on electromagnetic radiation during crack propagation in Metals", Journal of Materials Science (Communicated for publication).

## **II. Paper Presented in the International/National conferences by the Faculty Members of the Department :**

1. B. Srilakshmi and Ashok Mishra, "Effect of Surface coating on the Emission of Electromagnetic Radiation during crack Propagation", International conference on Surface Engineering and Heat treatment, ASTRA – 2003, Hyderabad (Nov. 3-6, 2003).
2. A.N. Sinha, Naveen Agrawal and S.C. Roychoudhary, "Value Engineering of Lubricants used in HEMM through condition Monitoring", National Conference on Value Engineering – A Fast track to profit Improvement & Business Excellence (B.I.T. Mesra, Ranchi, July 2003).
3. A.N. Sinha and Richa Pandey Ojha, Value addition through Reverse Engineering for the custom Fit products of Human Body Parts", National conference on Value Engineering – A Fast Track to Profit Improvement & Business Excellence (B.I.T. Mesra, Ranchi, July 2003).
4. A.N. Sinha and Richa Pandey Ojha, "Myogenic Control for Prosthetic Devices", National Conference on Emerging Trends in Mechanical Engineering", e-time 2004 (KDKE Nagpur, Feb, 2004).
5. A.N. Sinha, Richa Pandey Ojha & B.S. Choudhary, "Desktop Digitization of Human Body Parts for its CAD modeling through Reverse Engineering Technique", All India Seminar on Advances in Metrology for Manufacturing Technology, (CMRI, Durgapur, Feb. 2004).
6. A.N. Sinha "Design Related Mechanical Engineering curriculum – A paradigm shift", National Workshop on curriculum Development for Technical Education (B.I.T. Mesra, Ranchi, April 2004).

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

1. B.S. Choudhary, "Strategic Planning in curriculum Design", Technical teacher's Training Institute, Calcutta ( 7.7.2003 to 19.12.2003).
2. B.S. Choudhary, "Training on CNC Machines", Technical Teacher's Training Institute, Calcutta ( 8,12,2003 to 19.12.2003).
3. B.S. Choudhary, 13<sup>th</sup> National Conference of Indian Society of Mechanical Engineers, I.I.T. Roorkee (Dec. 30-31, 2003).
4. B.S. Choudhary, 17<sup>th</sup> National Convention of Aerospace Engineers, B.I.T. Mesra (Nov. 3-5, 2003).
5. B.S. Choudhary, All India Seminar on Advances in Metrology for Manufacturing Technology, Institution of Engineers, CMRI, Durgapur (Feb. 7-8, 2004).
6. B.S. Choudhary, "National Workshop on "Emerging challenges & limitless opportunities in Power sector in Jharkhand", Institution of Engineers, Ranchi Chapter (2003).
7. A.N. Sinha, Short term course on "Genetic Algorithm for Engineering Optimization", I.I.T., Kanpur (April 7-9, 2004).
8. A.N. Sinha, Two day programme on "Rapid Prototyping – Application & Demonstration", I.I.T., Kharagpur (May 17-18, 2004).

### **F. Award/Nomination of faculty by important organization :**

1. Ms. B. Srilakshmi, a research scholar in the Department of Mechanical Engineering, received the "Financial Award" from ASTRA-2003 for the International Conference on Advanced Surface Engineering & Heat Treatment held at Hyderabad in Nov. 2003.

2. Dr. Ashok Misra, Member of International Advisory Board of "Manufacturing Technology & Research – an International Journal".
3. Dr. Ashok Misra, Member of Selection Committee for "Jharkhand Engineering Excellence Award" (Institution of Engineers India).

**G. Students Activities :**

1. Following students were presented the **HENNING AWARD** (Cash & Certificate) for the year 2003- 2004 on 27 April 2004. (a) Sri Biswajeet Mohanty & Sri Manpreet Singh Parmar: First Prize. (b) Sri Rajiv Kumar : Second Prize.
2. Following P.G. students have been selected by L & T under the MOU for the year 2003 – 2004 : (a) Sri P.R.P. Apparao (b) Sri. Anil Kumar Sharma
3. The Department has constituted a Mechanical Engineering Society (MES) for the students during the year under report. Under the purview of MES, students have been entrusted with creating awareness in society especially in the disciplines of solar energy, Bio-mass energy and energy conservation.
4. During the year 2003- 2004, the Department has introduced "Certificate of merit" for the best project work at B.E. (Mechanical) final year level.
5. In order to encourage creativity & originality among B.E. level students, one project on "Design of Folding Walder for Polio Patients" has been assigned. This project will be sponsored by some Leading Manufacturing Companies at Mumbai.
6. Students at B.E./M.E. level have interacted with reputed industries for live industrial projects.

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## DEPARTMENT OF PHARMACEUTICAL SCIENCES

Established in 1972 and during the past 32 years of its existence, the students of this department has made themselves well known for their Alma Mater worldwide. The department offers academic programmes in the Undergraduate and Postgraduate levels as Ph.D. in diverse area of Pharma Science. The courses are recognized by the Pharmacy Council of India and AICTE. These courses are such designed so as to create professional in Pharmaceutical Sciences namely in Biopharmaceutics, Synthetic Drugs, Natural Products, Herbal Pharmaceuticals, Pharmacology, Biochemical Pharmacology, Toxicology etc. The syllabi of the course are updated from time to time to incorporate recent developments achieved in these fields in National and International Scenario and to cater to the requirements of the Industries and various Academic bodies. The department has state-of-the-art laboratories for both teaching and research purposes. It also maintains a "Medicinal Plant Garden" which spreads over 10 acres of land on the campus and houses more than 200 plants. The training at garden is an integral part of the curriculum and the various species of the medicinal plants used by the students for their projects and research work generates interest in the subject. In addition, a number of entrepreneurs have been trained in processing and cultivation of medicinal plants. Department also maintain well-equipped animal house which is also accredited under the respective act.

The department has well-devoted and qualified team of faculty members who are consistently involved in various research activities. They are successful in getting a number of Research project from organizations like UGC, AICTE and DST. More project are on the anvil and it is expected that this would be a continuous process in the years to come. To meet challenges of Pharmacy Professional and Industry, the department is introducing concept of specialization at under graduate level itself.

The department currently offers courses leading to B. Pharm., M. Pharm in 5 specializations and Ph. D. It also provides necessary support to department like Hotel Management & Catering Technology, Biotechnology, Biomedical Instrumentation and Environmental Sciences and Engineering. Department has plan to introduce Diploma in Pharmacy Programme as well as M. Pharm. in two more specialization namely Quality Assurances and Clinical Pharmacy. In addition the department is providing necessary support to Diploma and Degree level programme in allied sciences like Medical laboratory Technology.

To meet the requirements of the department to accommodate its new programme and to accommodate B. Pharm students with an intake of 60, new spacious building has been planned which shall be ready within a year's time.

**Degree/ Diploma Offered :** B. Pharmacy, M. Pharmacy with specialization in Pharmaceutics, Pharmaceutical Chemistry, Pharmacology, Pharmacognosy, Pharmaceutical Biotechnology, Ph.D. Programme in above specialization.

**Faculty Position :** Professor –3, Reader –6, Senior Lecturer – 1, Lecturer – 9.

**Number of students enrolled with department :** B. Pharm. – 140, M. Pharm. - 50

## Academic Innovation, Research & Development Activities :

### A. Ongoing Projects :

Sl. No.	Title	Area	Funding Agency	Amount
1.	Preparation of Edible Grade Pongamia pinnata Seed Oil and its Toxicological studies for Possible Utilization in Pharmaceutical Industry	R & D	UGC	5.0
2.	Modernization & Removal of Obsolescence of Laboratories (MODROB)	MODROB	AICTE	10.0
3.	Studies on Patent Antiinflammatory Agents from Natural Sources	R&D	UGC	5.81
4.	Design and Evaluation of Transdermal drug delivery of selected drugs	TAPTEC	AICTE	10.00
5.	Micro computerized Identification of indigenous drugs & development of standards	TAPTEC	AICTE	12.00
6.	Thermodynamic Approach to Drug Excipient interactions	R&D Major	UGC	5.85
7.	Transdermal delivers of selected drugs : Design, Invitro & In-vivo	R& D	UGC	7.08
8.	Ethno botanical & Phytochemical survey of medicinal plant of South Chotanagpur	TAPTEC	AICTE	5.35
9.	Technical back up to the village industries on medicinal plant, their processing & their products.	R&D	KIVC	20
10.	Modernization of Physiology and Pharmacology Laboratory	MODROB	AICTE	13.65

### B. Project sanctioned during the year 2003-2004 :

Sl. No.	Title	Funding Agency	Duration project	Sanctioned Amount (in Lakh)
1.	Design of Evaluation of transdermal drug delivery of selected drugs.	AICTE	3 years	10
2.	Microcomputerized identification of indigineous standard.	AICTE	3 years	12
3.	Thermodynamic Approach to Drug-Excipient Interactions.	UGC	3 years	5.85
4.	Technical back up for Rural Industries.	KVIC	3 years	20.00
5.	Modernization of Physiology and Pharmacology Laboratory.	MODROB	AICTE	13.64

**C. Project completed during the year 2003-2004 :**

Sl. No.	Title	Funding Agency	Duration project	Sanctioned Amount (in Lakh)
1.	Ethnobotanical study of antidiabetic plants of Ranchi District.	AICTE	3 years	5.0
2.	Standardization & Quantity control of some herbal drugs recommended by WHO for reinvestigation.	UGC	3 years	7.0

**D. Project submitted during 2003-2004 :**

Sl. No.	Title	Funding Agency	Duration project	Amount
1.	Synthesis and study of new nitro imidazole analogs.	AICTE	3 years	9 Lakhs
2.	M.Tech. Programme in Ethnopharmaceuticals under Innovative Programme Scheme	UGC	5 years	1 Crore

**E. Seminar/Conference/Short-term course conducted by the department.**

Department of Pharm. Sciences organized a AICTE sponsored workshop cum training program on Cultivation & Utilization of Medicinal Plants from March 03-09, 2003.

**F. Publication by Faculty :**

1. Jha, S. "Standardization of *Gymnema sylvestre* with reference to gymnemagenin by high performance thin layer chromatography". Photochemical analysis (accepted).
2. Jha, S. "Standardization of *Gymnema sylvestre* R.Br. using gymnastrogenins as reference", Indian Journal of Pharm. Sciences P 227-229 (will be published in March-April 2004)".
3. Ganguly, S. and Razdan, B.K. "Synthesis and pharmacological activities of some 2-methyl-4 (5) Nitroimidazoles", Indian Drugs, Mar., 2003, 40 (3), 151-155.
4. Ganguly, S. Singh, S.P. and Chandra, R. "Synthesis and Antimicrobial activity of some new 2-methyl-5 nitroimidazole derivatives", Journal of Indian Chemical Society (paper accepted).
5. Ganguly, S. and Ghosh, Subrata "Computer Related Injuries are you next", Indian Journal of Hospital Pharmacy (paper accepted).
6. Mazumder, Rupa, Distidar, S.G., Basu, S.P., Mazumder, Avijit and Kumar Sanjay, "Emergence of *Mesua ferrea* Linn. Leaf extract as a potent bactericide", Ancient Science of Life XXII (4), 2003.
7. Mazumder, Avijit, Saha, B.P., Basu, S.P. and Mazumder, Rupa, "Antibacterial activity of methanolic extract of leaves of *Lagerstroemia parviflora*" Indian Journal of Natural Products, Vol. 19, 20-23, 2003.



8. Mazumder, Avijit, Saha, B.P., Basu, S.P. Mazumder, Rupa and Prasad, S.M., "Study on the potentially of extract of Lagerstroemia parviflora to control leaf crinkle in Urd bean", Journal Herbal Pharmacotherapy, 2004. (Accepted).
9. Mazumder, Avijit, Saha, B.P., Basu, S.P., Mazumder, Rupa., and Mandal, R. "Study of sedative-hypnotic activity of leaf extract of Lagerstroemia parviflora" Advances in Pharmacology & Toxicology, 2004 (Accepted).
10. Sasmal. D., Mazumder, Mitra. P, "Comparative assessment of antimicrobial activity of Citrinin and the crude extract of Fusarium moniliformae", Indian Pharmacist Sept. 2003.
11. Verma, P.R.P. and Razdan, B.K. "Studies on leucaena teucociphaia seed gum Emulsifying Properties" J. Sci. Ind. Res., 62, 198-206, 2003.
12. Verma P.R.P., Saran, Neha, & Jha L. L. "Release Profile of Flurbiprofen from Ointment Bases through cellulose acetate". The Indian Pharmacist, 11, 57-59, 2003.
13. Verma, P.R.P. Kulshrestha, N., John, S. and Choudhary, S. "Studies on commercial Tablets of chlorpropamide, Tinidazole and Tetracycline" The Indian Pharmacist, 12, 63-66, 2003.
14. Verma, P.R.P. and Razdan, B.K. "Evaluation of Leucaena leucocephala seed Gum as suspending Agents in sulphadimidine suspension" Indian Journal Pharm. Science, Nov-Dec., 665-669, 2003.
15. Verma S.M., Arora, H, and R, Dubey. "Anti-inflammatory and sedative hypnotic activity of the methanolic extract of the leaves of Mentha arvensis" Ancient science of life, XXIII (2) 95-99, 2003.

#### **Research Paper Presentation :**

1. Ganguly S., and Razdan B.K., "Synthesis and study of new I substituted imidazole analogs presented" in 55<sup>th</sup> Indian Pharmaceutical Congress held in Chennai from Dec. 19-21, 2003.
2. Kumar Jayaram K., Bhatnagar S.P., Sarkar Biswatrish, "Pharmacists in continuous food hygiene and sanitation awareness education (cfhsae) – an important aid in the implementation of health policies in Jharkhand proceeding" at 55<sup>th</sup> IPC, on Dec. 19-21 2003, at Chennai.
3. Kumar Jayaram K., Bhatnagar S.P., Kumari Nishi, Srivastav Pratika, "Continuous health cognizance through clans – A bridge between national health care programs and people of Jharkhand proceeding," at 55<sup>th</sup> IPC, on Dec. 19-21, 2003.
4. Kumar Jayaram K., Mazumder Avijit, Mazumder Rupa, and Sahay Juhi, "Assessment of needs of pharmaceutical services in Jharkhand" 55<sup>th</sup> Indian Pharmaceutical Congress, Chennai, Dec. 19-21, 2003.
5. Kumar Jayaram K., Bhatnagar S.P., "Antioxidant constituents against methicillin resistant Staphylococcus aureus from Terminalia chebula proceeding," at National Seminar on Ayurveda for better health and workshop on clinical application of Rasa shastra on Jan 24<sup>th</sup> –25<sup>th</sup>, 2004 at Jamunagar.
6. Mazumder Avijit, Mazumder Rupa, Jayaram Kumar, K., and Sahay Juhi, "Assessment of needs of pharmaceutical services in Jharkhand" Proceeding of 55<sup>th</sup> Indian Pharmaceutical Congress, Chennai, Dec. 19-21, 2003.
7. Mazumder Avijit, Mazumder Rupa, Saha B.P., and Basu S.P., "Studies on evaluation of in vitro antimicrobial potential of bark of Lagerstroemia parviflora Roxb," Proceeding of 55<sup>th</sup> Indian Pharmaceutical Congress Chennai, Dec., 19-21, 2003.

8. Mazumder Avijit, Mazumder Rupa, & Basu S.P., "A survey on the prevalence of various diseases & the factors affecting in the capital of Jharkhand," Proceeding of 55<sup>th</sup> Indian Pharmaceutical Congress Chennai, Dec., 19-21, 2003.
9. Mazumder Avijit, Kumari Sangita & Mazumder Rupa, "A Comprehensive study of the diseases and prescription pattern in the respiratory tract infection (RTI) in the newly formed state of Jharkhand" Proceeding of 55<sup>th</sup> Indian Pharmaceutical Congress Chennai, Dec., 19-21, 2003.
10. Mazumder Avijit, Jagnath, S., Mazumder Rupa. Basu S.P., Saha B.P., and Mandal R., "A study on potentiation of pentobarbitone induced sleeping time by Lagerstroemia parviflora Roxb", Proceeding of National Seminar on Ayurveda for better health and workshop on clinical application of Rasa Shastra, Jamnagar Jan., 24-25, 2004.
11. Mazumder Rupa, Mazumder Avijit, Mandal R., Basu S.P., and Dastidar S.G., "Studies on phytochemical screening and in vitro antifungal activity of the whole flower of Mesua Ferrea Linn." Proceeding of National Seminar on Ayurveda for better health and workshop on clinical application of Rasa Shastra, Jamnagar Jan. 24-25, 2004.
12. Verma P.R.P. and Gupta Minakshi., "Anti-inflammatory Activity of Meloxicam Gel formulated with varying concentrations of carbopol 941 and carbopol 940 NF" Proceeding of 7<sup>th</sup> National Conference of Indian Society of Chemist and Biologist, CDRI Lucknow Dec., 2003.
13. Verma P.R.P., and Razdan B.K., "Evaluation of Leucaena leucocephala seed Gum in Ibuprofen Tablet: I. Disintegrant properties" Proceeding of 7<sup>th</sup> National Conference of Indian Society of Chemist and Biologist, CDRI Lucknow Dec., 2003.
14. Verma P.R.P., and Razdan B.K. "Evaluation of Leucaena leucocephala and Gum II Mechanism of action as Disintegrant in Ibuprofen Tablet" Proceeding of 7<sup>th</sup> National Conference of Indian Society of Chemist and Biologist, CDRI Lucknow Dec., 2003.
15. Verma S.M. Jhingran Ruchir Gupta, Ritu Kumari, Soni Amrisha "Premna integrifolia Phytochemical studies on root extract and its anti-inflammatory action" 55<sup>th</sup> Indian Pharmaceutical Congress, 2003.
16. Verma S.M., KA.M. Diwan Md., and Khani Lata, "Anti-convulsant sedative – Hypnotic and Anti-microbial activity of some Benzimidazole thiosemicarbazones" 7<sup>th</sup> National Conference of Indian Society of Chemists and Biologists CDRI, Lucknow at Agra Dec., 2003.
17. Verma S.M. Khani Lata, Nag Jaita, Prakash Jayshree, "Nutraceutical and Herbal Remedies: Emerging trends in Indian Medicinal Plants" National symposia: Emerging trends in Indian Medicinal Plants Lucknow, Oct., 10-12, 2003.
18. Sinha, B.N., Kumar, A and Baxi, A.J., "Standardization of an Ayurvedic medicated oil using modern analytical methods", Proc. of 55<sup>th</sup> Indian Pharma Congress, Chennai Dec., 2003.
19. Sinha, B.N., Kumar, A. and Prasad, V.D., "Further Studies on Sphaeranthus amaranthoides", Proc. of 55<sup>th</sup> Indian Pharma Congress, Chennai Dec., 2003.
20. Sinha, B.N., Vadivelan, S., and Manik, "Studies on COX II inhibitors from Natural source", Proc. of 55<sup>th</sup> Indian Pharma Congress, Chennai Dec., 2003.

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

1. Mrs. R. Mazumder and Mr. A. Mazumder attended & presented a number of scientific papers in 55<sup>th</sup> Indian Pharmaceutical Congress at Chennai from 19<sup>th</sup> to 21<sup>st</sup> Dec. 2003.
2. Dr. P.R.P. Verma attended & presented a scientific paper in 7<sup>th</sup> National Conference of Indian Society of chemistry & Biologist, CDRI, Lucknow Dec. 2003.
3. Dr. S. Ganguly attended a workshop on Drug Discovery & Development in New Millenium organized by NIPER, Mohali, Punjab July, 2002.
4. Mr. R. Chandra, Dr. B.N. Sinha, Mr. S. Samanta and Dr. R.N. Gupta acted as resource person for the three day workshop organized by KVIC from 21<sup>st</sup> – 23<sup>rd</sup> Feb. 2004.

**H. Awards/Nomination of faculty by important organization :**

1. Mrs. R. Mazumder was awarded for the paper award in 55<sup>th</sup> Indian Pharmaceutical Congress, Chennai from 19<sup>th</sup> –21<sup>st</sup> Dec. 2003.
2. The biographical profile of Dr. P.R.P. Verma is listed in 21<sup>st</sup> edition of Marquis whos who in the world published in 2003.

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## DEPARTMENT OF POLYMER ENGINEERING

The Department of Polymer Engineering, which was established in 1994, recognizing the potential of this emerging field, has well-established laboratory facilities in the fields of Polymer Synthesis, Polymer Characterization, Polymer Processing and Polymer Product Design & Development and Product Testing. The Department presently offers a 4 year undergraduate programme leading to BE (Polymer Engineering), only of its kind in Eastern India. The Department also has facilities for doctoral research. It is proposed to start ME (Polymer Engineering) shortly, proposal for approval of the course has been submitted to AICTE. In collaboration with BIT Extension Centre Muscat, the Department is conducting two Integrated Industrial Training programme for a company Amiantit Oman, at Muscat. Presently two Extruder Operator courses, one for PVC pipe Production and one HDPE Pipe production are being conducted.

In the present academic year the facilities in the Polymer Characterization Laboratory, Polymer Processing Workshop, Plastics product Design and Development Laboratory and Product Testing laboratories were augmented. The facilities in the Plastics Product Development laboratory includes MCP – HEK Vacuum Casting Machine for prototyping. This academic year Mold flow Software with Flow, Cool, Warp, & Stress modules was procured. The major existing facilities in Polymer Processing workshop are Windsor Injection Moulding Machine, Two roll mill, Hydraulic press, Leichster Hot air welding machine, Compression Moulding Machine, Kolsite Reprocessing plant etc. New machineries like Windsor Blow Moulding machine, Kolsite film blowing plant, Kolsite PVC pipe plant, and Ultrasonic welding machine are being procured. The Polymer Characterization facilities include IR Spectrophotometer, RT-20 HAAKE Rotational Viscometer, HAAKE Rheocord with mixer and Extruder, RIGAKU Minifled Xray Diffractometer etc. Instruments added in Polymer Characterization Laboratory in this Academic year are: Specimen conditioning chamber, Oscillating disc rheometer, Heat distortion Temperature and Vicat softening Point measuring instrument. Order has been placed for Instron tensile testing machine, ATLAS weathering chamber. New Instruments procured for Product Testing Laboratory are Elemendorf tear tester, Dart impact tester for film, Impact tester for pipes, Gloss meter, Opacity meter for film etc.

Birla Institute of Technology has signed an MOU with Department of Industries, Government of Jharkhand in June 2003 to set up Design Development & Training Centre in Plastics Engineering to cater to the needs of Plastics processing Industries of Jharkhand. The Department of Polymer Engineering is coordinating the activities of the Center. At the onset, the Centre will offer three courses on regular basis: (i) 1 year course for mold making technician, (ii) 1 year course for plastics processing machine Operator and (iii) 6 months course on plastics processing (super visionary level). The center will provide consultancy & product testing services to the local industries. From time to time entrepreneurship development & other need based coursed will be conducted.

The faculty members are involved in research in the areas of Polymer Blends, Polymer Recycling, Process Simulation and Optimization and Product Development. Department of Polymer Engineering proposes to initiate research in the areas of Synthesis of Characterization of Specialty Polymers and Synthesis of polymers by alternative non-petrochemical routes.

Being the only Department of Polymer Engineering in the State of Jharkhand, the Department regularly offers testing facilities and consultancy services to the Polymer Processing Industries of the State. The Department of Polymer Engineering would like to strengthen its expertise in the areas of Polymer Processing Product Development, and create a closer Institute-Industry relationship, and continue to catalyze growth of Plastics Processing Industry in the State.

**Degree/Diploma Offered :** B.E. (Polymer Engineering).

**Faculty Position :** Professor – 1, Lecturer – 4, Associate Lecturer –1.

**Number of Student enrolled with Department :** 29

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

**A. Ongoing Project : -**

Investigator	Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project.
Sri. Sanjoy Datta, Lecturer	Development of Grooved Rubber Pads for Indian Railways.	AICTE	2001	Rs. 7.9 lakhs.	3 years

**B. Project sanctioned during the year 2003-2004 : -**

Investigator	Project Title	Funding Agency	Date of Sanctioned	Sanctioned Amount
Department of Polymer Engineering	Setting up of Design Development and Training Centre for Plastics Engineering	Department of Industries, Govt. of Jharkhand	June 2003	Rs. 102.5 lakhs

**C. Project completed during the year 2003-2004 : -**

Investigator	Project Title	Funding Agency	Date of Sanctioned	Sanctioned Amount	Duration of Project
Sri. Sanjoy Datta	Development of Grooved Rubber Pads for Indian Railways.	AICTE	2001	Rs. 7.9 lakhs.	3 years

**D. Project submitted during the year 2003-2004 :**

Investigators	Project Title	Funding Agency	Amount Rs. (lacs)	Duration of Project
Mr. C. Guria & G. Sarkhel	Multi objective Optimization of Polymerization Reactors.	AICTE Project Venture Type: 'a' (Under Research Promotion Schemes)	10.00	3 years
Mr. C. Guria, Dr.P. Mukhopadhyay	Synthesis of stereo lithographic resins: An Alternative Production Process.	DST (Under R&D Scheme)	17.896	3 years

Mr. G. Sarkhel & C. Guria	Development of Polyolefin based dynamically vulcanized thermoplastic elastomer.	AICTE Project Venture Type: 'b' (Under Research Promotion Schemes)	12.00	3 years
Dr.(Mrs.)M. Mukherjee	Modernization and removal of obsolescence in Polymer Characterization Laboratory	AICTE MODROBS	14.80	1 year
Department of Polymer Engineering	Augmentation of facilities in Polymer Characterization Lab, Polymer Synthesis Laboratory, and Polymer Product Development Laboratory, & Establishment of Virtual Polymer Processing Workshop	TEQIP		

**E. Publications by faculty :**

Sl. No.	Author	Name of the Journal/Vol./ Year/Page No.	Title of the paper
1.	C.Guria, M. Verma, S.P. Malhotra & S.K. Gupta	Ind. Eng. Chem. Res. (Communicated)	Multiobjective optimal synthesis and design of floatation circuits using jumping gene adaptation in genetic algorithm.
2.	C. Guria, S.K. Gupta & Santosh Kumar	Ind. Eng. Chem. Res. (Communicated)	Alkaline hydrolysis of waste polyethylene terephthalate: A modified shrinking core model.
3.	A. Choudhary, M. Mukherjee & B.Adhikary	Polymer Degradation and Stability	Thermal Stability and degradation of the waste reclaim milk pouches during multiple extrusion cycles.
4.	A. Chouchary, M. Mukherjee & B. Adhikary	Polymer Recycling (Communicated)	Recycle of edible oil pouches: composition and thermal stability.
5.	G. Sarkhel, A.N. Banerjee, Pinaki Bhattacharya	Journal of applied polymer science and technology (Communciated)	"Effect of EPDM concentration on mechanical, rheological of LDPE/HDPE ternary blends",

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

1. Sanjay Datta, Lecturer, along with some students of Department of Polymer Engineering attended the Seminar 'Plastiscope' 04 on "Building Competencies" on 26<sup>th</sup> February 2004, at Kolkata, organized by Indian Plastics Federation and Plastindia Foundation.
2. Sri. Gautam Sarkhel, Lecturer, presented the paper "Effect of Melamine Formaldehyde on vinyl acetate emulsion copolymer based paints", in Symposium "Advances in Polymeric Building Materials" in March 2003 held at CBRI Roorkee.
3. Sri. Gautam Sarkhel, Lecturer, Presented the paper, "Studies on mechanical and dynamic mechanical properties of Resol/Vac-EHA/HMMM IPN systems" by Chandan Dutta, Gautam Sarkhel, and Amarnath Banerjee, in Indian Chemical Engineering Congress 2003, organized by IICHE and RRL, Bhubaneswar, held during 19-22 December at Bhubaneswar.
4. A Technical Paper "Mechanical, Dynamic Mechanical Studies of unidirectional Polyethylene-Carbon fibre Resol/Vac-EHA full IPN systems" by Chandan Dutta, Gautam Sarkhel, and Amarnath Banerjee, was presented at International Seminar on Advanced Polymer Technology, organized by Cochin University of Science and technology, held during January 2004 at Cochin.
5. Sri. Chandan Guria participated in the National Seminar "Curriculum Development for Technical Education" organized by BIT Mesra, Ranchi, held during 3-4 April 2004 at Ranchi.
6. Sri. Kaushik Kumar, Associate Lecturer presented the paper "Evaluation of unsaturated polyester as a resin for prototyping plastics by vacuum casting", by Kaushik Kumar and M. Mukherjee, at National Symposium on "Engineering Polymers: Application and Technology" organized by Amrita Institute of Technology, held during 18-19 December 2003 at Coimbatore.
7. Sri Sanjay Datta attended the short term course "Strategies for Developing Higher order cognitive abilities –Innovative Approaches", organized by Technical Teachers Training Institute Kolkata, from October 13- 23 2003.
8. Sri. Sanjay Datta Attended the short term course on "Communication skills and Students Motivation" organized by Technical Teachers Training Institute Kolkata, from 15-26 December 2003.

**G. Students Activities :**

1. Vipul Sharma, a student of final year participated and presented a paper titled "Dentrimers: A novel polymeric Materials" in POLYMER QUEST 2003 organized by Rubber Technology Centre IIT, Kharagpur.

2. Gautam Kumar, a student of 8<sup>th</sup> Semester and Ashutosh Kumar, a student of 6<sup>th</sup> Semester participated in Quiz in Polymer Quest 2003 organized by Rubber Technology Centre IIT, Kharagpur.
3. Three of the 6<sup>th</sup> Semester students obtained good GATE Score: Om Prakash – 90 percentile, Prasant Kumar –88 percentile and Ashutosh Kumar –87 percentile.
4. Students of 4<sup>th</sup> Semester Polymer Engineering attended the Seminar Plastiscope' 04 on "Building Competencies" on 26<sup>th</sup> February 2004, at Kolkata organized by Indian Plastics Federation and Plastindia Foundation.
5. Graduates of the Department of Polymer Engineering enrolled for Higher Studies in the Premier Institutes for Polymer Education and Research: Sri Anirudh Singh joined Polymer Science Department of University of Akron, USA for doctoral research, Sri Mohit Kumar joined MS Materials Science at Rochester Institute of Technology, USA, Sri. Gautam Mishra joined M.Sc. in Polymers for Advanced Technologies in University of Sheffield, UK, Sri Sandeep Kumar is pursuing M.Tech. in Polymer Science and Engg. At IIT Delhi, and Sri Sharat Chandra joined M.Tech. Materials Science, IIT Kanpur. Sri Sharat Chandra is also selected for Early Faculty Induction Programme of AICTE.

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## DEPARTMENT OF PRODUCTION ENGINEERING

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 of industry in India and abroad department's interest encompasses on providing all round development requirements to would be production executives an manufacturing specialists. The structure of courses of production engineering is based on an analysis of not only these needs but reflects the interrelationships among science, engineering, production and management.

The Department's also aimed 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 postgraduates 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 th 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 Systems Laboratory**

Planner 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

Morgan breath-by breath Exercise test systems: (model plumbo-lab-Wx-505) programmable ergo meter 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, VEQ<sub>02</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 cycle 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.

#### Research & Development/Interest of the Faculty Members

- a. JIT and Lean Processes.
- b. Manufacturing Automation & Robotics
- c. Work Design and Ergonomics
- d. Water Jet Technology
- e. Formability of Sintered Preforms.
- f. Hydrodynamics of Metal Forming Processes.
- g. Parametric Study of Wire Cut EDM.
- h. Flexible Manufacturing System and Feature Recognition

#### International Journal to be introduced by the Department :

On the occasion of the Golden Jubilee of the institute the Department of Production Engineering has a plan to introduce International Journal in area of Manufacturing Technology and Research (Biannually). First issue will be coming shortly.

**Degree/Diploma Offered :** B.E. (Production Engineering), M.E. (Automated Manufacturing System), Ph.D.

**Faculty Position :** Professor - 1, Reader -5, Lecturer -9

**Number of Students enrolled with department :** B.E. – 25, M.E. – 9, Ph.D. – 14.

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

##### A. Ongoing Projects (Project Sanctioned during the year 2003-2004):

Sl. No.	Project Title	Funding Agency	Date of Sanction	Sanction Amount	Duration of the Project
1.	Electro Chemical Machining.	UGC	April 2003	Rs. 5.6 Lacs	2 Years
2.	Development of Manufacturing Laboratory.	AICTE	4.3.2002	Rs. 12 Lacs	2 Years

##### B. Project Sanctioned during the year 2003-2004 :

Sl. No.	Project Title	Funding Agency	Date of Sanction	Sanction Amount	Duration of the Project
1.	Electro Chemical Machining.	UGC	April 2003	Rs. 5.6 Lacs	2 Years

**C. Project submitted during the year 2003-2004 :**

Sl. No.	Project Title	Funding Agency	Sanction Amount	Duration of the Project
1.	Modernization & up gradation of welding laboratory.	AICTE	Rs. 15 lacs	2 Years
2.	Work system design in the environment of Industrial Noise and Vibration.	DST	12.40 lakhs	2 Years
3.	Work Bank Project	In process		

**D. Seminar/Conference/Short-term Course Conducted by the Department :**

1. National Conference of "Value Engineering – A fast track to profit Improvement & business Excellence" in collaboration with Indian Value Engineering Society (EZC), Jamshedpur, Jharkhand, India from 26-27 July 2003. A total of 100 participants attended the conference.
2. Lecturer on "Optimization of Machine Loading and unloading Parameters by Neural Networks & Fuzzy Logic" 2003 by Dr. M. K. Tiwari, Assistant Professor, Department of Manufacturing Engineering, NIFFT, Hatia, Ranchi. A total of 25 participants attended the conference.
3. Lecture on "Factory of Future", by Dr. A.K. Jha, IT, BHU, Varanasi. A total of 35 participants attended the conference.
4. Lecture on "Powder Metallurgy", by Dr. G. Sutradhar, Govt. College of Engg., Kalayani, W.B. A total of 35 participants attended the conference.
5. National Workshop on "Curriculum Development for Technical Education" from 3-4 April 2004. A total of 40 participants attended the conference.

**E. Publications by the Faculty Members****I. International/National Journals**

1. Saranjit Singh "Frictional Conditions during Sinter-Forming", The Journal of Manufacturing Technology Today, C.M.T.I. Bangalore, Vol. -2, Issue -10, October 2003.

**II. International/National Conference**

1. Surender Kumar, P.K. Srivastava, "Tribochemistry of lubrication issues of magnetic disks storage devices", International Conference on Tribology of Information Storage Devices (TISD-2003), during Dec. 1 – 3 at Monterey, California, USA.
2. Vinay Sharma & Surender Kumar, "Water jet cutting system for Indian coal mines", International Conference on "Advanced Manufacturing Technology", 29-31 Jan. 2003. at V.J.T.I. Mumbai.
3. Saranjit Singh, "Modeling and Simulation of Axi-Symmetric Soft Powder Pressing", The 48<sup>th</sup> Indian Society of Theoretical and Applied Mechanics (An International Meet), BIT Mesra Ranchi, 18- 21 December 2003.

4. S.K. Mukherjee, Surender Kumar & P.K. Srivastava, "Faraday's Law and ECM-An introspection", Advanced Manufacturing Technology, 29-31 Jan. 2003 at V.J.T.I. Mumbai.
5. S. Chattopadhyaya & Surender Kumar, "Adoptive and intelligent manufacturing", Advanced Manufacturing Technology, 29-31 Jan. 2003 at V.J.T.I. Mumbai.
6. A.K. Jha & Surender Kumar, "Design planning of a knowledge based system for application of value engineering in competitive product design and manufacture", National Conference on Value Engineering – A fast track to profit improvement and business excellence, in collaboration with Indian value engineering society, Jamshedpur, 26-27 July 2003.
7. S.K. Jha, Surender Kumar & R.K. Ranjan, "P/M Products: the winning challenges, National Conference on Value Engineering –A fast truck to profit improvement and business excellence, in collaboration with Indian value engineering society, Jamshedpur, 26-27 July 2003.
8. Surender Kumar, A.K. Jha "Perspectives On Engineering Education in the Information Age", National Workshop on "Curriculum Development for Technical Education" from 3<sup>rd</sup> to 4<sup>th</sup> April 2004.
9. Alok Varma, Surender Kumar, Somnath Chattopadhyaya, "Intelligent cure monitoring of truck tyres by rapidly manufactured smart layer based aluminium mould, National Conference on Value Engineering – A fast track to profit improvement and business excellence, in collaboration with Indian value engineering society, Jamshedpur, 26-27 July 2003.
10. Saranjit Singh, S.K. Jha, Anand Sinha, Rajiv Ranjan & S.B. Kumar, "Powder Metallurgy forging finds a better space among conventional manufacturing techniques : a value facturing approach, National Conference on Value Engineering –A fast truck to profit improvement and business excellence, in collaboration with Indian value engineering society, Jamshedpur, 26-27 July 2003.
11. B.K. Singh, "Planning and evaluation of Laboratory Assignments", National Workshop on "Curriculum Development for Technical Education" from 3-4 April 2004.
12. S.C. Srivastava, Vijay Pandey & S. Mutthukumaran, "Energy conservation study on bottle heat treatment system", National Conference on Value Engineering – A fast track to profit improvement and business excellence, in collaboration with Indian value engineering society, Jamshedpur, 26-27 July 2003.
13. Saranjit Singh, "Productivity Improvement of a Compressor Assembly Plant Layout: Value Addition by Assembly Line Balancing", National Conference on Value Engineering – A fast track to Profit Improvement & Business Excellence, B.I.T. Mesra, Ranchi, 26-27 July 2003.
14. Saranjit Singh, "Waste Minimization through Proper Utilization of Material and Time : A Case Study of Leather Industry", National Seminar on Environment Friendly Industries, Institution of Engineers (I), Jharkhand State Centre, Ranchi, 8-9 November 2003.
15. S. Mutthukumarn, "Experimental setup to conduct low temperature fracture toughness test", National Conference on MPFA-2003, June 19-20 at NIT Trichy.
16. Vinay Sharma, Vijay Pandey, Surender Kumar, "Integrated Curriculum Design and its Analysis", National Workshop on "Curriculum Development for Technical Education" from 3-4 April 2004.

### **III. Book/Monographs :**

1. Dr. S. Kumar, S.K. Jha, R.K. Singh, "Value Engineering –A Fast Track to Profit Improvement & Business Excellence" Narosa Publications, 2004. (In Press)

### **F. Seminar/Conference/Short –term Course attended by Faculty Members :**

1. Surender Kumar, International Conference on Tribology of Information Storage Devices (TISD- 2003), during Dec. 1-3 at Monterey, California, USA.
2. Saranjit Singh, National Seminar on "Environmental Friendly Industries", Institution of Engineers (I), Jharkhand State Centre Ranchi, 8-9 November 2003.
3. Saranjit Singh, 18<sup>th</sup> Indian Engineering Congress on "Role of Engineers in the All Round Development of the Nation", Institution of Engineers (I), UP State Centre, Lucknow, 18-21 December 2003.
4. Vinay Sharma, "Advanced Manufacturing Technology", 29-31 Jan 2003 at V.J.T.I. Mumbai.
5. Vinay Sharma, "Indo-US Workshop on Futuristic Manufacturing", from 22 –24 March, at I.I.T., Kanpur.
6. R.K. Singh, "Implementation of Six Sigma", during 10-11 April 2004, at NIFFT, Hatia, Ranchi.

### **G. Award/Nomination of Faculty by Important Organization :**

1. Saranjit Singh, Surender Kumar, A.K. Jha Production Engineering Division Prize and Gold Medal for Best Paper Award for paper entitled "A Computer Simulation Technique to Estimate Die Load and Energy during Sinter-Forging Process" published in the Journal of Production Engineering, Institution of Engineers (I). This work was an outcome of the project entitled "Formability of Sintered Preforms", sanctioned of Dr. S. Kumar by Department of Science and Technology, Government of India, India.

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## DEPARTMENT OF PHYSICAL EDUCATION & SPORTS

Well equipped Sports Complex of B.I.T. Mesra, Spreading over in approx 110000 Sq. Mts. of Land Comprising a Sports Stadium with 400 Mt. Track, Gynasium with multi Gym facilities and Indoor Badminton hall two courts and spectators gallery in fully updated required infrastructural facilities for a premier Institution as part of University Education and higher learning. Faculty members are always stepping forward in imparting training to the students through various activities of Physical education & Sports discipline.

### Organisation :

1. B.I.T. Organised East Zone Inter University Badminton tournament sponsored by AIU from 3.1.04 – 7.1.04. Mr. Amitabh Choudhary IPS inagurated the newly constructed Badminton Hall as well as East Zone Inter University Badminton Tournament. 21 Teams participated in the tournament and Manipur and Calcutta were Champion in Women and Men Section respectively. Sh. N.N. Pandey I.A.S. Secretary Youth affairs and Sports Jharkhand Govt. was chief guest during closing function of the tournament.
2. Institute Organised Chetan Devraj Cricket tournament in which nine technical Institute tookpart from Eastern region from 31.10.03 to 4.11.03.

### Activities of the year 2003-2004.

1. Institute Badminton Team for Men & Women participated in East Zone Inter University Badminton Tournament held in B.I.T. Mesra from 3.1.04 – 7.1.04.
2. Institute Cricket team participated in Chetan Devraj memorial Cricket tournament held in B.I.T. Mesra from 31.10.03 to 4.11.03.
3. Best Physique competition for men organized on 10.9.03 by the Dept. of Physical Education & Sports in which Mr. Rakesh Singh of B.B.A. Lalpur Centre won the Championship.
4. Annual Athletic Meet was conducted from 31.1.04 to 2.2. 04 in Athletic Stadium. Dr. S.K. Mukherjee inogurated the meet and Mr. Amit Khare I.A.S. distributed the prizes in the closing function.
5. Football Inter Hostel final match for men organized by Physical Education & Sports Dept. at football Stadium in which Hostel No. 7 became the winner of the tournament.
6. Inter Hostel Volleyball tournament was held at Volleyball Stadium in which Hostel No.5 won the Championship.
7. Inter Hostel Hockey tournament was held in Hockey Stadium in which Hostel No. 7 was the Champion.
8. Inter Hostel final Basket ball tournament for men held at Basket ball Stadium Hostel No. 7 won the Championship.
9. Inter Hostel Cricket Tournament was held in which Hostel No. 7 won the Championship.
10. Final match for Badminton Game organized on 12.5.04 in side the newly Constructed Badminton hall and prize for Indoor activities like carom, T.T. Chess & Badminton game were distributed by special Chief guest Dr. P. Ghosh.

**Seminar/Conference attended by faculty members.**

1. Mr. Mahendra Kumar, "Injuries in Sports – A case study" a paper was presented at National Sports Medicine conference held from 5.12.03 – 7.12.03 organised by G.N. D.U. Amritsar.
2. Mr. Mahendra Kumar presented paper in National Seminar on Topic Information Technology and Management of Physical Education in 21<sup>st</sup> century held on 1<sup>st</sup> & 2<sup>nd</sup> Sept. 2003 organised by L.N.I.P.E. Gwalior.
3. Sri Mahendra Kumar attended UGC Sponsored programme of refresher course conducted by Lakshmi Bai National Institute of Physical Education & Sports in August 2004.
4. Dr. R.S. Singh Sr. Sports Officer nominated President Youth hostel Association of India, Ranchi Chapter Dr. R.S. Singh, Sr. Sports Officer also nominated president of Ranchi Dist Archery Association.

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## DEPARTMENT OF REMOTE SENSING

The Remote Sensing (RS) Technology and Geographical Information System has now become vital for sustainable development through the mapping and monitoring of our natural resources as well as cultural activities. With the advent of finer resolution satellite data, one has become enabling to map object of even one-meter dimension. Looking to the growing significance of Remote Sensing, one M.Tech. programme in Remote Sensing was started in July 1997, since then it is continuously evaluating the technological advancement and incorporating it in its M.Tech. Remote Sensing Programme curriculum. The course is designed to introduce Remote Sensing and GIS techniques including Principles of Remote Sensing, Photogrammetry, Digital Image Processing and application of satellite data towards mapping and management of various natural resources.

The department is also involved in research activities by doing the research as well as consultancy projects of application nature where ex-students of department are given priority to get experience through such projects. The department has shifted to new premises at top floor or R&D building having additional space for labs and seminar hall.

The Image Processing and GIS Lab has been strengthened by adding 15 Compaq P IV computers and 15 license of Geometica 9.0 Image Processing software with 15 license of Span-GIS software and 10 license of Arc GIS to the existing 15 IBM P IV machines, four Intergraph TD 260 desktops and one Wipro Voyager machine. Apart from this, one Resistivity meter and one A-1 size printer was procured in the department from project funds. 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 8.0.2, Image Analyst Modular, GIS Environment (MGE), I/RAS, Geomedia Professional, Geomedia, Microstation SE, Oracle 8.0. The department is also in the process starting one more PG course in M. Tech GIS.

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

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

**Number of Student enrolled with department :** M.Tech. - 25

### Academic Innovations, Research & Development activities

#### A. Ongoing Projects :

Project Title	Funding agency	Date of Sanction	Sanctioned Amount (Lacs)	Duration (Years)
Preparation of Land use and Land cover Maps Using Remote Sensing and GIS techniques for Subransiri Upper and Middle Dam Project of NHPC in Arunachal Pradesh	MECON Ranchi	01.05.2000	3.40	1 Year

**B. Project sanctioned during the year 2003-2004 :**

Project title	Funding agency	Date of Sanction	Sanctioned Amount (Lacs)	Duration (Years)
Rajiv Gandhi National Drinking Water Mission Project.	National Remote Sensing Agency DOS, Gol	10.04.03	2.96	6 months
Establishment of District NRDMS Centre for Ranchi (Jharkhand) & Creation of Geo-Spatial Data Base for the Development of Decision Support System.	Department of Science and Technology, GOI	1.09.03	29.60	3 years
Updation of Wastelands Atlas Mission.	National Remote Sensing Agency DOS, Gol	23.09.03	1.67	1 year

**C. Project completed during the year 2003-2004 :**

Project title	Funding agency	Date of Sanction	Sanctioned Amount (Lacs)	Duration (Years)
Water resource development study for Orient Paper Mills.	Orient Paper Mills Amlai, M.P.	14.12.02	2.705	6 months
Rajiv Gandhi National Drinking Water Mission Project.	National Remote Sensing Agency DOS, Gol.	10.04.03	2.96	6 months

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

1. Mr. V.S. Rathore, Associate Lecturer, attended a two week training programme on Remote Sensing and GIS at RRSSC, Kharagpur sponsored by ISRO, DOS, GOI during Feb., 16-28, 2004.
2. Mrs. R.N. K Sharma, Lecturer, attended a two week AICTE-ISTE sponsored short term training programme on Resource planning and Management using Remote Sensing and GIS organized by Department of Civil Engineering, VNIT, Nagpur during March, 15-26 2004.
3. Mr. Roheet Bhatnagar, System Analyst, attended a two week AICTE-ISTE sponsored short term training programme on Resource planning and Management using Remote Sensing and GIS organized by Department of Civil Engineering, VNIT, Nagpur during which March, 15-26 2004.

## **E. Publications by the Faculty Members**

### **I. International Conference Proceedings**

1. M.R. Vijendra, Dr. M.S. Nathawat, Dr. Sudha Ravindranath, Ancillary Data Application in A Digital Environment : A Case Study of Bangalore-Mysore Corridor with A Special Emphasis on Bangalore Cosmopolitan Hub, Proc. Map India 2004, 28-31, January 2004.
2. Dr. M.S. Nathawat, Abhrankash Kanungo, D.J. Biswas, Ranchi City Region's Growth Implications Stating the Role of Tribal Intermingled Residential Patterns: A RS & GIS Approach, Proc. Map India 2004, 28-31, January 2004.
3. Kirti Avishek, Dr. M.S. Nathawat, Repercussions of Urbanization on the Wetlands of Ranchi MNC Using Geospatial technology, Proc. Map India 2004, 28-31, January 2004.
4. Rupali S. Mathur, Dr. M.S. Nathawat, Assessment of Land Transformation in Jaipur Region using Remote Sensing and GIS, Proc. Map India 2004, 28-31, January 2004.
5. R.N.K. Sharma, Water Resource Management for Ranchi Urban Agglomerate, Proc. Annual Convention of Indian Society for Remote Sensing, Dec. 2-6, 2003.
6. N. Patel and Babita Kumari, Assessment of Spectral Variability within an Agricultural Terrain through the Analysis of IRS 1C LISS III Satellite Data, Proceedings of the 7<sup>th</sup> Conference of the International Biometric Society (Indian Region), IBS (IR) 2003 on Statistical Advances in Biosciences held at BHU, Varanasi during 26-27, 2003.
7. Lakhan Lal Mahato, N. Patel, M.S.R. Murthy and D. Kapoor, Land Use/Land Cover Change Analysis of Rayagada, Koraput and Kalahandi Forest Watershed, Orissa Using Satellite Remote Sensing Technology, Proceedings of MAP INDIA 2004, New Delhi, 28-30, January 2004.

### **II. National Conference Proceedings**

1. Sandeep Mahajan, M.R. Vijendra, R.N.K. Sharma, Utility of GIS and RS for upgrading of existing transport network for futuristic planning of Ranchi, Proc., National Seminar with special planning in the context of urbanization, Siliguri, W.B., 18-19, March, 2004.
2. N. Patel and A. Sharma, GIS-Assisted Landscape Analysis for Assessing Habitat Conditions –A Case Study., Proceedings of the Indian Society of Remote Sensing – 2003 Annual National Symposium on Resource Management with Special Reference to Geoinformatics and Decentralized Planning held at Thiruvananthapuram during 9-12 December, 2003.
3. N. Patel and M.K. Mohanty, Change Detection Analysis : A Case Study in Palamau National Park, Jharkhand, India, Proceedings of the Indian Society of Remote Sensing – 2003 Annual National Symposium on Resource Management with Special Reference to Geoinformatics and Decentralized Planning held at Thiruvananthapuram during 9-12 December, 2003.
4. N. Patel and M.K. Mohanty, Remote Sensing and GIS Techniques for Assessment of Spatial Changes in Tropical Forest: A Case Study (**Invited Presentation**), Proceedings of the National Seminar on Environmental-Friendly Industries – Today & Tomorrow (EFITT- 2003) conducted by the Indian Institution of Plant Engineers at Ranchi during November 8-9, 2003.

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

1. Dr. M.S. Nathawat has been confirmed the Citation under the aegis of CLUMA in collaboration with MS Swaminathan Research Foundation, Chennai, Bhoovigyan Vikas Foundation, New Delhi for his contribution in promoting teaching in the field of Remote Sensing and GIS.
2. Dr. M.S. Nathawat has been nominated as member Expert Committee of UGC.
3. Dr. M.S. Nathawat has be nominated as member Governing Body of Jharkhand Space Application Centre, Ranchi.

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## DEPARTMENT OF SPACE ENGINEERING & ROCKETRY

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

In addition to the existing M.E. Programme in Space Engineering and Rocketry with two specialization, viz. Aerodynamics and Rocket Propulsion started in 1968, the Department has started an M.Tech. Programme in Fuels and Combustion w.e.f. Monsoon 2002 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. There are seven and eight students in 2002 and 2003 batches respectively.

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

### Aerodynamics Division

Measurement of static pressures and oil flow visualization tests were carried out on a typical protrusion, mounted on a model of a launch vehicle at supersonic speed ( $M = 2.4$  and  $1.8$ ), as a part of work under a RESPOND Project from ISRO.

Experimental investigation on typical bluff bodies, mounted in tandem, at different gaps, at a speed of 30 m/s were carried out in the Subsonic Tunnel of the Department for a UGC sponsored Project. Experimental investigation on typical slender body at different angles of attack (low, moderate and high) were also carried out using subsonic tunnel. Measurement of static pressures and unsteady pressures were made to obtain the normal force components. Flow visualization studies were also made using tuft and oil. Development of Navier Stokes solver for incompressible flow using structured grid has been initiated for computation of flow field around slender bodies at different angles of attack, bluff bodies, etc. The results obtained will be validated using the ongoing experiments on slender body and bluff body in subsonic tunnel.

Detailed measurement of static pressures and unsteady pressures, around blunt protrusions having different leading edge, were made at supersonic speed using the supersonic tunnel. Schlieren and oil flow visualization tests were carried out. Effect of various parameters like leading edge angle, gap between protrusions, etc. were obtained.

The work on detailed characterization of flow field around blunt protrusions mounted on a surface have been initiated and the procurement of instruments, attachments, etc are underway for the study using the existing supersonic wind tunnel for an ARDB Project, sanctioned during the year.

### Propellant Technology Division

The various compositions of relatively fast burning Eco-friendly HTPB-AN based composite solid propellants have been developed, employing promising burn-rate modifiers. The Differential Scanning Calorimetric studies and Thermo-gravimetric Analysis of individual ingredients and propellants have been carried out. Promising condensed phase catalysts have been identified and some of the chromate/dichromate catalysts have been identified, which modify the burn rate of propellants at high pressures in the range of 7- bar.

The development work on the high shear rate Flowmeter has been completed successfully and the test using non-Newtonian fluids have been conducted. The research work on the virgin and metallized gelled propellants using the newly designed set-up at varying shear rates is being carried out.

Efforts have also made to design and fabricate a Swirl Burner for gaseous hydrocarbon fuel-air system. The assembly is almost complete and test runs have been planned. It is envisaged that with these experiments, the influence of swirl number, injection velocity, etc. on burning efficiency will be understood in a much better way.

### **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 recognised 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 new laboratory, Cryogenic Propulsion Laboratory under Special Assistance Programme (SAP) of UGC is under development in the Department. A small Cryogenic rocket engine (50 kgf thrust) using liquid oxygen and cooled gaseous hydrogen has been designed and some of the components like injector holder and injector body have been fabricated. Essential equipments including liquid nitrogen plant, cryogenic storage dewars, transfer tubes, solenoid valves, etc. have already been procured, and the design of static test stand and associated flow circuits have been completed. A laboratory building, 21m X 5.5 m, is almost complete and necessary fittings and amenities are required to be taken up.

### **Composite Materials Division**

Composite Materials are finding wider application for heat shields, fuselage design, leading edges, nose tip of entry vehicles, landing gear, brake pads and such other critical components in military and civilian aircrafts. The mechanical and thermal properties of various types of composite materials mainly unidirectional and bi-directional CFRP and GFRP under static and dynamic loading conditions are of immense importance towards generating a data bank for safe structural design of aircraft and space vehicles. Extensive research is being carried out in this direction, and studies related to fatigue failure, creep properties, crack propagation, residual strength after fixed cyclic load, elasto buckling behaviour in corrosive environment have been conducted. Work has been carried out on determination of properties of stiffened composite plates and adhesive joints of composite plates also. Design and development of new composite materials, like Kevlar and Araldite have also been initiated.

**Degree/Diploma offered :** M.E. (Space Engineering & Rocketry) with specialization in Rocket Propulsion & Aerodynamics. M.Tech. (Fuels & Combustion).

**Faculty Position :** Professor – 4, Reader – 1, Lecturer 3.

**Number of Students enrolled with department :** M.E. – 7, M.Tech. - 14.

## Academic Innovations, Research & Development activities:

### A. Ongoing Projects :

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project
Transonic Buffeting: Shock Boundary Layer Interaction.	RESPOND ISRO	2001	9.96	3 years
Combustion Studies on Eco-friendly Solid Propellants.	UGC	2000	4.90	3 years
Studies of Flow Behaviour of heterogeneous Gelled propellants	AICTE	2001	9.20	3 years
Development of Cryogenic Propulsions Systems.	UGC	2002	49.00	5 years
Investigation of Flow Field around protrusions at Supersonic Speeds.	ARDB	2003	8.26	2 years
Manufacturing and Testing of Herringbone –grooved Journal Bearing.	DST	2003	14.03	2 years

### B. Projects Sanctioned during the year 2003-2004 :

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project
Investigation of Flow Field around Protrusions at Supersonic Speeds.	ARDB	July 2003	8.26	2 years

### C. Project submitted during the year 2003-2004.

Project Title	Funding Agency	Date of Sanction	Sanctioned Amount	Duration of Project
Investigation of Flow Field around Fore Body with Vertical Fences at Supersonic Speeds. (Dr. J.K. Prasad)	DRDL	Oct. 2003	9.50 lac	1 year
Study of Side Force on Slender Body at High Angles of Attack. (Prof. S. Das)	ARDB	Feb. 2004	9.17 lac	2 years
Progressive Damage and Durability of Carbon Fibre Reinforced Plastic. (Dr.P.K. Dash)	ARDB	Mar. 2004	7.41 lac	3 years

### D. Seminar/Conference/Short term course conducted by the Department :

1. 17<sup>th</sup> National Convention of Aerospace Engineers and National Seminar on "Indian Aerospace Vehicles: Technological Challenges", on Nov. 3-5, 2003 under the Chairmanship of Dr. S.K. Mukherjee. Dr. A.K. Chatterjee was the Co-Chairman and Dr. J.K. Prasad was the Organizing Secretary of the convention. Dr R. Natarajan, Chairmain AICTE was the Chief Guest in convention. A total of 70 delegates from different organization participated in the convention.

## **E. Publication by faculty :**

### **I. International Journals**

1. A. Roy and G. Bandyopadhyay, "Numerical Computation of Flow Past a Rectangular Cylinder Placed at Different Ground Clearances from a Fixed Wall", J. of Aerospace Sciences and Technologies, Vol. 55, No. 2, May 2003, pp. 112-117.

### **II. National Journals**

1. A.K. Chatterjee and S. Som "Influence of Oxidiser Incorporation in PVC Plastisol Hybrid Fuel, J. of Institution of Engineers (I) Aerospace Div, Vol. 84, Nov. 2003, pp. 41-46.
2. Mohan Varma, M. Pandey, and B.L. Gupta, "Pressure Dependence of Thermal Decomposition of Ammonium Nitrate Oxidizer", J. of Indian Chemical Society Vol. 80 (50), 2003, pp. 569-574.

### **III. Publication in Seminar/Symposium :**

1. A.K. Chatterjee and T.K. Nandi, "Cryogenic Propulsion in Space Missions" Proc. of National Seminar & Conference on Cryogenics and Its Frontier Applications, B.E. College, Howrah, Mar 25-27, 2004, pp. 29-35.
2. A.K. Chatterjee, V.Kumar, S. Das and J.K. Prasad, "Upstream Influence of a Protrusion on a Cone-Cylinder Body in Supersonic Stream", Proc. of Seventeenth National Convention of Aerospace Engineering & National Seminar on Indian Aerospace Vehicles: Technological Challenges, B.I.T., Mesra, Ranchi, Nov. 3-5 2003, pp. 59-71.
3. Basant Kumar, Sudip Das and J.K. Prasad "Flow Field around Ogive Cylinder at Large Angles of Attack", Proc. of Seventeenth National Convention of Aerospace Engineering, & National Seminar on Indian Aerospace Vehicles: Technological Challenges, B.I.T., Mesra, Ranchi, Nov. 3-5 2003, pp. 52-58.
4. Basant Kumar, Sudip Das, and J.K. Prasad "Experimental Investigation of Flowfield Around Slender Body at High Angles of Attack", Proc. National Conf. on Fluid Mech. And Fluid Power, National Institute of Technology, Suratkhal, Dec. 2003, pp. 471-478.
5. M.K. Rahl, Sudip Das, and J.K. Prasad "Interaction of Flow Field around Blunt Protrusions at Supersonic Speed", Proc. of Seventeenth National Convention of Aerospace Engineering, & National Seminar on Indian Aerospace Vehicles: Technological Challenges, B.I.T., Mesra, Ranchi, Nov. 3-5 2003, pp. 44-51.
6. Debda, T.K. Nandi and A.K. Chatterjee, "Development of Herringbone Grooved Journal Bearing for Cryogenic Application", Proc. of Seventeenth National Convention of Aerospace Engineering & National Seminar on Indian Aerospace Vehicles: Technological Challenges B.I.T., Mesra, Ranchi, Nov. 3-5 2003, pp. 536-544.
7. A. Roy and G. Bandyopadhyay, "Computation of Flow Past a Three Dimensional Square Cylinder using a Finite Volume Navier Stokes Solver", Proc. of Seventeenth National Convention of Aerospace Engineers & National Seminar on Indian Aerospace Vehicles: Technological Challenges, B.I.T., Mesra, Ranchi, Nov. 3-5 2003, pp. 241-247.



8. P.K. Dash and A.K. Chatterjee, "An Investigation of In-plane Shear Properties of Bi-directional Woven Carbon Epoxy Composites under Adverse Environment", Proc. of Seventeenth National Convention of Aerospace Engineers & National Seminar on Indian Aerospace Vehicles: Technological Challenges, B.I.T., Mesra, Ranchi, Nov. 3-5 2003, pp. 383-394.
9. A.K. Shrivastava and P.K. Dash "Effect of Corrosive Environment on Elasto-Buckling Strength of FGRC Plate", Proc. of Seventeenth National Convention of Aerospace Engineers & National Seminar on Indian Aerospace Vehicles: Technological Challenges, B.I.T., Mesra, Ranchi, Nov. 3-5 2003, pp. 395-407.
10. Sudip Das and J.K. Prasad "Experimental Investigation of Flow Around Three Dimensional Bluff Bodies in Tandem", Proc. of National Conf. on Fluid Mech. And Fluid Power, National Institute of Technology, Suratkal, Dec. 2003, pp. 479-486.

#### **IV. Books:**

1. J.K. Prasad & A.K. Chatterjee (Ed.) Indian Aerospace Vehicles: Technological Challenges, Megawaves.

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

1. Dr. A.K. Chatterjee attended 18<sup>th</sup> Indian Engineering Congress on "Role of Engineering in All - round Development of Nation", Lucknow, Dec. 19-21, 2003.
2. A.K. Chatterjee attended National Seminar & Conference on "Cryogenics and Its Frontier Applications", B.E. College, Howrah, Mar. 25-27, 2004.
3. Dr. Mohan Varma attended 4<sup>th</sup> International High Energy Materials Conference & Exhibit, HEMRL, Pune, Nov. 18-20, 2003.
4. Dr. J.K. Prasad attended National Conf. on Fluid Mech. And Fluid Power, National Institute of Technology, Suratkal, Dec. 14-16, 2003.
5. Dr. T.K. Nandi attended National Seminar & Conference on "Cryogenics and Its Frontier Applications", B.E. College, Howrah, Mar. 25-27, 2004.
6. Dr. P.K. Dash attended Short course on NDT of Plain and Reinforced Concrete, N.I.T.T.T. R. Kolkata, Feb. 8-15, 2004.
7. Shri Sudip Das attended National Conf. on Fluid Mech. and Fluid Power, National Institute of Technology, Suratkal, Dec. 14-16, 2003.

#### **G. Award/Nomination:**

Dr. Mohan Verma was honoured with 'Dalmiya HEMSI Award' instituted by Dalmiya Group of Industries and HEMSI for the year 2003. He was also awarded 'Best R&D Project Award 2004' by AICTE and "Technology Day Award 2004" by DST. Govt. of India.

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## **Environmental Science and Engineering Group**

The Institute established the group in the year 2002 with an idea of imparting higher education in the field of Environmental Science and Engineering. Presently, this group offers an M.Tech. Course in Environmental Science and Engineering. In the first batch, 7 students took admission in M.Tech. The second batch is having 11 students. Four candidates have applied for Ph.D. Registration. Since it is a multidisciplinary group, faculties of various departments of the Institute the Mechanical Engineering, Applied Chemistry, Polymer Engineering, Pharmacy, Remote Sensing, Civil Engineering, Management etc. are involved in teaching and developmental activities of the center.

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## **EXTENSION CENTRES**

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## **EXTENSION CENTRE ALLAHABAD**

The Centre provides full time MCA, BCA and BBA Programme and part time B.Tech. degree programme in various discipline like Civil, Electrical and Mechanical Engineering.

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

The Computer Science Dept. has laboratories which spread over an area of 189.79 sq. meter and equipped with Computers like IBM P4 (15 Nos.), Compaq P4 (40 Nos.), Compaq Celeron (14 Nos.), Compaq Proliant Server (1 No.), Unix Server – P1 (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, etc. The Computer Centre is completely networked and has ISDN connection for Internet access. Students are actively carrying out live project work on latest fields: Network, Web Design. Multi Media Applications, Internet Controlling Tools, Image Processing, E-Security, Artificial Intelligence etc.

### **Department of Management**

At the moment BBA Programme is conducted. An adequate number of various titles of management books and a good number of technical journals are being subscribed by the Dept. The department also extends service to the other departments.

### **Department of Civil Engineering**

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 of Environmental Pollution, irrigation, rural water supply schemes and rural link roads, etc.

### **Department of Electrical and Electronics Engineering**

The department has Electrical Machine lab, digital electronics 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 Engineering**

The department has Manufacturing processes lab having standard machine tools of general types 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 :** MCA , BCA, BBA, B.Tech. (PT) in Civil, Electrical & Electronics, and Mechanical.

**Faculty Position :** Professor – 1, Senior Lecturer – 1, Lecturer – 6, Associate Lecturer – 2.

**Number of Student enrolled :** Undergraduate – 210, B.Tech. (PT) – 4, Postgraduate – 55.

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

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

1. Prof. Binay Kumar Singh, Senior Lecturer, Dept. of Civil Engg. presented a paper entitled "Monitoring and dispersion Modeling of Nox due to vehicular traffic" at National conference UAPIM-2003 conducted by SVNIT, Surat, during 11-13 Dec., 2003.
2. Prof. Binay Kumar Singh, Senior Lecturer, Department of Civil Engg. attended a QIP. Short term course on "Recent Developments in Urban Transportation System Planning" conducted on IIT, Bombay during July 21-25, 2003.
3. Prof. Ravi Shankar Pandey, Lecturer, Department of Computer Science, Allahabad, participated in "Wireless Networking Workshop" conducted by IIT, Bombay during 27-28, March, 2004.
4. Prof. Raman Kumar Singh, Lecturer, Department of Computer Science Allahabad, participated in "Wireless Networking Workshop" conducted by IIT, Bombay during 27-28 March, 2004.
5. Prof. Anil Kumar Singh, Lecturer, Department of Mechanical Engg., Allahabad. attended seminar on "Packaging for Exports" during 3-5<sup>th</sup> February 2004, conducted by SISI, Allahabad.
6. Prof. Rohit Pandey, Associate Lecturer, Department of Management, Allahabad. attended seminar on "Packaging for Exports" during 3-5<sup>th</sup> February 2004, conducted by SISI Allahabad.
7. Mr. S.K. Tiwary, Technical Assistant, Department of Mechanical Engg., Allahabad. attended seminar on "Packaging for Exports" during 3-5<sup>th</sup> February 2004. Conducted by SISI Allahabad.
8. Prof. Binay Kumar Singh, Sr. Lecturer, Department of Civil Engineering, Awareness program on "ISO 9000" on 5<sup>th</sup> November 2003 organized by SISI Allahabad.
9. Prof. Rajeev Srivastava, Lecturer Department of Management. Awareness program on "ISO 9000" on 5<sup>th</sup> November 2003 organized by SISI, Allahabad.
10. Mr. Anil Kumar Singh, Lecturer, Department of Mechanical Engineering has attended 15 day Short term course sponsored by AICET/ISTE on "Non Conventional Energy" at BIT Mesra, Ranchi during 9 – 22 June, 2003.
11. Mr. Dhaneswar Mahto, Associate Lecturer, Department of Mechanical Engineering has attended 15 day Short term course sponsored by AICET/ISTE on "Non Conventional Energy" at BIT Mesra, Ranchi during 9-22 June, 2003.
12. Mr. Anil Kumar Singh, Lecturer, Department of Mechanical Engineering has attended 7 day QIP Programme on "Application of Finite Element Method in Manufacturing" organized by IIT, Guwhati during 16 –22 Feb., 2004.

### **Workshop Conducted by the Centre :**

1. Workshop on "Basic Internal Awareness Programme" was conducted by Department of Computer Science, Allahabad during 6-8 August, 2003.

### **Students Activities**

The students activities for the session 2003-2004 was organized and managed by Prof. R.S. Pandey the Prof. In-charge students activities and it was assisted by Prof. (Mrs.) Anita Kushwaha, the I/C cultural activities, Mr. Narendra Kumar, I/C sports activities as mentioned below.

1. BITEC Souvenir –2003 published for better interaction of the outgoing students.
2. The student's cultural committee organized various competitions such as debate, solo song, group song to promote spirit of healthy competition among the students on 15 August, 26 January.
3. Conducted 1<sup>st</sup> Annual athletic meet held at BITEC Allahabad during 3 – 5, Feb. 2004.
4. Participated in BITOTSAV 2004 held at BIT Ranchi during 8-12 Feb. 2004.
5. Participated in 18<sup>th</sup> Annual Sports of BIT Ranchi held at Ranchi during 13-14, Feb. 2004.

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## EXTENSION CENTRE CHENNAI

The Chennai extension centre of Birla Institute of Technology was formerly opened on the signing of a Memorandum of Understanding by the Vice Chancellor of BIT, Dr. S.K. Mukherjee, and the Chairman of AMET, Mr. J. Ramachandran on 2<sup>nd</sup> September 2002.

The center was essentially opened to bring the presence of Birla Institute of Technology in South India. The center was started with bachelor of Engineering programme in Marine Engineering and later on expanded to include other courses which were already being conducted at Mesra, Ranchi. The office space for the center was provided within the precincts of AMET. Prof. Awadh Prasad appointed Director of the center in the month of July 2003. In early 2004, land was acquired by the center adjacent to the Academy for expanding BIT activities at Chennai. At the present time 1.5 acres of land have already been acquired, with plans to extend to 5 acres in the near future.

**Degree/Diploma Offered :** B.E. (Marine Engineering), B.Sc. (Nautical Science), MBA.

**Faculty Position :** Professor – 2, other faculty on deputation from AMET – 50.

**Number of Students enrolled :** Undergraduate – 314, Postgraduate – 15.

### Academic Activities.

1. P.K. Chatterjee & A. Prasad, "Strategic issues for KAM Implementation in Industrial Marketing" Vision Volume 7 No. 2 July Dec. 2003.
2. Prof. Awadh Prasad & Dr. (Mrs.) Manju Bhagat, "Developing Entrepreneurial Managers through HR intervention " Growth Vol. 30 NO. 4 & Vol. 31. 1 Jan. –June 2003.
3. S. Mallika & K.R. Viswanathan authored an Article captioned Development of IT in India - problems and prospects for the book entitled Managing Information Knowledge and power in the cyber age Published by Book well New Delhi, Jan. 2004.
1. Prof. Awadh Prasad and Mr. Tarak Shaw and Dr. Hariharan "Developing entrepreneurial manager's" was published in the book entitled Re-energizing Enterprises through HRD by Viva Books, Pvt. Ltd., New Delhi 2003.

### Students activities.

1. Students of the centre participated in Ragazzo, BITOTSAV – 04 and won many prizes and certificates.

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## EXTENSION CENTRE JAIPUR

The Birla Institute of Technology, Extension Centre, Jaipur was started in 1995 and it targets the identified need of improved quality IT professionals through the pursuit of excellence in IT education, research, consulting and training. At present it is running a Post-graduate course viz. MCA and 2 Graduate courses viz. BCA & BBA. The Institute has already produced 6 batches of MCA & 2 batches of BCA and all these students are well placed in the industry.

To develop a professional environment, we introduced extra curricular activities alongwith the regular studies. Organizing the activities also help in improving the communication skills and leadership skills of the students. We promote sports and cultural activities. We also organize various cultural events, IT/Software quizzes, debates at the inter and intra collegiate level and caters to the entertainment needs of students. In the years 2003, we organized inter-college Software Development quizzes and students from various Engineering Colleges participated in these quizzes. Certificate was also given to each student.

To work on advance technology and current IT challenges, the Institute conduct Internal and External Seminars. The students are also encouraged to impart mini seminar sessions which help in developing their technical and vocal skills. The entire purpose of the event is to give the students an adequate atmosphere where they could exercise their internal search and analysis skills and interact with their peers through a topic of their interests. An informative Seminar titled IT-The New renaissance, provided an insight into the current IT scenario and the latest IT trends. With presentations from eminent personalities from the IT industry, the Seminar drew audiences from all over Jaipur.

Annual Day Function was also celebrated in the year 2003 at the Birla Auditorium. An annual feature organized with the objective to provide an ideal platform for the reunion of old students with their prestigious Alma mater. This also provides an opportunity for the old students to share their experiences and knowledge with the present students.

The Institute has started imparting Summer Training (30/45/70 days duration) to the students of various Engineering Colleges in Computer Stream. The number of students is continuously increasing every year and in the last year, 35 students were trained.

The Institute has also initiated Summer training/Project for students of BCA, BBA & MCA to provide practical input and to impart the maximum Research activities along with the courses. These students are deputed to reputed industrial houses on summer project assignment for a period of 40 days. During this period they are expected to learn and understand general functioning of the organization and obtain specialized knowledge in the area of their interest by undertaking projects under the able guidance and supervision of experienced executives of the Industrial house.

The institute assists guiding the students in securing positions in leading national corporations as well as providing contacts for jobs or higher education. During the last year different companies visited our center for campus recruitment and selected our students. Some of the companies that have sought our students are: Birla Soft, Wipro, NIC, IBM, HCL Technologies, Honeywell, convergys Technologies, Siemens, etc. Efforts are in progress for development of a Placement Cell.

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

**Faculty Position :** Scientific Officer/Coordinator –1, System Analyst – 1, Lecturer –7, Associate Lecturer –1, Programmer, Tech. Assistant – 1.

**Number of Student enrolled :** Undergraduate - 189, Postgraduate – 127.

#### **A. Student Activities.**

Students actively participated in different extracurricular such as sports, Cultural Activities, Annual Day Function, Intra College Software Development Quiz, Inter College Software Development Quiz, Quizzes.

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### **EXTENSION CENTRE KOLKATA**

At present two full time batches of MCA and BCA and two part time batches of MCA are running at our centre. In the year 2003, September MCA –2000 batch has successfully completed their final degree. They have done projects in various organizations like CTS, Alumnus software, CMC limited, ISI Calcutta, Jadavpur University, RS Software Limited, CESC limited IIT, Kharagpur, TISCO, Electra design automation etc. They have done 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. They have also done inhouse projects in their fifth semester in our lab under Prof. R.T. Goswami, Mrs. Jayasri Ray, Mrs. Joysree Das. Last year three BCA students have taken up a project on preparation of personal diary on computer. BCA students are now doing a project on preparation of website. All the students of MCA (PT) VIII and VII semester has developed different projects during their respective semester under the guidance of the faculty members Mrs. J. Ray and Prof. R.T. Goswami. Project include Hospital Management System, Library Information System, Restaurant Billing System, Inventory Management System, Hotel Management System, Airline System, Students Profile Management System, Banking System. MCA(PT) VIII and VII semester students in a group of two presented seminar under the mentorship of the faculty of this center Mrs. J. Das and Prof. R.T. Goswami on different topics throughout their respective 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 almost all events of the BITOTSAV'04. Few students of MCA(FT) has undergone live projects in different organization on different platform. Platform includes Linux, VC++ and the organization includes Duckback software, Graphica Computers. 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 and faculty Mrs. J. Das attended a four day International workshop on Distributed computing organized jointly by Department of Computer Science and Engineering, Jadavpur University and IIM, Calcutta in December, 2003. Faculty in R.T. Goswami also attended three seminar viz. 1. organized by Novell on Linux 2. VSNL, Kolkata 3. Sun Microsystems on java. Despite the above activity we have planned many things out due to space constraint it was not possible.

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

**Faculty Position :** Lecturer – 2, Associate Lecturer – 1

**Number of student enrolled :** BCA (FT) – 28, MCA (FT/PT) – 54.

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

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

1. Faculty In-charge R.T. Goswami and faculty Mrs. J. Das attended a one day seminar on Enterprise Suraksha Organized by Department of Computer Science and Engineering, Jadavpur University.
2. Faculty In-charge R.T. Goswami and faculty Mrs. J. Das attended a four day International workshop on Distributed computing organized jointly by Department of Computer Science and Engineering, Jadavpur University and IIM, Calcutta in December, 2003.
3. Faculty in R.T. Goswami also attended three seminars which are 1. Organized by Novell on Linux. 2. Organized VSNL, Kolkata on Internet. 3. Organized by Sun Microsystem on java.

### **B. Students Activities :**

1. Three BCA students have taken up a project on preparation of personal diary on computer. But they could not present that paper to CSI IT challenge competition due to time. BCA students are doing a project on preparation of website.
2. MCA (PT) VIII & VII semester has developed different projects during their respective semester under the guidance of the faculty membes Mrs. J. Ray and Prof. R.T. Goswami. Projects include Hospital management System, Library Information system, Restaurant Billing System, Inventory Management System, Hotel Management System, Airline System, Students Profile Management System, Banking System.
3. Under the guidance of the faculty In-charge and faculty members, our MCA students took part in almost all events of the BITOTSAV' 04. Few students of MCA(FT) has undergone live projects in organization like Duckback software, Graphica Computers.

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## **EXTENSION CENTRE LALPUR**

The Institute first started a Centre for Continuing Education at Lalpur in Ranchi, initially with part-time postgraduate M.E. courses in the disciplines of Mechanical, Civil, Electrical and Electronics Engineering, for the benefit of officers working in various Ranchi based public sector undertakings and private industries such as, MECON, SAIL, HEC, CIL, CMPDI, SBL, UMIL, nationalized banks, etc, who wished to upgrade their qualifications. Part-Time evening courses were offered for first the M.E., then subsequently th MBA MCA and DCA courses, with laboratory classes being conducted on Sundays and holidays at the Mesra campus. This Centre is now named the Lalpur Extension Center.

In 1997 the Institute started the full time courses, B.Sc. Computer Science and B.Sc. Electronics courses for girls, and in 1998 BCA course also for the girls only. The fact that these were extremely successfull in 1999 two extra shifts were added to run the BCA course for boys also. In 1999, M.Sc. Information Technology and M.Sc. Electronics and Telecommunication courses were introduced, for girls only. Currently the Lalpur Extension Centre has over 1600 students on its rolls.

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

**Faculty Position :** Reader – 3, Lecturer – 4, Associate Lecturer – 10.

**Number of Students enrolled :** Undergraduate – 1113, Postgraduate –535.

**Students activities.**

Students of the center organized various cultural & creative programmes under the banner of different students societies like Interact Society, Debating Society, News & Publication Society, Fine Arts Club, Creative Writing Club and IT Club.

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## **EXTENSION CENTRE NOIDA**

B.I.T., Noida Extension Centre started functioning since 1998 with BCA and in 1999 with BBA programme. MCA programme was started in 2001 and MBA and 2003. This center is well equipped with a library and computer labs with about 100 computers and related software's. A V-SAT terminal has been installed during 2002-2003 for providing interned facilities to the staff and students of the center.

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

**Faculty Position :** Professor –1, Reader –1, Senior Lecturer – 3, Lecturer –12, Associate Lecturer –7, Junior Programmer –1, Junior System Analyst –1.

**Number of Student enrolled :** Undergraduate – 426, Postgraduate – 204.

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

**Publication by faculty :**

**I. Book/Monographs**

Dr. K.C. Singh - 1. Indian Economic Enrironment. 2. Credit Policy (Rural & Industrial).

**Students Activities :**

1. The Institute organized BIT UTSAV'03 a cultural evening at Shah Auditorium. The chief guest was Dr. S.K. Mukherjee, Vice-Chancellor Birla Institute of Technology.
2. An Intra college cricket tournament was organized in which students from all course and semester of the Noida campus participated.

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## **EXTENSION CENTRE BAHRAIN**

It is the first extension center of BIT located outside India. The first academic session was started in the year 2000. From its inception, the center is a steady growth and today it is offering courses in various branch of engineering, science and management.

The first batch of 24 students comprising of 7 boys in Production Engineering 4 boys and 13 girls in Computer Science & Engineering- sponsored by the Ministry of Labour & Social affairs, Kingdom of Bahrain, have successfully completed their Diploma in Technology (D.Tech.) programme in June 2003. The Diploma in Technology certificates were awarded to all the

successful candidates in the graduation ceremony organized under the patronage of the Minister of Labour & Social affairs His Excellency Dr. Majeed Bin Mohsin Al Alawi at the Gulf International Convention Centre on 13<sup>th</sup> October 2003. Dr. S.K. Mukherjee, Vice-Chancellor, Birla Institute of Technology, Mesra, Ranchi, graced the function. The center has helped 15 of these students to secure jobs.

The Chairman, Board of Governors of Birla Institute of Technology, and his delegation visited the Birla Institute of Technology International Centre, Bahrain, from 24<sup>th</sup> December 2003 to 28<sup>th</sup> December 2003.

The Institute was inspected by the Manpower Development Inspectorate in the Directorate of Manpower Development, Ministry of Labour & Social Affairs, Kingdom of Bahrain, from 6<sup>th</sup> to 9<sup>th</sup> March 2004 and their report is awaited. This will facilitate BITIC to bid for the government sponsored training programmes besides becoming qualified to organize training programmes for the levy paying companies under the levy scheme of the Kingdom of Bahrain.

### **Computer Science & Engineering Department :**

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

### **Electronics & Communication Department :**

The department has good laboratory facilities in the areas of Basic electronics, Microprocessors, Digital Systems design, Instrumentation and process control, Communication, Circuit Simulation, etc.

### **Production Engineering Department :**

The center 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.

During the year 2003-2004, the following new facilities have been created and existing facilities have been strengthened. The addition includes 2 classrooms, Instrumentation and Process control laboratory and Microprocessor laboratory.

The facilities Strengthened are Metrology laboratory, Library (over 4000 books have been added and a book bank facility has been created).

### **Degree/Diploma 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.
- d. 3 Year Bachelor of Business Administration (BBA)
- e. 2 Year Master of Business Administration (MBA)

**Faculty Positions :** Professor – 3, Associate Professor – 4, University Education Teacher – 5, Workshop Trainer –1, Senior Mechanic –1, Technical Assistant –1.

**Number of Student enrolled :** B.E. - 34, D.Tech. – 24, BBA – 13, B.Sc.-4, MBA – 17.

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

### **A. Seminar/Symposium/Short term courses attended by the faculty members.**

1. Prof. S.L. Mishra and Prof. Prateek Sharma attended a seminar on Inspection System organized by the ministry of Labour & Social Affairs, Kingdom of Bahrain on 23<sup>rd</sup> November 2003.

### **B. Students Activities : The following activities were organized:**

- a) Quiz Competition b) Debate c) Industrial visit d) Publication of news letter.

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## **EXTENSION CENTRE MUSCAT**

BIT entered in to an agreement with the Waljat Colleges of Applied Science (WCAS), Muscat for an academic collaboration in August 2001 wherein BIT is required to conduct its academic programs at WCAS. BIT started BE (CS), BE (EC), BCA, and 4 year BCA (Hons.) programs from 1<sup>st</sup> October 2001. In academic session 2002-2003 BE (Biotechnology), BBA and four year BBA & IT programs were commenced by BIT at Muscat. It is proposed that in academic year 2004-2005, four new programs, viz., BBA & Finance, BBA & Accountancy, BBA & Banking, BBA & HRD, and BBA & Commerce will be introduced.

### **Infrastructure facilities :**

1. **Existing teaching block :** The built up area of the existing teaching block is 4,00 sq. mtrs. It has 9 class rooms, one computer lab with 80 computers (networked) with a dual processor server, 2 MB leased line for internet, 3 laboratories for electronics, canteen, separate prayer rooms for girls and mechanics lab, and offices for teaching faculty and administration staff.
2. **New teaching, canteen and auditorium (seminar hall) buildings :** Construction work is in progress for building a teaching block (half basement and three floors) having a built up area of 5,825 sq. mtrs. It will have space for 40 class rooms, conference room, prayer rooms, big library, computer laboratory, first aid room with qualified nurse, staff rooms, provision for handicapped students, etc. Canteen cum common room building will be having 395 sq. mtrs. Built up area and the auditorium will have an area of 700 sq. mtrs. With audiovisual aids.

**Degree/Diploma Offered :** B.E. (ECE, Comp.Sci., Biotech), BCA, BCA (Hons), BBA, BBA & IT.

Apart from the above, one year foundation programme is conducted for weak students in each of the above disciplines.

**Faculty Position :** Professor –2, Reader –2, Lecturer – 14, Associate Lecturer - 5.

**Number of Students enrolled :** B.E. – 51, BCA – 27, BBA- 50, BBA (IT) – 6.

**Events :****A. Foundation stone laying ceremony :**

1. Mr. G.P. Birla, Chairman, BIT laid the foundation stone of the new building at Knowledge oasis Muscat on 21.12.2003.
2. Students presented their projects on animation and multimedia to the Chairman on 21.12.2003.

**B. Research Paper Presentation :**

1. Dr. Peeyush Tiwari presented a paper at Sultan Qaboos University, Muscat on e-education.

**C. Resorce Person :**

1. Dr. Munish acted as resource person at Indian Schools in Dubai and Muscat on CBSE curriculum in commerce.

**D. Quizzes, Debates and entertainment programmes :**

1. Students conducted various quizzes, debates, elocution and entertainment programmes during the academic year 2003-2004.

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**UNIVERSITY POLYTECHNIC**

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The University Polytechnic was established in 2001 as a joint venture between the Birla Institute of Technology, Mesra and the Deptt. of Welfare, Govt. of Jharkhand. The objective was to develop supervisory level trained manpower who could play a meaningful role in the development of Jharkhand State in particular, and the Nation in general. An executive committee to lay down policy guidelines and to monitor the functioning of the Institute and was set up in 2001 with a vision to provide a model Polytechnic Institute to the eastern region of India. The first batch of the students comprising 6 PT (Primitive Tribe), 40 ST and 15 SC students, including 11 girls in all, were admitted in November, 2001 in Electronics Engineering & Automobile Engineering branches.

Two new disciplines, Computer Engineering & Manufacturing Technology, were introduced during 2002-2003 with a new admission policy framed by the Executive Committee, wherein 25 students were admitted to each of four disciplines with the following reservation policy: 5% PT, 40% ST, 15% SC, 8% OBC & 32% General. Seven students were nominated by Welfare Deptt., Govt. of Jharkhand.

During the year 2003-2004 the following development programmes were undertaken :

1. LAN Networking of systems of Computer Lab. was completed.
2. The process of computerized management and operation of the University Polytechnic Library was initiated, and the exercise is currently in progress.
3. Computerized operation of accounting of hostel mess was introduced. Further, evening and off-working hour classes were organized on a regular basis for the senior two batches for providing them additional practice session of computer applications during Monsoon and Spring Semester, 2003-2004.

A Training & Placement Cell was constituted in August, 2003 to organize and facilitate training & placement of the students. In all four industrial visits and five institute –industry interaction programmes were organized during January & February 2004. A 3-day seminar on “Aspects of Personality Development” was organized for 5<sup>th</sup> semester students during December, 2003.

Cultural Committee, Sports & Games Committee and Creativity Forum were constituted during Monsoon Semester 2003 to organize and promote activities in the respective fields.

A team from City & Guilds, London (U.K.) visited the Institute during MO-2003 for exploring the possibility of accreditation and joint certification of the diploma offered by the University.

The ground floor of the new Boys’ Hostel, presently under construction, was made available for occupation in December, 2003 and accordingly, 72 students moved to that hostel in January, 2004.

**Degree/Diploma Offered :** Diploma in Engineering – Automobile Engineering, Electronics Engineering, Computer Engineering, Manufacturing Technology.

**Faculty Position :** OSD –1, Lecturer – 3, Associate Lecturer –6, Scientific Officer –2, Supervisor – 1.

**Number of Students enrolled with Department :** 244

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

### **A. Publication by Faculty :.**

#### **I. Books :**

1. OAND SHE DANCES BY THE SWAN LAKE” PUBLISHER : Societe des Elrivains, Paris, France. Dated: 13 Oct. 2003 by Dr. Balrendra Nath Sanyal.

#### **B. Workshop attended by faculty members.**

1. Ms. Sumana Kumari and Ms. Rannushree attended one day International Workshop on Wireless Communication under EURO ASIA LINK Programme organized by B.I.T. Mesra, Ranchi on 13 Nov. 03.

#### **C. Students Activities :**

1. Seminar : A 3-day seminar on “Aspects of Personality Development” was organized for 5<sup>th</sup> semester students during December, 2003.
2. Institute-Industry interaction programme: Lecture-cum-interaction session for VI Semester & IV Semester students were organized as given below :

<b>Name of Dignitaries &amp; Industries</b>	<b>No. of Participates</b>	<b>Date</b>
Sh. N.C. Agrawal, Meditron, Mesra, Ranchi.	36	31.1.2004
Mr. M.K. Gupta, Indo Danish Tool Room, Jamshedpur.	83	7.2.2004
Mr. Manoj Sinha, Auto Bikes, Main Road, Ranchi.	46	21.2.2004
Mr. S.K. Bhattacharya, MIMEC Electronics, Namkum, Ranchi.	48	28.2.2004
Mr. Himanshu Shekhar Singh, Basudeb & Sons, Ranchi.	46	28.2.2004

#### **3. Sports :**

The Polytechnic Football Team was declared runners-up in the inter-hostel bootball championship tournament of the University during 2003. The Women Athletic Team of the Institute won the Overall Championship Trophy of the University in the women’s section during 2004, wherein Ms. Fulmani Telra of the Universtiy Polytechnic was awarded the Individual Championship Trophy in women’s section.

#### **4. Cultural Activities :**

On the occasion of 56<sup>th</sup> anniversary of our Independence day, various programmes like Quiz, Painting/Sketch display, Rangoli, Debate, Dance Songs & Drama were organized on August 14 & 15, 2003. Two more cultural programmes on Teacher’s day & the Republic day were organized during 2003-2004.

#### **5. Projects :**

Several projects like assembly of digital clock, Hi-Fi music system, black & white TV set Auto Electrical System of Maruti 800, Brake system of FIAT, etc. were successfully completed by the students during the session 2003-2004.

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**CENTRAL LIBRARY & DOCUMENTATION  
SERVICES**

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## **1. Computerisation of Library**

Two CCD bar code scanners have been upgraded with Laser scanners for better performance.

12 PCs were added for internet browsing during the year.

2 CD Writers were also added during this period.

One laser printer HP 1010 was added.

## **2. Book Fair**

A book Fair was held from 17<sup>th</sup> to 18<sup>th</sup> Oct., 2003 for bulk purchase of books. 18 publishers and vendors from Kolkata, 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 departmental heads.

## **3. Journals**

195 print journals were subscribed for the year 2003-2004 which included the IEEE/IEL.

## **4. Online Journals**

The university through INDEST consortium has continued the online subscription of following IEEE/IEL journals and hard copy under ASPP. By this more than 4000 (four thousands) publications which includes conference proceedings and standards are available online. ASCE (American Society of Civil Engineers) journals numbering 30 and ASME (American Society of Mechanical Engineers) journals numbering 18 were subscribed bringing the total no of on line journal subscription to 169.

The following online journals are available with access for full text.

- IEEE/IEL
- ASCE
- ASME

Apart from these under the UGC Infonet scheme we have received free access to 47 journals comprising the following.

- American Physical Society
- Royal Society of Chemistry (UK)
- AIP (American Institute of Physics)
- ACS (American Chemical Society)

More journals are expected to be available under this scheme.

## **4. Ernet facility under INFLIBNET of UGC**

The library has been provided 512kbps SCPC DAMA VSAT connectivity by ERNET under the UGC Infonet scheme. The equipment consists of VSAT equipment, an outdoor dish antenna of 2.4m diameter. The connectivity was commissioned on 4<sup>th</sup> of March 2004. 90% of the expenses for this connectivity has been met by UGC.

## **5. Books**

Addition during the year

- General Books – 7315  
Total No. of Books in General section – 78275
- SC/ST Books – 2436  
Total No. of Books in SC/ST section – 20237
- Bound issue of journals added – 1,350  
Total No. of bound journals – 17, 277

## **6. CDs**

500 electronic documents were added which include CDs, floppies and audio cassettes.

## **7. Training and Staff Development**

The following training programmes were attended by the library staff.

1. 2<sup>nd</sup> to 7<sup>th</sup> Feb. 2004 E-Resource Management using UGC Infonet at INFLIBNET, Ahmedabad attended by K S Naganarasimha.
2. Workshop on use of INDEST E – Resource sponsored by MHRD at IIT, Kharagpur attended by Mr. Neeraj Kumar and Mr. Ashutosh.

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## **TRAINING AND PLACEMENT DIVISION**

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## **Campus Placements**

BIT has a good track record of student placements through campus recruitment. Several organizations covering almost all sectors of the economy visit the campus every year to conduct selection tests on campus. Visits by leading organizations year after year as well as introduction of new companies every year ensures that a majority of students are well placed during the final year of their study.

## **Training & Placement Division**

Training & Placement Division has the responsibility of facilitating the Campus Recruitment Programme. The Placement Division 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 organizations, selection procedure, preparation methods & resources thereby ensuring that the students are adequately equipped to face the recruitent tests. A team of Student Placement Coordinators duly assists the T & P Office.

Placement Office ensures and takes care to provide the best possible arrangements and hospitality for the visiting companies' officials. The central computer facilities linked to the net through a VSAT are adequate for an online/offline test for more than 200 students at one time. The mini auditorium as well as the seminar halls equipped with audio-visual equipments provides the ideal venue for campus selection activities like Presentaitons, Written Tests, and Group Discussions & Interviews. The teams from the companies have a comfortable stay at the Institute Guest House located in one of the most scenic sports in the campus.

The Training & Placement Division has contributed towards the Industry-Institute Interaction through participation of the Industry in various technical events, seminars, Inter College competitions etc. The interactions have lead to a wider understanding with the Industries and their active participation in campus activities beyond the campus recruitment. A collaborative arrangement with the Larsen & Toubro has resulted in Institution of a Henning's award for best Technical Paper Presentation from among the tudents of Mechanical Engineering. Verizon Data Products Limited organized an Inter College IT Quiz Competition in which several colleges participated. Training & Placement Division actively interacts with the alumni of the Institute and the same has resulted in several alumni visiting the Institute for giving guest lectures.

During 2003-2004, several premier organizations visited the campus offering 284 appointments to the students from different disciplines. The salaries offered to the young engineers selected through campus recruitment vary from company to company and industry to industry. Approximate range of salaries offered by the visiting organizations in the year 2003-2004 is indicated in the table given below. Salaries, over the years, have shown an increasing trend and remains, apart from the job profile, the second most important point of consideration by the students.

Industry Annual Salary offered (Rs. lakhs)\*

Manufacturing/Engg. 1.8 – 4.5

Software/Computer 2.0 – 4.5

Others 1.80 – 3.4

- Gross salaries the first year of employment

#### **Placement 2003-2004:**

<b>Discipline/Branch</b>	<b>Students Placed</b>
B.E. Computer Science	70
B.E. Electronics & Communication	63
B.E. Electrical & Electronics	42
B.E. Mechanical	28
B.E. Production	6
B.E. Polymer	2
B.E. Civil	1
MCA	30
M.E. Software Engineering	4
M.Tech. Computer Science	3
M.E. EEE	2
M.Sc. Information Technology	7
MBA	21
B.Pharm	5
Total No. of Appointments	284

## COMPANYWISE PLACEMENT

Sl. No	Company Name	Students Placed
1.	Tata Consultancy Services (TCS)	63
2.	Oracle	10
3.	Cognizant Technology Solutions	21
4.	Blue Star Infotech Limited	7
5.	HCL Technologies	15
6.	Kanbay	3
7.	Tata Elxsi	13
8.	Zensar	5
9.	Syntel	7
10	Wipro	25
11	Birlasoft	14
12	TATA Telecom	2
13	Morotola	0
14	Ushacomm	4
15	IBM	8
16	Digital	13
17	HCL Perot	2
18	Verizon	4
19	Catsglobal	4
20	NEI	3
21	L&T Powai	3
22	TATA Motors	11
23	TELCON	2
24	L&T ECC	1
25	TISCO	10
26	TINPLATE CO.	2
27	STERLITE	1
28	ESSAR	3
29	ISPAT	8
30	Tata Ryerson	1
31	IDBI Bank	5
32	Tata Steel (Systems)	4
33	HCL Infosystems	2
34	Dr. Reddy's	5
35	Reliance Infocomm	3

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## STUDENTS ACTIVITIES

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There are 23 societies/clubs in the Institute for various types of extra curricular activities as follows :

ACM, AVEC, BNC, BSP, DANCE CLUB, DRAM SOC., E. SOC., FAS, HAC, HAM, IACGS, IEE, IEEE, LEO, MUSCI CLUB, NAPS, NSS, OBSA, PHARMA SOC., PHOTO SOC., ROTARACT, SPICMACY, UNESCO.

Each society/club has been constituted for some specific purpose of activities. In addition to organizing their various important events from time to time through out the year, all the societies actively participate to celebrate the B.I.T Annual Festival, BITOTSAV by organizing their various technical & cultural events.

This year, the BITOTSAV under the name – RAGAZZO-2004 was celebrated from 8-13 Feb. 2004 and a national level technical and cultural extravaganza was organized in which the students from all the B.I.T. family and the other technical Institute of India participated.

The RAGAZZO – 2004 started with a Panel Discussion on Indian Industry – Prospects & Challenges. Mr. Birju Mohan Jacob of Verizon India, Mr. Abhijeet Mitra of Tata Steel, Mr. Hemant Kumar of Usha Com., Mr. AP Mishra of L&T, Prof. Ranjan Ghosh of IIM Calcutta, Mr. N.K. Datta of Tata Motors and Mr. R.C. Gaur of State Bank of India participated as the panelists. On the same day, the Verizon Challenge Inter College Quiz Contest was conducted by the famous Quiz master Mr. Charanjeet Singh. Out of 43 participating teams, only the 6 teams qualified for final and the following teams got the prizes.

1. ISM Dhanbad Team - I prize
2. Team comprising of Vineet, Siddharth and Gaurav of B.I.T. Mesra - II prize
3. Team comprising of Gaurav, Shabda and Chaitanya of BIT Mesra - III prize

In addition to the regular features like Music Nite, Intro Skit, Dance Nite and the Heritage Nite, a fabulous performance by the famous EUPHORIA band was the Special attraction of this festival.

The B.I.T. students are also encouraged to participate in the Annual Festival organized by the other technical Institutions. This year, Shireesh (BE/124/01), Deeptha Gopal (BMI/12/03) and Neha Sinha (MCA/1008/03) all from BIT Mesra received third prize in Antakshari event during the IIT Kharagpur Annual Festival – Spring Fest. 2004.

Some important activities of various societies during the Calendar Year (2003-2004) follow as :

### **Music Club :**

In the sweet memory of our student late Animesh Sharan, an eastern musical competition was organized by the music club on 12<sup>th</sup> Feb. 2004. The event was divided in two parts : JHANKAR (Instrumental) and Eastern Vocals. Animesh Sharan's fathers graced the occasion by his presents. The case prize for the event included a sum of rupees one thousand and a winning trophy in name of Animesh Sharan who was a active member of music club. The winners of the instrumental were Gaurav Agrawal on the Hawaiian gitar, Subradeep Saha on tabla and Prasun Basu on the gitar.



### **NSS :**

1. NSS volunteers organized various competitions at Guru Nanak Home for Handicapped Children in Bariyatu, Vivedita Ashram, Stephen Blind School etc.
2. B.I.T. Darshan was arranged for 100 adivasi students from the 4 states. Besides this, tree plantation, Science exhibition for rural students, Nukkad Natak Competition, Blood donation Camp at BIT Dispensary for RIMS Blood Bank etc. were also organized.

### **NEWS AND PUBLICATION SOCIETY (NAPS)**

1. NAPS setup an info cell to provide information to the participants and provided latest updates of scores of various teams during BIT Annual Festival.
2. A daily update news reports of RAGAZZO – 2004 were published in the form of 'Utsavnama'.
3. An annual magazine 'Confluence' was published and distributed among the faculty and final year students and the 10 copies of the same were sent to each of the BIT Extension Centre.

### **SPIC MACAY**

SPIC MACAY organized VIRASAT – 2004 and the following Indian Artists were invited for their performance.

14<sup>th</sup> Jan. 2004 - Pandit Raghunath Seth for Flute and Pandit Ajay Pohankar as vocalists.

26<sup>th</sup> Jan. 2004 - Roze Khan and troupe performed Rajasthani folk music & dance.

7<sup>th</sup> Feb. 2004 - Kedia Brothers accompanied by their guruji (father) Shri. Sambhu Dayal performed Sitar & Sarodh (jugalbandi) on the occasion of the Heritage Nite during BITOTSAV – 2004.

### **UNESCO :**

As usual a Souvenir of the outgoing batch of under graduate students was published by this club.

### **HIGHLANDERS ADVENTURES CLUB (HAC)**

The Highlander's club, B.I.T. Mesra, Ranchi conducted the following activities during the year 2003- 2004 :

1. A Team of HAC visited Himanchal Pradesh and J&K Leh region during the summer vacation 2003.
2. A parasailing 3 day event was organized at Dipatoli Camp area, Ranchi on Feb. 2004 where 140 students participated.
3. 3 day Rock climbing course was organized by the club at the Tagore Hill, Ranchi during March 2004.

4. A group of 39 students took part in National Winter Trekking Expedition at Goa and Karnataka during winter vacation of 2003. The treks were organized by Youth Hostel Association of India, Goa unit. About 112 km trek was covered by our students including 2 days Jungle Safari, 2 days Hills and 3 days beautiful sea beaches of Goa. A parasailing course was also organized by HAC at Mazorda sea beach at Goa on 24.12.03.
5. A cycle race was organized by the club during April 2004 both for the boys and the girls.
6. A group of 9 students took part in National Summer Trekking Expedition at Har-Ki-Doon at Uttaranchal during May 2004. It was 40<sup>th</sup> expedition of this prestigious club.

\*\*\*

## **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 - 9
2. Half free ships - 144

### **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.

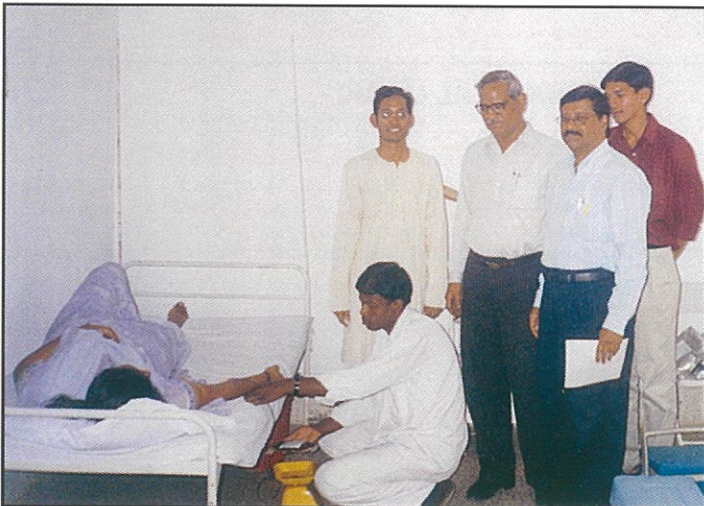
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**WORKING FOR THE SOCIAL CAUSE**



**IN THE SERVICE OF NATION**



**HELPING THE NEEDY**

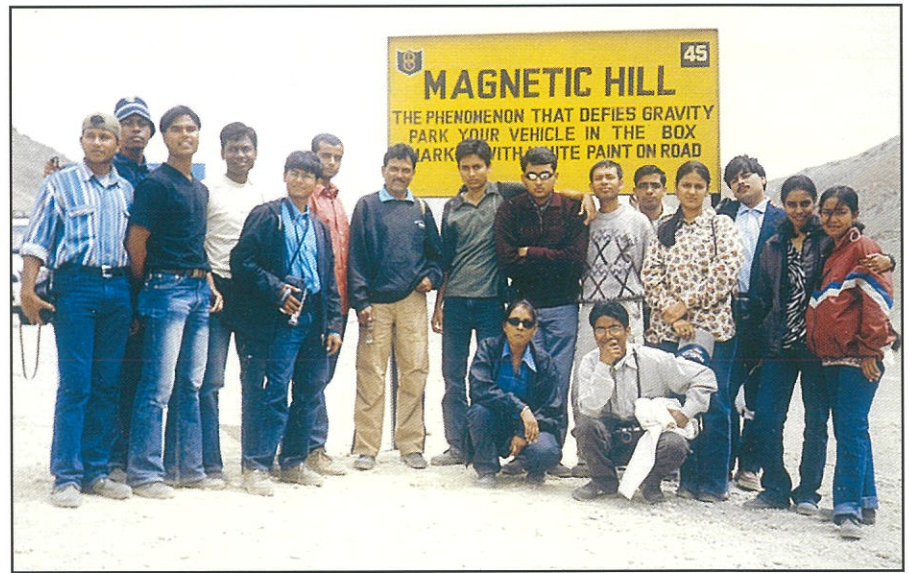


**GODESS SARSWATI BLESS US**

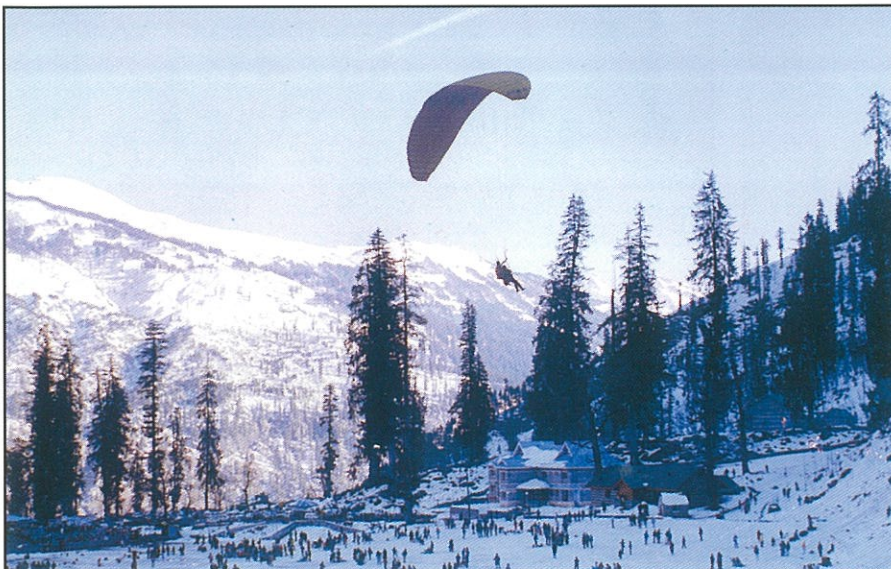




**NATURE'S DESIGN**



**NATURAL MAGIC**



**SKY IS THE LIMIT**





**DANCING UNITEDLY**

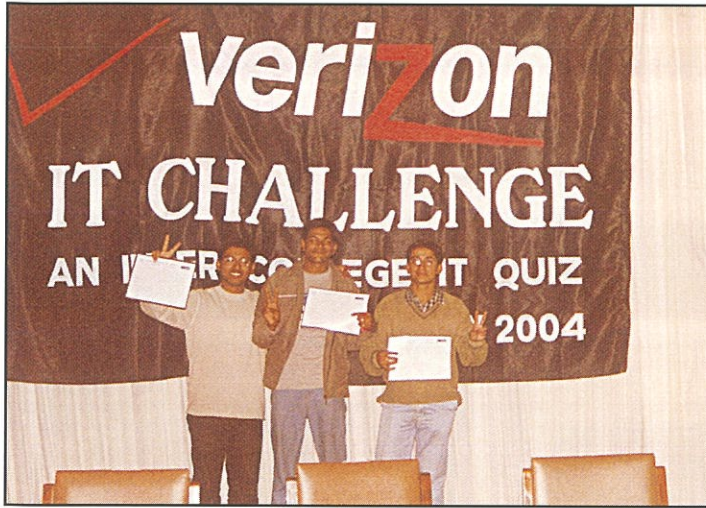


**MAINTAINING THE RYTHEM**



**MAINTAINING THE RYTHEM**





ACCEPTING THE CHALLENGE



STAGE IS SET



UNITY IS OUR STRENGTH



READY, STEADY, GO

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## ANNEXURE

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## MEMBERS OF THE GENERAL COUNCIL

### Founder Members:

- |                        |                       |
|------------------------|-----------------------|
| 1. Shri G.P. Birla     | 7. Dr. A. R. Kidwai   |
| 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 Ghandy  |                       |

### Life Members

Dr. H.C. Pande

### Members by Representation:

- |   |  |
|---|--|
| 1. Representative of Ministry of Human Resource Development Govt. of India      | : Shri R.D. Sahay<br>Dy. Secretary                           |
| 2. Representative of the University Grants Commission                           | : Dr. Kota Hari Narayana<br>V.C., University of Hyderabad    |
| 3. Representative of the Department of Science & Technology Govt. of India      | : Shri H.K. Mittal<br>: Adviser & Head (NEB)                 |
| 4. Representative of the All India Council for Technical Education              | : Prof. Raj Pal Singh<br>Emeritus Professor,<br>WRDTC        |
| 5. Representative of the Department of Science & Technology Govt. of Jharkhand. | : Mrs. Raj Bala Verma, IAS<br>Commissioner-<br>cum-Secretary |
| 6. Representative of Birla Institute of Scientific Research                     | : Shri S.S. Jajodia  |
| 7. Vice Chancellor of the Institute   | : Prof. S.K. Mukherjee                                       |

### Corporate Members:

- |   |                                      |
|---|--------------------------------------|
| 1. M/s National Engg. Industries Ltd.       | : Represented by<br>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

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Commissioner, South Chotanagpur Division, Jharkhand, Ranchi (Ex. Offico)	:	Smt. Sheela Rapaj Kisku, IAS
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Vice-Chancellor, BIT, Ranchi (Ex.Offico)	:	Prof. S.K. Mukherjee
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Joint Secretary

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Gaddhyan

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

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

### Secretary

Registrar : Dr. K.V.Krishnamurthy

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### Members

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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

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### Members:

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Dr. Madhukar S. Bhat  
Dr. Krishna Kumar

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Government of Jharkhand, (Ex. Offico)  
Director of Higher Education : Dr. K.K. Srivastava  
Government of Jharkhand, (Ex. Offico)

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Dr. S. Kumar	Prof. S.C. Goel	Dr. Ashok Mishra
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	Dr. A.N. Sinha	Dr. D. Jairath
Prof. R.K. Narayan	Dr. G.M. Panpallia	Dr. D. Sasmal
Prof. Ram Pal Singh	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

\*\*\*

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Treasurer	:	Shri S.S. Jajodia
Registrar	:	Dr. K.V. Krishnamurthy
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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 & Professional Development : Programme		Dr. (Mrs.)M. Mukherjee
Associate Dean		
Women Affairs	:	Dr. (Mrs.) Usha Jha
Boys Affairs	:	Shri A.K. Thakur
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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. Ashok Mishra



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Polymer Engineering	:	Dr. (Mrs.) M. Mukherjee
Information Science	:	Prof. A.M. Agrawal
Production Engineering	:	Dr. S. Kumar
Physical Education & Sports	:	Dr. D. Sasmal
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
Environmental Engineering & Science Group	:	Dr. Gopal Pathak
OSD & Controller Entrance Examination	:	Prof. S.P. Bhatnagar
Controller of Examination	:	Dr. Mohan Verma
Co-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
Training & Placement	:	Shri B.B. Pant
Cultural Coordinator	:	Prof. Ram Pal Singh

\*\*\*

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- |                                |                        |
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Panel of Experts from outside of the Institute

- |  |   |
|--|---|
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|--|---|

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- |                                |                    |
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| 5. Dr. N.C. Mohanti            | 6. Dr. Mohan Verma |

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| 3. Dr. Taushif Monif (Industry)<br>Associate Director (Clinical Pharmacology<br>& Pharmacokinetics) Ranbaxy,<br>Research Laboratories<br>Udyog Vihar, Plot No. 20, Sector-18,<br>GURGAON-122001 | 4. Dr. Roop K. Khar<br>Professor, Hamdard<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)  
Institute of Pharm. Education &  
Research, Baraon, Wardha 442001.

8. Dr. S.K. Kulkarni  
Professor, University  
College of Pharm. Sc.,  
Punjab University,  
Chandigarh.

### **Department of Mechanical Engineering**

Chairman - Dr. Ashok Mishra, Head of the Department.

- Members -
- |                      |                         |
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| 3. Prof. B.N. Giri   | 4. Prof. P.K. Choudhary |
| 5. Dr. Arbind Kumar  | 6. Dr. S.Kumar          |

Panel of Experts from outside of the Institute

- |  |   |
|--|---|
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| 3. Dr. Jyotirmoy Saha<br>Jadavpur University | 4. Sri. A.P. Mishra<br>Kansbahal, Rourekela |

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

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- |                     |                            |
|---------------------|----------------------------|
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| 3. Dr. J.T. Andrews | 4. Dr. (Mrs.) S. Keshri    |
| 5. Dr. N.C. Mohanty | 6. Dr. (Mrs.) M. Mukherjee |

Panel of Experts from outside of the Institute

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| 3. Dr. T.K Dey<br>IIT, Kharagpur                          | 4. Dr. P.S. Gupta<br>Indian School of Mines,<br>Dhanbad   |

B. Postgraduate

Chairman - Dr. P.K. Barhai, Head of the Applied Physics

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- |                     |                         |
|---------------------|-------------------------|
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| 3. Dr. S. Konar     | 4. Dr. Dr. S. Kumar     |
| 5. Dr. N.C. Mohanty |                         |

Panel of Experts from outside of the Institute

- |   |                                       |
|---|---------------------------------------|
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| 3. Dr. A. K. Roy<br>RDCIS, SAIL, Ranchi         |                                       |

**Department of Applied Mathematics**

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- Members -
- |                       |                         |
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| 3. Prof. Sukesh Kumar | 4. Prof. A. Prasad      |

Panel of Experts from outside of the Institute

- |   |   |
|---|---|
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| 3. Prof. K.C. Prasad<br>Ranchi University, Ranchi       | 4. Prof. S. Dey<br>Indian School of Mines,<br>Dhanbad |

**Department of Applied Mechanics**

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- Members -
- |                       |                            |
|-----------------------|----------------------------|
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| 3. Prof. Rampal Singh | 4. Prof. U.S. Prasad       |

Panel of Experts from outside of the Institute

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- |                            |                       |
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| 3. Dr. Balram Singh        | 4. Mr. Arun Kumar     |
| 5. Dr. Ashok Misra         | 6. Prof. A.K. Ray     |

Panel of Experts from outside of the Institute

- |  |  |
|--|--|
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- |                          |                    |
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- |   |                                      |
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| 5. Dr. B.N. Das          | 6. Prof. R.C. Jha    |
| 7. Dr. T. Chosh          |                      |

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2. Dr. Samiran Choudhary  
Jadavpur University

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3. Dr. Nisha Gupta

4. Dr. J.S. Roy

5. Dr. S.K. Ghorai

6. Prof. S. S. Sonanki

7. Dr. P.K. Barhai

8. Dr. B.M. Karan

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REC, Rourkela

2. Dr. P.C. Rakshit  
Calcutta University

3. Dr. Ajay Chakraborty  
IIT, Kharagpur

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2. Prof. A. Prasad

3. Mr. Utpal Baul

4. Mrs. S. Shivani

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IIM, Kolkata

2. Prof. J. Mahapatra  
Sambalpur University

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2. Prof. B.L. Gupta

3. Mrs. S. Goswami

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IIT Kharagpur

2. Prof. P. Ghosh,  
Rtd Prof, Dept. of  
Polymer, Sc.& Tech.

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2. Prof. Vinay Sharma  
3. Dr. Ashok Misra  
4. Dr. A.M. Agrawal

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3. Dr. S. Sahu IIT, Kharagpur	4. Dr. S.K. Agrawal M.N.R.E. College, Allahabad

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3. Dr. Gopal Pathak  
4. Dr. P.K. Barhai

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3. Dr. S.M. Ramasamy Bharathidasan University Khajamalai Campus, Tiruchirappalli Tamilnadu	4. Dr. P.L.N. Raju Dehradun

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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          |

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Chairman - Head of the Department.

- Members -
- |                          |                              |
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| 3. Dr. M.S. Nathawat     | 4. Prof. K.R. Roychoudhury   |
| 5. Prof. S Chakraborty   |                              |

Panel of Experts from outside of the Institute

- |   |  |
|---|--|
| 1. Prof. S. Chakraborty<br>Jadavpur University, Kolkata | 2. Prof. B.K. Chanda<br>MECON, Ranchi  |
| 3. Prof. B.K. Sengupta<br>IIT, Kharagpur                | 4. Dr. U.K. Banerjee<br>IIT, Kharagpur |

**Department of Information Science**

Chairman - Dr. A. M. Agrawal, Head of Department

- Members -
- |                    |                     |
|--------------------|---------------------|
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| 3. Dr. G. Sahoo    | 4. Dr. Bhaskar Karn |

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**BIOTECHNOLOGY CENTRE**



**BADMINTON STADIUM**



**NEW HOSTEL (BOYS)**



**DEPARTMENT OF HOTEL MANAGEMENT**



2007-2008  
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