ANNUAL REPORT

1989-90

BIRLA INSTITUTE OF TECHNOLOGY
MESRA, RANCHI (INDIA)

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I N D E X

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P r e f a c e

The B.I.T., Mesra was established by the Hindustan Charity Trust 35 years ago as an all-India Institute for Technical Education, Research and Training for meeting the emerging technical manpower needs of independent India. Over the years, since its inception, it has developed an ethos for excellence, where initiative is nurtured, where new ideas are received in an atmosphere of constructive criticism. It has served as a catalyst in developing society, intimately involving itself with the technological development of India.

In pursuit of its objectives, it continues to provide excellent Under-graduate programmes which attract the cream of the students through an all-India Entrance Examination.

The curriculum places a strong emphasis on understanding of fundamentals as well as specialized knowledge. Students are involved in the project-work, and wherever possible, they are associated with live industrial problems referred to by the Industry. Thus the students gain necessary expertise in the current technology as well as acquire the capacity to solve unforseen problems and meet the impact of the rapid development of new technology. This is evident from the fact that BIT graduates are in great demand and absorbed throughout the country.

The post-graduate programmes of the Institute are modest and picking up pace in the new and emerging areas of technology. Today the Institute offers 15 programmes at the post-graduate level in various disciplines of Technology, Management, Computers and Pharmaceutical Sciences. Several programmes are distinguished by their inter-disciplinary approach and emphasis on a comprehensive thesis project. Besides the regular students who are admitted to M. E.,

M. Pharm. programmes, after qualifying the Graduate Aptitude Test in Engineering (GATE), the Institute has on its roll a good number of sponsored candidates deputed from Defence and various other organisations.

With the objective of serving the cause of technical education in the region by promoting the concept of continuing education among practising graduate engineers and Managers, the Institute runs need-based part-time Post-graduate programmes of modular nature in the various areas of specialization in Engineering and Management disciplines. Part-time courses in Computer Applications have also been introduced during the year under report. All these programmes are being well-received and are quite effective.

The third facet of our academic programme is the research activities of the Institute that provide new knowledge created by faculty and students through our Post-graduate and Doctoral programmes in addition to the developmental research through sponsored projects. During the recent years, the Institute has deliberately attempted to provide a frame-work for various academic groups to undertake projects in identified thrust areas on an inter-disciplinary basis. Some of the identified thrust areas are Energy, Plasma, Microprocessor Applications, Computer Aided Design & Robotics, Entrepreneurship development and Rocket technology.

The Institute has enjoyed a close collaboration with Industry. A significant achievement has been the successful techno-entrepreneurship programme now called BIT-STEP. Under this programme senior students are involved in developing scientific equipment or components currently imported. The students are assisted and encouraged to develop indigeneous substitutes of these imported items. The resultant know-how has led to the establishement of

a number of useful and viable manufacturing units, owned and run by young techno-entrepreneurs.

The Institute is organising a programme of high technology applications in the energy area. A Hi-Tech Wind Energy Convertor of German design has been acquired and would be set up for experiments. A solar heat convertor based on an Australian design has been developed which is to shortly lead the way for designing an experimental 100 kW steam generating station. Start has also been made in establishing basic facility in emerging area of Plasma technology so that in the near future expertise can be developed in the area of Plasma Engineering.

Date: June 30, 1990
B.I.T., Mesra, Ranchi.

ADMINISTRATION

B.I.T. is a 'deemed University' under sec. 3 of the UGC Act, 1956. It functions under the overall supervision, direction and control of a high-power Board of Governers, comprising representatives of the Ministry of Education, Govt. of India, the UGC, the State Govt., the Chancellor, the AICTE, the Trust and the Institute Faculty. Mr. G. P. Birla is the Chairman of the Board of Governors. The Governor of the State of Bihar is the Chancellor of the Institute. Composition of the Board of Governors is given in Annexure - I.

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

Financial advice to the Institute is given by the Finance Committee whose constitution is given in Appendix II. Similarly, the Building and Works Committee advises the Institute in matters relating to building works activity. The constitution is also given in Annexure - II.

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

GENERAL REVIEW

BRIEF HISTORY

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

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

On the basis of its continued excellence, and approval by the UGC, the Institute was declared a "Deemed University" in August 1986 under Section 3 of the UGC Act.

Since its inception the Institute is updating its academic standards, and has now acquired a pride of place in Technical Education and is one of the Premier Institute in Eastern India.

COURSES & DEGREE PROGRAMMES

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

Course	Intake capacity	Duration of course	Year of introduction of the course
I. BACHELOR OF ENGINEERING			
1. Civil	45	4 years course	1957
2. Computer Science	30	-do-	1983
3. Electrical & Electronics	45	-do-	1955
4. Electronics & Coomunication	60	-do-	1964
5. Mechanical	60	-do-	1955
6. Production	30	-do-	1964
II. PHARMACEUTICAL SCIENCES			
1. B.Pharmacy	30	-do-	1972
2. M. Pharmacy	10	3 Semester or 1.½ years	1983
(i) Pharmaceutical Chemistry (ii) Pharmaceutics			
III. MASTER OF ENGINEERING			
1. Civil	2	-do-	1965
Soil Mechanics Structural & Foundation Engg.			
2. Electrical	12	-do-	1964
(i) Control System & (ii) Power System			
3. Electronics & Communication	12	-do-	1965
(i) Instrumentation (ii) Microwave Engineering			
4. Mechanical	6	-do-	1964
Head Power Engineering			
5. Space Engineering & Rocketry	10	-do-	1965
(i) Rocket Propulsion & (ii) Aerodynamics			

Course	Intake capacity	Duratopm of course	Year of introduction of the course
IV. MASTER OF BUSINESS ADMINISTRATION	30	2 Years	1980
(i) Marketing			
(ii) Personnel			
(iii) Industrial Management			
(iv) Finance			
& (v) Maintenance Management			
V. M.C.A. (MASTER OF COMPUTER APPLICATIONS	30	3 Years Course	1984
VI. D.C.A. (DIPLOMA IN COMPUTER APPLICATIONS	30	1 year	1988

VII. CONTINUING EDUCATION PART TIME POSTGRADUATE PROGRAMME

To enable Working Engineers to update their technologies, the part-time postgraduate programme offers three levels

A Certificate of Merit after completing 5 units
A Diploma after completing 10 units and
A Degree after completing 15 units of course work.

The disciplines are:

1. Civil Engineering : Structural Design
2. Computer Applications
3. Electrical Engineering : Control System & Power System.
4. Management : Marketing, Personnel, Industrial Management and Finance.
5. Mechanical Engineering : Design of Mechanical Equipment.

ENROLLMENT

There are 1626 students who have enrolled during the current Academic Year 1989-90. The branch-wise enrollment is detailed below. Of these there are 172 Girl students, and 88 Foreign students.

	Full Time	Part Time
B.E.	1054	-
B.Pharm.	117	-
M.C.A./D.C.A.	126	69
M.B.A.	64	57
M.Pharm.	12	-
M.E.	58	69
	1431	195 = 1626

FACULTY & STAFF

Against the sanctioned strength of 173 Faculty positions, 149 are filled with 24 vacancies. The break-up is as follows:

Category	Sanctioned Strength	In Position	Vacancies
Professors	44	40	4
Associate Professor	49	38	11
Lecturer Associate Lecturers	80	71	9
	173	149	24

The number of administrative and supporting staff are approximately 220. In addition, there are about 250 Class IV Staff to look after the General Maintenance of electricity, water supply, Gardens, Security, Hostels and allied services.

All academic staff have been provided accomodation on the Campus.

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

CAMPUS AND PHYSICAL FACILITIES

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

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

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

II. Description of Buildings on the Institute

1. Institutional Buildings	Sq.mtrs.
i) Main building & Administrative Block	3700
ii) Class room and laboratories, Drawing Halls, Staff rooms etc.	9300
iii) Library Block	2600
iv) Space Engg. & Rocketry Block including explosive and Rocket Fuel Centre	930
v) Workshop Sheds, General Stores, Garrage/Godown	3721
vi) Gymnasium	850

2. Others — Sq.mtrs.

i)	Animal House	400
ii)	NCC Block	400
iii)	Primary/High School (temporarily housed in Mechanical Engg. Block	744

Note: During the year 1987-88 a Navodaya Vidyalaya has also been established in the Institute campus. Presently it is housed in temporary sheds constructed for the purpose.

III. Residential Complex

i)	Staff Quarters in differen t categories	296
ii)	Residential Complex for supporting services: Forest Guards, Diary, Shop Keepers, Washermen etc.	70

IV. Hostels

i)	Seven Boy's Hostels	1450 Single Rooms
ii)	One Girls' Hostel	60 rooms
iii)	One Foreign Students Hostel	32 rooms

V. Guest accommodation

The Institute maintains two Guest Houses. A General purpose Guest House with 8 furnished rooms and a VIP Guest House with 3 deluxe double bed rooms to accommodate guests appropriately.

VI. Auditorium

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

VII. Games & Sports

The Institute has a Gymnasium and is spacious enough to accommodate indoor games. Extensive play grounds are provided to facilitate sports. They are:

1. Field Tracks for Sports/Atheletics/ Cricket.	-1
2. Football ground	-2
3. Hockey grounds	-2
4. Basket Ball grounds	-4
5. Volley Ball grounds	-6
6. Tennis Courts	-6
7. Badminton Courts	-6(1 indoor court)
8. Rifle Firing Range	-1
9. NCC Parade ground	-1

VIII. Canteen services

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

IX. Dispensary-cum-Health Unit

A eight bed health care unit serves the large campus community mainly as an outdoor patient unit. This unit supports three full time doctors. Excellent rapport exists for acute medical needs with the Government Medical College Hospital at Ranchi. The construction of the new Hospital building is in progress.

X. Marketing Centre

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

We hope to establish a full fledged marketing centre and cooperative Book Store to meet the growing needs of the campus. The annual needs exceeds Rs. 2 crore mark.

CENTRAL SERVICES

COMPUTER CENTRE

Computer Centre provides the central facility for the students and staff members of this Institute. It started on a modest scale with PDP-11/34 Mini computer from D.E.C., U.S.A. in 1982 and has upgraded the infrastructure from time to time not only to meet the ever increasing requirements of the Institute but the training facilities for the outside user. SN-73 which is upward compatible to PDP-11/34 has been installed and large number of BBC Micro-computers, IBM-PC's, PC-XT's and a PC/AT computer are used continuously by the users. The software support includes FORTRAN-77, BASIC, COBOL, PASCAL, C, LISP and PROLOG. We also have installed a local area network (LAN) using 80386 based file server very recently.

With support from the Dept. of Electronics, Govt. of India a "Resource Centre" for Computer Literacy and Studies in Schools (CLASS) has been established in this Institute in 1984. A series of 3 weeks duration training programme are organised for the school teachers from various schools of the Eastern Region. Under this programme after training the school teachers in the effective use of computers, the respective schools are given two BBC Microcomputers with all the necessary software. The maintenance of these computers and software needs of the schools are met by the BIT resource Centre.

In addition to providing the educational and training facilities the Computer Centre has completed many software projects. It is maintaining the pay-rolls for the Institute and academic transcripts of all the students.

With the support from Department of Electronics, Govt. of India, we are acting as a resource centre for MCA Teachers Re-orientation Training Programme from the year 1988. The participants are selected on all India level which will benefit the participating teachers for their re-orientation of MCA courses at Post-graduate level.

LIBRARY

The Library subscribes over 305 Indian and foreign journals annually. During the current year 2500 volumes were added to the existing stock of library. The up-to-date stock of the library comprises of 51,000 books and 13,000 back volumes. Facilities for microfilming and photocopying are also being provided by the library. Currentlly only ground floor is utilised, and to meet the growing needs additional floors are being built.

MICROPROCESSOR RESEARCH CENTRE

During this year the laboratory facility have been expanded to facilitate application programming on fast 32 bit processors namely:

(a) 68020 at 25 MHz, programming and real time trigger trace with performance analysis.

(b) IMST 414 Transputer System for 32 bit multiprocessor environment, emulation using PC-XT, to yield system throughput upto 10 MIPS, using occam language.

both these system design facilities are unique in the eastern sector, and gives BIT the design ability on fast real time processor based system development.

The Hewlett-Packard 9000-350 system has been installed for Al applications with UNIX-0S C, Prolog, and Lisp and assembly language facility. The system is the state of the art machine capable of expansion. Currently the HP 9000 is networked with two HP 64000 development stations to constitute the 'HP-Design Centre'.

The laboratory has completed the following projects

(a) Camma ray thickness Gauge for Tinplate Company

(b) Non contact automatic length measurement system for Usha Industries.

and the following projects are nearing completion:

(a) Control of Ortho cyclic winding machine for Usha Industries.

(b) Eddy current inspection of fast moving tinplates.

Collaborative programmes are initiated with local R & D groups for automatic gauging of rolled steel items by laser techniques combined with Microprocessor instrumentation, in-circuit PC-board checking of industrial PCB's using PC-XT and the development of speicalised programmes for public sector industries.

OUT-TURN OF GRADUATES & POST-GRADUATES

During the year 1989-90, 242 students qualified for the award of Under-graudate Degree (B.E./B.Pharm.); 140 students for the Post-graudate Degree (M.E., M.Pharm., M.B.A.,M.C.A. & DCA) and 1 students for Ph.D., the break-up is as follows:

I. Undergraduate Degree	No.of students graduate in 1989.		Total Number of graudates Upto 1989.
1.B.E.(4 Year Degree Course)			
Civil Engineering	22		
Computer Science	37		
Electrical & Electronics Engg.	54		
Electronics & Commu. Engg.	43		
Mechanical Engg.	65		
Production Engg.	1	222	7815
2.B.Pharm(4 Year Degree Course)		20	314
II.Post-graduate Degree			
1. M.E.			
Civil Engineering	2		
Electrical Engineering	7		
Electronics & Comm. Engg.	1		
Mechanical Engineering	11		
Space Engg. & Rocketry	3	24	203
Diploma in Elect. Engg.			1
Diploma in Computer Appln.	13		13
2. M.Pharm.	12		76
3. M.B.A.	64		412
4. M.C.A.	27		105
5. M.Sc.(Applied Sciences)	-		63
III.Doctoral Degree			
Ph.D./D.Sc.	1		32

ACADEMIC INNOVATIONS, RESEARCH & DEVELOPMENT

After a thorough retrospective analysis of the academic innovations of the past, and with the encouraging response received from the Government of India, the Institute's primary objective, during the year 1989-90, has been to create infrastructures for interdisciplinary arena of research and development which would storm the brains, flourish ideas, broaden the imagination of the elite scientists, engineers from different disciplines and students of the Institute to evolve new domains, newer concepts.

With this primary objective in mind, realising the significance of the historical and evolutionary aspects of scientific development, a research cell for studies on "History of Science" has already been established at the Institute in 1979. This cell, headed by its founder faculty member of International repute, is continuously growing with richer collection of books, journals and other materials for initiating investigation for research work. The centre is duly recognized by the Indian National Academy for supervising and guiding research. One of the most significant contributions of this research cell has been that the International Commission on History of Mathematics has inserted the title of its International Journal in the Indian National Language, HINDI as well; earlier the title was printed only in Five important languages of the world.

In accordance with the directives of the Ministry of Human Resource Development, Department of Education, the Institute is keeping pace with the latest technological advances in identified areas of emerging technologies and is creating necessary infrastructure for Education, Research and Training. The Micro-processor Development Centre has already established a good rapport with SAIL, MECON, CMPDI, HEC for design and development

of instrumentation and control systems for real time computer controls. Artificial Intelligence and Robot technology are being moved from the research domain to the solution of practical problems.

Currently, we are in the process of developing Plasma Engineering Laboratory. Extensive research and investigation on propagation of electromagnetic waves in plasma has been carried on. A grant-in-aid project, in this context, has already been submitted to the Ministry of Human Resource Development.

It is significant to place on record that the Institute has been the pioneer among the technological institutions to start the programme of post-graduate studies and research in the area of Space Engineering & Rocketry. It has successfully developed several rocket fuels for solid propellant rockets and has set up a sophisticated research facility in Hybrid and liquid propellant technology. Several projects have been undertaken for the Ministry of Defence, Atomic Energy Commission and I.C.A.R. The work on gelled propellants is noteworthy. Extensive investigations have been made in developing rocket systems for weather modification. The Department also organised the Fourth National Convention of Aerospace Engineers and All India Seminar on Aircraft Propulsion, in collaboration with the Institution of Engineers. The Department has also developed a new hydrazine based hybrid fuel. Acoustic Strand burners have been designed and fabricated to measure the burning rates of PVC-AP and HTPB-AP type solid propellants both at high and low pressures.

As initiated during the preceeding years. fibre reinforced cement sheets, design and implementation of low cost housing and improvement in rice husk cement are now on nearly completion stage. The new low cost house designs and models for effective dissemenation of knowledge regarding earthquake safety and flood mitigation along with a model of rural water supply scheme to be applied to the water starved districts of the state have been

exhibiting encouraging results.

The Institute is organising a programme of high technology applications in the energy area. A Hi-Tech Wind Energy Convertor of German design has been acquired and installed at Puri (Orissa) for experiments. A solar heat convertor based on an Australian design has been developed which is leading the way for designing an experimental 100 KW steam generating station. Significant research work has been carried out in the area of bi-fueling of I.C. Engines. Emphasis has been laid on investigation into the suitability of various types of alternate fuels for reciprocating combustion engines. Bio-gas energy and geo-thermal energy research works have also been initiated and relevant grant-in-aid projects proposals have been submitted to the Govt. of India.

Discovery of stress induced Electromagnetic Radiation (EMR) and its new bio-physical application in Neurosurgery have already brought the Institute on the international map of research. During the year 1989-90 two specific projects have been initiated in the arena of research. First, application of this new effect in understanding the behaviour of human brain, pulmonary sensor and chemoreceptors. The necessary theoretical research has been completed and experimentation, as a part of bio-engineering research, is expected to be completed during the VIII Plan of Govt. of India. Second one is the application of this effect in the development of new material.

The next important project, initiated in consultancy with "the Atmospheric Research and Exposure Assessment Laboratory, USA" and in collaboration with SAIL (R&D),

Ranchi, is the Environmental Pollution Control. The first aspect of this project is the development and testing of Receptor Models moving from the research domain into application to practical problems. Second aspect is the recovery of NO_x and SO_2 Waste gases using Electron accelerator. This project is not only of pollution control importance but also of immense importance to the Ministry of Agriculture. A complete project report is under process and would be submitted to the Govt. of India in near future.

As a part of Ph.D. programmes, in collaboration with SAIL (R&D) and MECON respectively, development of new materials for hostile environment and CAD analysis of shape control in cold Rolling research has been under progress.

"Industrial Robots and Flexible Manufacturing" and Industrial Pollution Control are two new additions to the Department of Production Engineering of the Institute.

Under the grant in aid project from Ministry of Human Resource Development for Materials Science Laboratory, Mossbauer Spectrometer-MS 1200 and Atomic Absorption Spectrophotometer - Model AA-680 are being installed which would provide experimental base to the theoretical research done in polymer technology. Design of Heterostructure lasers for use in optical communication systems and computers is one of the significant projects under progress.

The Department of Pharmaceutical Sciences has procured more equipment and instruments against the grant for "Modernization of Laboratories" sanctioned by Government of India. Two of the faculty members also presented

their research findings at the 49th International Pharmaceutical Congress held at Munich, West Germany in Sept. 1989.

A Dissolution - Dialysis apparatus has been invented by Dr. B. K. Razdan, Head of the Deptt. of Pharmaceutical Sciences, which can be used for evaluation of pharmaceutical dosage forms particularly tablets. Studies with Analgin, Paracetamol, Phenytoin tablets have shown that the dialysis rate constant obtained using this apparatus corelates very well with the blood levels of these drugs. This is the first in-vitro method by which the true bio-availability of a drug can be correlated with the in-vitro data.

The research programme in the field of synthesis of newer Medicinal agents, stability of Pharmaceutical Dosage forms, evaluation of various oils for edible purposes, and evaluation of Dosage forms is progressing well. Presently there are four research scholar registered for Ph.D. programme in this Department.

In compliance with the request of the President of the Oil Technologists Association of India (North Zone), Dr. S. P. Basu, Professor in Pharmaceutical Sciences, presented his research work at the 45th Annual convention of OTAI held in Feb., 1990. This work received deed appreciation, important among the appreciators being the Balweti Laurie & Co. Ltd. (A Govt. of India Enterprises).

Having consolidated its undergraduate programme as well as post-graudate programme in Pharmaceutical Chemistry and Pharmaceutics, the Deptt. has applied to Government of India for the sanction of postgraduate programmes in Pharmocology, Pharmacognosy and Biotechnology.

DASMUL KVATHA Extract (500 mg/Kg/ip, 1000 mg/Kg/ip.) has shown CNS depressant activity in albino mice, as it produced reduction in SMA, CAR & body tempreture, potentiation and pentobarbitone induced hypnosis, Anti-Amphetaminic activity on CNS. Further work is in progress.

The Institute has also taken up, in collaboration with the Bihar State Chemical & Pharmaceutical Corporation, a Drug development, testing and standardization facility.

The Department of Management of the Institute has been active in its own distinct way. Eminent scholars and Industrialists have been regularly invited as Guest Speakers in the various conferences. Research works on decision making, human resource management, value engineering, value and human resource development, Leadership and Managerial Effectiveness and materials management are continuously updated befitting to the latest technological requirements of the nation.

During the year under report, some of the faculty members have made outstnading contribution on national and international level. A specific project on computer vision and touch sensing system for aiding the blind persons has been undertaken and a first report has been presented at the First International Symposium on Measurement and Control in Robotics, at Houston, U.S.A. on June 20-22, 1990. In addition to the research & development works, new courses & projects

have been introduced in optical - communications and integrated optics, Picturephone, fibre optic sensors, remote optic sensing and fibre & Videobased digital holography. In the discipline of Environmental Engg. the Institute has earned recognition at various countries. An important addition to the Department of Production Engineering has been the setting up of Flexible Manufacturing System Laboratory which has formed the basis for research in the discipline of computer Aided Design and Manufacturing.

We are proud to mention here that in achieving the landmark in the arena of academic innovations of the various departments of the Institute mentioned above, there has been an active participation of the under-graduate Post-graduate, doctorate and post-doctorate students/ members. In view of their enthusiastic response to the development of modern technology, new courses like environmental engineering, non-conventional energy, microprocessor applications, power electronics, CAD,DAM, Environmental Geo-technique, Bio-technology have been/are being introduced at various levels. Further, the under graduate and post graduate programmes involve the students on the projects identified from surrounding industries. In this context, it would not be out of place to mention here that three final year students of the previous batch had solved the problem of vertical centrifugal casting machine which was posing a serious problem for the H.E.C., Ranchi.

During the year 1989-90 the Government of India, Minsitry of Human resource Development has provided financial support for the development of the following laboratories; the development work is in progress. This support from the Government of India has been of great help in

improving the facilities and for raising the standards and quality of education:

(a) Composite Materials
(b) Advance structural Lab. and Geo-Technical Engg.
(c) Industry-Institute Interaction
(d) Infrastructure Development for CIM System
(e) Department of Computer Engg.
(f) Telematics & Communication Engg. Lab.
(g) Fuel efficient IC Engine (Mechanical Engg. Lab.)
(h) Water resource Management.

Overall, Institute has adopted an integrated approach such that research, dissemination and extension of knowledge go hand to hand. An inter — disciplinary Research and Development is encouraged for optimum utilisation of manpower and resources, and it is optimistically expected that the overall academic and research plans under progress, would be successfully completed within the time bound programme under the encouraging response of the Government of India.

SCHOLARS REGISTERED FOR Ph.D.

During the year 1989-90 the following Scholars were registered for Ph.D. Programmes; the subject/areas of their study is stated against each:

Name of Scholars	Subject of study
1. Sri S. S. Mahli,	Pharmacological Studies on Purified Porgamia seed oil, Karanjin, Pongamol and their Derivatives.
2. Sri U. K. Choubey	Efficacy of working together in Coal Industry.
3. Sri I. I. Joseph	Study for Higher Productivity in Coal Mining through Behavioural Approach.
4. Sri Rajendra Prasad	Quality Evaluation of Foundry-Forge Products by Ultra-sonic Techniques.
5. Sri Atul Anand	Flexible Automation for competitive Manufacturing.
6. Sri Bijay Kr. Singh	Some Ergonomic considerations in work design.
7. Sri Neeraj Pandey	Computer Modelling and simulation of flow in Petroleum reservoir.
8. Sr. R. P. Singh	Study of Flow Behaviour in a cavity in an incompressible Flow.
9. Sri R. K. Singh	Studies on Elastic Buckling of composite Plates.
10. Sri A. K. Thakur	High Temperature Oxidation and Erosion Behaviour of low Alloy steels.

11. Sri Pratik Biswas	Analysis of Elastic stability of some Anisotropic Bodies.
12. Sri S. A. Chobe	Rocks and Hydro-geological condition of the area around Urimari and Balkudra, Dist. Hazaribagh.
13. Sri R. N. Thakur	Stability of O/W Emulsions through Zeta Potential.
14. Sri B. K. Jha	Appraisal System for Executive of an Integrated Steel Plant Design and implementation aspects with a special reference to Bokaro Steel City.
15. Sri Asim Kumar Raha	Analysis of shape control in cold strip Rolling.
16. Ms. Pranati Mishra	Environmental Pollution in Industrial and Mining area.

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

1. Sri Ashok Kumar Tiwary	The Influence of Crystal habit on Physical Stability and Bioavailability of suspensions.
2. Sri B. P. Srivastava	Combustion Studies of HTPB-AP composite solid Propellants at Sub-Atmospheric pressure.
3. Sri Madhukar Puri	Some Studies on High Speed Devices.

4. Sri Gopal Pathak	Air Pollution in Coal Fields with special reference to Jharia Coalfields.
5. Sri A. K. Malhotra	Studies of Leguminous Seed gums for Pharmaceutical Applications.
6. Sri S. Roy	Deformation of Asymmetric Elastic Medium under Magnetic Field and Thermal Loading.
7. Sri N. K. Jha	History of PI with Special reference to India.
8. Sri B.N. Sinha	Pharm. Chemistry Studies on Pseudopelletierine Analogues.
9. Sri Alok Verma	New Strategies for improving Industrial Productivity.
10. Sri U. N. Singh	Physics research in middle-level Countries : A Scientometric Analysis of High-Tech Physics in Australia, Canada, India, and Israel During the last 35 years.
11. Sri M. K. Kolay	Development in Human Resource Accounting - its applicability in Indian Context.
12. Sri Awadh Prasad	Corporate Long Range Planning using system Dynamics & Simulation techniques for Heavy Engineering Industries - a case study of Heavy Engg. Corporation Limited, Ranchi.
13. Sri Hari Haran	Marketing Information system in Steel Industry with special reference to Steel Authority of India.
14. Ms. Suneeta Singh	A Synopsis of Turn Around Strategy - an organisation Development approach.

15. Sri Pradeep Kr. Singh	Organisational Climate and Effectiveness in R & D of SAIL.
16. Sri B. K. Arya	A story of Non-Linear Programming Models and Application to some Optimization problems in Engineering Design.
17. Sri Anirudh Singh	Implementation & Organisational validity of Forecasting model in Selected Indian Organisations.
18. Sri. R. R. Prasad	Performance appraised : An Analytical study of its effectiveness in Public Systems.

STUDENT ACTIVITIES

During the year 1989-90, the students were given ample encouragement for participating in co-curriculars extracurricular activities. Currently, there are more than twenty flourishing Student-Forums and Societies apart from the Athletics and Games. These societies cater to the widest possible range of extra-curricular activities for an alround development of the students personality.

The year-long activities of these societies culminate in two annual functions which were over a couple of days each, (1) ANKUR was organised for the students of the Institute wherein participation of as many as 200 students of the Institute made it quite live and fruitful. (2) BITOTSAV has been an Inter-college students festival or organised on a national invitation basis. At these-festivals, models, theatre, music, debate, quizzing, fine arts, photography, creative writing etc. were very effectively organised, a number of light-hearted informal events on stage and field were also held wherein the participants and audience derived wholesome satisfaction.

Dramatic Soceity: The 'Stage" has been a proven and vital medium of expression. Dramatics Society provided to the students an opportunity to present serious theatre and play on one hand and a touch of humour and stire through monoact mimicry and skit.

Music Club: Provided a platform for development of musical talents in a large number of interested students in the areas of Indian Classical Music, Western Music and light Indian Music. It also provided opportunities to students for organising popular musical nites on the campus during the cultural festivals. Students are also encouraged to participate in Inter-language choirs so as to create feelings of national integration in them.

Unesco Club: Under the auspicious of the Unesco Club the students participated in serious debates and quizzing. Interesting events like 'Just-a-minute' 'block and tackle' etc. were also organised by the club.

The Bhartiya Sahitya Parishad: is a forum for promoting cultural activities in the national language: the Parishad organised Kavi Sammelans, Mushaira, Folk dances, Creative writing and publications contests.

Photographic society: Expression and creativity through synthesis of ideas and color through a Camera or a canvas is an accepted truth and enjoyable pastime. Photographic Society provided ample opportunity to students interested in Camera or Darkroom/studio work. During the year the Soceity had over 200 members. There are a number of Dark-rooms with full facility for development and Printing of films in the Institute, and also in the residential Halls.

The Fine Arts Society: Looked after the generation of skills in using pencil, pastel, water and oil colors paints as well as sculpture and handicrafts. On the occasion of the Republic Day an on-the-spot competition was held by the society in which over 200 young artists including Campus children took part.

Bitian's Nature Club: An affiliate of the World Wide Fund for Nature has encouraged students participation to know and love, respond to and vibrate with the Nature in all the immensity and totality.

The Highlender's Adventure Club: Which is an affiliate of NAF and NTMC provided ample opportunity for the partici-pants to derive delight from adventure-hitch-hiking, cycle expeditions, rock climbing or mountaineering at no or very low cost.

Spic-Macay: The society for the promotion of Indian Classical Music and Culture amongst Youth had its fair share of activities by inviting famous exponents of Indian Classical Music and Dance. During the year, among others, the following distinguished Artists gave their demonstration and performance in the Institute.

1. SMT. BHARATI SHIVAJI (Mohini Atans)
2. SRI DAGAR (Votal)

The Audio Visual Education Club: While presenting recent and classic fims every weekend for entertainment and relaxation of the students the Club also provided a number of technical and educational films and documentaries. The Club is very popular amongst all the residents of the campus.

Pooja Committee: Looked after the celebration of 'Saraswati Pooja' and "Vishwakarma Pooja' to promote the religious sentiments of the students and staff.

The Engineering Soceity: In the technical and scientific arena, the Engineering Society promotes the interest of the students in the design, development and complete fabrication of working engineering models. The society organised a number of technical talks by eminent Scientists and Engineers.

It is note-worthy that the various Engg. faculties with their concentrated extra curricular efforts have been encouraging fraternity and identity, through the societies/Clubs in their respective areas e.g. Electrical and Communications Engineering Society, Computer Engineering Society, Civil Engineering Society and Pharmaceutical Society etc. The students' chapter of the Institution of Electrical and Electronics Engineers (India) are also engaged in a variety of technical persuits.

The Amateur Radio Society: has a membership of over hundred students; these students are able to reach out all-over the world through intricate communication network under the Radio-HAM Society.

The Indian Association of College Going Scientists: bubbles with activities including organisation Technical trips to industrial areas, Seminars, technical quizzes, apart from initiating astronomical observations.

The News and Publication Society: While providing an opportunity for news reporting, Journalism and creative writing contributed substantially, bringing out the latest news in the regular issues of "Campus Times", "Sports Times" and in quarterly issues of the BIT by BIT.

Other Voluntry Clubs: The BIT chapter of Leo Club and Rotract Club have a record of creditable performances. During the year 1989-90 they arranged a couple of Health Camps, Blood Donation Camps, with the support of the eminent Doctors of the town. Moreover, visits to rural areas for identification of their problems,adult education camps and such other social service activities were also organised by these Voluntry Clubs.

GAMES AND SPORTS

Since inception the Institute has placed emphasis on Games and sports. earlier this activity was organised as a co-curricular Programme but from 1984 the Games and Sports have been provided in the regular curriculum of the under-graduate course by treating it as a full subject in the 1st and 2nd Semester of the B.E. and B. Pharm. Degree Programme. Accordingly, the students are exposed to PT & Drill, Gymnastics etc. thrice a week and on the other days they are required to play the alloted Games. Suitable arrangement for training and participation of Girl students has also been made and their participation in P.T. & Games is also compulsory. Now-a-days, on an average over 50 percent of the student take part in the Games, Sports and athletics on a regular basis.

A part from the regular participation of students in the P.T./Drill, Games and Sports a number of intra-mural competitions and Inter University tournaments in the various events are arranged spread all over the year. The Annual Athletic Meet for 1989-90 was held from february 9-11, 1990 Sri Zico Motheb, a foreign student from Botswana, was adjudged as the best Athlete and won the Individual Athletic Championship of the year. He also established a new BIT record in the 400 Metres Run - clocking 49.9 sec.

This year the Institute teams participated in the following national and regional events and the attainments of our boys has been creditable:-

	Events	Participants	Attainments
1.	Inter University Athletic Meet East Zone held at Banaras Hindu University (Jan. 8-11, 1990)	Mr. Nchena Zico Motheb	i) First in 200 Mts.Run Gold Medal ii) Second in 100 Mts. Run (Silver Medal) iii) Second in 400 Mts Run (Silver Medal)
2.	Inter University Volleyball (East Zone B) Tournament held at B.I.T. Mesra, Ranchi.	Volleyball Team	4th position

All and above Institute hosted Inter University Volleyball and Hockey Tournaments sponsored by Association of Indian Universities during session 1989-90.

With financial support from the UGC, during the year under report, the Institute has undertaken projects for 'Improvement of Stadium' and 'Flood-lighting' of the Volleyball and Basket-ball courts. The work is in progress.

Over the years the Institute has produced outstanding State level players in Cricket, Basketball and also University level players in Basketball, Football, Hockey, Badminton, Tennis, Kabaddi and Athletics.

The Institute has also produced one National Champion in Archery Shri Sanjeev Singh who graduated in B.E. Degree (Mechanical Engineering) last year participated and represented India in the last Asian Games held at Seoul.

To maintain the enthusiasm and raise the standards of games and Sports-activities, recently the UGC has extended financial support for development of the following Sports infra-structure during the Seventh plan period (1988-90):

1- Swimming pool
2- Stadium
3- Development of Play-fields
4- Flood-lighting of play-fields
5- Sports Equipment

THE STUDENTS' HALLS OF RESIDENCE

The Institute is completely residential and all the students are required to stay in one of the Hostels or Halls of Residence numbered serially - as Hostel 1 to 7. In addition there are two separate Hostels one for girls and the other for foreign students. Plan for construction of another Hostel for girls have been submitted to the U.G.C. and the State Government.

All the hostels are laid out beautifully to match the screne and pleasant campus with flower beds, bushes and trees encompassing each hostels, besides the well maintained lawns in front. The architecture of the hostel includes central facilities like spacious Dining Halls in the Centre and Common Rooms and reading Rooms, placed symmetrically on both sides of the central entrance and wide varandahs all along the length with air gaps and balconies well set for common use.

Each student is accomodated in a single-seated room, furnished with a steel table and a steel chair. The girl students are kept in two-or-three furnished rooms. Each room is quite spacious with a big size window and a steel door oppositely placed to make the room airy. Each room has a cup-board, wardrobe and a wide and deep rack.

Each hostel has a Common Room, where Indoor Games are available. Each hostel has a Reading Room also - where sufficient number of Magazines, Periodicals and Newspapers by consensus are made available to the residents of the hostel. Provision of getting the old magazines and periodicals issued to students are available. Each hostel has also been provided with a Color Television Set.

Frequent competitions are organised among the inmates of the hostel in a number of indoor games. Inter-Hostel Tournaments in the indoor and outdoor games are a regular and very attractive feature of the hostel life.

Once in a year, the inmates organise a Hostel-Night, where in the improvised stage, well selected cultural and musical programme, games andspecial items based on intimate knowledge pack the evening with fun and exciting festive mood.

Each hostel has an independent Mess, completely managed by the students through Mess Committee members elected from among the residents themselves. The committee looks after the complete management including the Menu, preparation, purchases and billing under the supervision of the Superintendent/Assistant Superintendent of the hostel. The bills are made on 'no profit no loss' basis and the monthly bills of the residents are submitted in the Mess Accounts Office, where individual student pays accordingly. The menu and monthly bills of the various hostels are assessed and revised periodically in the Meeting of the Hostel Council.

NATIONAL CADET CORPS

A unit of the National Cadet Corps was set up in the Institute in 1957 for imparting technical as well as general training to the students. Initially, it functioned as an EME Sec. with a strength of 60 cadets. The seventies have been a period of serious student - unrest all over the State and consequently the NCC programme also suffered to a considerable extent. However, there was some revival in the early 'Eightees'. In order to encourage students' active participation in this programme in 1984 the Institute provided it in the regular curriculam with a weightage of '2 unit' equivalent to two courses of 100 marks each, in the 1st and 2nd Semester of the undergraduate B.E./B.Pharm. courses.

At present NCC unit is functioning as a full fledged Composite Technical Company of three different sections, viz. (i) Engineers Corps, (ii) EME Corps and (iii) Signal Corps, and its designation is "3 Bihar Comp. (Tech.) Coy., N.C.C., B.I.T., Mesra". It has a sanctioned strength of 200 Cadets.

The 3rd Bihar Comp. (Tech.) Coy of B.I.T., Mesra works under the command of a whole time Army Officer of the rank of Major or Lt. Colonel. In addition, it has on its staff two trained Part-time NCC Officers who are Professors of the Institute, five P.I. Staff from the Army, about 8-10 clerical and other supporting Staff who are provided by the State Govt. Beside an administrative building on the main Campus the NCC has adequate facilities like Parade Grounds, Firing Range and Armament Stores, Library, Staff quarters etc.

The training programme is designed to lay stress upon the technical aspects of training in the form of Engg. Projects duly supported by lectures and practical classes (6 period/week); the training for Engineers Corps mainly covers Field Work, Field defence, Military Bridges, Roads and Aerodromes; Water supply, Demolition etc. The Technical training of EME Corps covers Inspection and repairs of vehicles, Driving practice and maintenance, Acquisition with different components of Automobiles, Mechanism and elementary principles of different class of army vehicles; and for the Signal Corps it covers Wireless equipment operation, Line equipment, Line transmission theory, Acquisition with More's code and handling or telegraphic instruments etc.

Apart from the technical training the NCC also provides general training to all cadets in order to inculcate the leadership qualities, high morals, unity, discipline etc. The NCC has special arrangement for training of those cadets who appear for 'B' and 'C' Certificate exam. of NCC (Tech.).

During the year 1989-90, 146 cadets were enrolled in the NCC Coy of the Institute - 60 in the Engineers Corps 44 EME Corps, and 42 in the Signal Corps.

SEMINAR AND PUBLICATIONS

List of Seminars and Symposia conducted at the Institute during the year under report:

1. Advance Management Programme for Senior Managers from Public and Private Sector undertakings.
2. Export Strategies for the Small Scale Industries of Bihar.
3. Marketing Fair.
4. The Fifth B.M. Birla Memorial Lecture.
5. Short course on Semi Conductors, sponsored by Central Coal Fields Ltd.
6. M.C.A. Teachers' Training Programme Module I & III - sponsored by Deptt. of DOE, DS&T, Govt. of India.
7. Short Term Computer Training Programme for Officers of Bihar State Co-operative Milk Producers' Federation (COMPFED).
8. NBO Project on Rural Housing - Roving Seminar on Modular Co-ordination and Prefabrication.
9. Special programme on Entrepreneurship Promotion and Development for Technical graduates (May-June, 1990).

TRAINING AND PLACEMENT

During the last 5-6 months of each academic session the Institute plays host to senior executives and officers from a large number of organisations. They visit us to recruit technical and managerial personnel via interviews conducted on campus of our outgoing B.E., M.E., MBA and MCA students. The visiting teams are mostly from the premier private companies, some Govt. and Semi-Govt. organisations and the defence services. The visiting selection teams are invariably impressed by the facilities of the Institute, the environment and well-maintained surroundings, the general discipline and behaviour of the students and, most important, by their technical aptitude and talent. We are proud to state that the demand for our graduates has been steadily growing, alongwith the reputation of the Institute.

The Training & Placement section endeavours to liase between the organisations that wish to visit us, the students who need jobs and the Departments and faculty concerned, to best achieve the aspiration of the students and the requirements of the organisation, also keeping the interests of the Institute in view. Apart from arranging Placement services, this section also tries to arrange industrial training for interested students during their vacations through correspondence with organisations all over the country. During the last 5 years, over 750 graduates have benefited by receiving confirmed offers of appointment while still completing their studies. Several times this number have benefited by their interview experiences on campus and consequest gain of confidence to obtain jobs within a short time of graduating. Further, a few thousand have undertaken vacation training, thereby enhancing their technical awarness and increasing their prospects for employment.

We are happy to note that the placement activities have shown a continuously successful trend.

During the last academic session, 1989-90, we were visited by about 40 premier organisations. By June 1990 most of these companies had intimated their final selections, offerings appointments to 228 graduates from different disciplines, about 30 of whom had received more than one offer. Some organisations were expected to finalise/increase their selections later. The total number of B.E. candidates offered jobs was about 220, representing approximately 85% of the Year's graduates.

The placement activities do not end with the academic session. Students leaving the campus without jobs are asked to leave their bio-datas, and these are still being despatched on request to organisations who have been contacting us after June. Some companies are due to visit us in late August. We are also frequently consulted by students requiring advice and guidance in relevant matters.

During the year under report about 300 students received vacation training at various factories and establishments during their Puja Vacations 1989 and Summer Vacations in May and June, 1990.

Note: The branch-wise number of students who secured employment through campus interview during the year under report (upto June, 1990) is as follows:

Electrical & Communication Engg.	35
Electrical & Electronics Engg.	41
Computer Sciences	25
Mechanical Engineering	59
Production Engineering	03

Civil engineering	09
M.B.A.	13
M.C.A.	13
M.E.(Electronics & Comm. Engg.)	01

The details of the placements are given below:

A. CONFIRMED APPOINTMENTS:

Sl.No.	Organisation	Branches	Total No.
L.	Amtrex Ambience Ltd, Ahmedabad	Mech. - 2, MBA-2	04
2.	A.F.Ferguson & Co. New Delhi	MCA-(6th)-2, EEE-1, MCA(5th) -1	04
3.	Bajaj Auto, Pune	Mech.-1	01
4.	Bharat Petroleum Corpn.Ltd. Bombay	MBA-4, Mech.-5, EEE-2, Civil-1	12
5.	CMC, Calcutta	Comp.Sc.-2,ECE-1 EEE-1.	04
6.	Eicher Goodearth Ltd New Delhi	Mech.3,Prodn.-1	04
7.	Fusion Engg. Products Ltd. Jamshedpur.	Prod.-1, EEE-1	02
8.	Hindustan Computers Ltd. New Delhi	Mech.-3, EEE-5, ECE-1,Comp.Sc.-3 MBA-1	13
9.	Hindalco, Renukoot	Mech.-2, EEE-1	03
10.	Hindustan Development Corpn. calcutta	Mech.-6, EEE-3	09
11.	Hind Motors Ltd. Indore	Mech.-6,EEE-1	07
12.	Indian Aluminium Co. Ranchi	Mech.-2, EEE-2	04
13.	Indian Rayon and Industries Ltd. Bombay	MBA-3, Civil-3	06
14.	ITC Ltd. calcutta	MCA(6th)-1, EEE-1	02
15	International Data Management Ltd.,N.Delhi	EEE-2, Comp.Sci.2, ECE-1, MBA-1, Civil-1	07
16.	Larsen & Toubro Ltd. Madras	Civil-5,Mech-5, EEE-3	13
17.	National Engineering Industries Ltd., Jaipur	EEE-1. ECE-1, Mech.-1, Prod.-1	04

18.	Pertech Computers Ltd. New Delhi	EEE-8, ECE-5	13
19.	TELCO, Jamshedpur	Mech.-3,ECE-3, Comp. Sci.-4	10
20	Tata Consultancy Services, Bombay	MCA(5th)-3,ECE-6, Comp.Sci.-11, EEE-1	21
21.	Raylor Instruments India Ltd. Faridabad	EEE-3, ECE-1	04
22.	Sriram Bal bearings Ltd., Ranchi	ECE-1,Mech.-3	04
23.	Sriram Fibres Ltd.N Delhi	Prod.-1	01
24.	Uptron Colour Picture Tubes Ltd. Ghaziabad	Mech.-1, ECE-1	02
25.	Usha Martin Industries Ltd. Ranchi	Mech.-7,ECE-4, EEE-2	13
26.	Wipro Information Tech. Ltd. Calcutta	Comp.Sci.-2,Mech.-1 ECE-1	04
27.	Bharat Heavy Electricals Ltd. N.Delhi	ECE-5, EEE-3, Civil-2 Comp.Sci.-5, Mech.-2	17
28.	TISCO		
	G.T.	Mech-9,EEE-4, ECE-5	18
	RMD	Mech-5, EEE-3	08
	S.T.	C.S.-1, Mech.-2 EEE-1, ECE-1 Prod.-1 MCA-1	07
29.	HMEED, Tiruvallur	Mech.-4	04
30.	CITIBANK	MBA-3	03
			228
31.	Gearhart, New Delhi	Results awaited	
32.	Hero-Honda, New delhi	Results awaited	
33.	BATLIBOI, calcutta	Shortlisted 6 - final results awaited.	
34.	Times of India, Patna	Shortlisted-3 MBA's for final interview at Patna on 27.4.90.	
35.	Blue star, Calcutta	Shortlisted -13 candidates for final interview at Calcutta in May '90	
36.	ORG System, calcutta	Results awaited.	
37.	PERTECH for System Trainees	Final Interviews of 3 candidates on 30.4.90	

RURAL HOUSING DEVELOPMENT CENTRE

The Rural Housing development Centre is housed in Civil Engineering Wing of the Institute has been performing various complex functions. An important and specific function being a live partner alongwith the State Government in improving housing and environmental conditions of the tribal people located in Chotanagpur Tribal belt by developing appropriate technologies, and propogating technology transfer through field demonstrations for the construction of low cost dwellings.

Considering that special attention is required to be given for the improvement of housing and environmental conditions in the tribal settlements, the Rural Housing Development Centre has initiated socio-economic studies and engineering surveys of tribal settlements in different parts of the state to identify the specific problems and suggest appropriate solutions.

The main objective of the Centre is to promote research in the improved use of local materials and construction techniques using locally available labour force. Further, motivate rural people to construct their houses by material developed by the Centre. The extension activities like workshop, 'on low cost housing technologies and training programme for the executive personnel of the State is widely acclaimed and attended. So far 380 officers of the rank of Deputy Development Commissioners, Executive Engineers, Assistant Engineers, Block Development Officers, Junior Engineers have been benefited by this programme.

With a view to promote better understanding of low cost constructional technology a number of research projects has been initiated and completed. Here are some project profiles

Research on rice husk ash for stabilising local soil.

Low cost primary school building scheme for tribal area.

Design and development of low cost houses in earth-quake and flood hit zones of Bihar.

An experimental investigation of sunn fibre as reinforcing material in cement matrix.

Rice-husk ash cement.

The centre is working on a project entitled 'Typology and Mapping of Housing Zones' sponsored by Dept. of Science and Technology'. Further, the centre alongwith HUDCO has established a Building Centre to train local people in the art of low cost construction technology paving way for the trainee to establish a small scale unit for manufacturing building materials.

The centre has been extending help to various state and central government agencies. Here is a short list of the same.

Design of low cost houses in earthquake zones of North Bihar (Assistance offered to Govt. of Bihar).

Modification of Indira Mass housing scheme using cost reduction technique. (Assistance offered to Rural Development Department Govt. of Bihar).

The centre is involved in construction of demonstration clusters. It has already completed one such cluster at Rudia village, Kanke Block, Ranchi and distributed to identified landless adivasis.

ANNEXURE - 1

BOARD OF GOVERNORS

Chairman	:	Shri G. P. Birla
Members:		
Nominee of the Govt. of India Ministry of Human Reource Development	:	Shri S. N. Chakraborti
Nominee of the University Grants commission	:	Dr. Amitabh Bhattacharya
Nominee of All India Council for Technical Education	:	Dr. D. C. Biswas
Commissioner & Secretary Science & Technology, Govt. of Bihar	:	Shri K. K. Saha
Commissioner & Secretary Education,Govt. of Bihar	:	Shri B. B. Sahay
Commissiner Chotanagpur Division(South),Bihar, Ranchi	:	Shri C. K. Basu
Nominee of the Chancellor	:	Shri G. P. Lal
Nominee of the Hindustan Charity Trust	:	Shri C. K. Birla
" "	:	Shri A. L. Goenka
" "	:	Shri K. P. Singhi
Director,BIT, Ranchi	:	Dr. H. C. Pande
Member of Institute Faculty	:	Dr. C. B. Mishra
" "	:	Mrs. Mandira Mukherjee
Member Selected by General Council	:	Shri D. N. Patodia
" "	:	Shri S. R. Jain
" "	:	Shri C. S. Jha
Secretary : Registrar & OSD	:	Shri J. B. Saksena

ANNEXURE - II

TECHNICAL COUNCIL

Chairman : Director,BIT,Ranchi	:	Dr. H. C. Pande
Members:		
Nominee of the Chancellor	:	Shri R. K. Sandhir
Director of Technical Education, Govt.of Bihar	:	Ex-officio
Director of Education (Higher Education), Govt. of Bihar	:	Ex-officio
Dean of Science, Ranchi University	:	Ex-officio
Dean of Engg. Faculty, Ranchi University	:	Ex-officio
Professor of the Institute	:	Dr. C. B. Mishra Dr. B. Kanta Rao Dr. B. Narayan Prof. G.P.C. Rao Prof. K. P. Sinha Prof. U. M. Nayak Dr. B. K. Razdan Dr. M. C. Srivastava Dr. J. N. Mishra Dr. N. L. Munjal Prof. K. C. .Pande Prof. A. K. Mehta Dr. B. S. Sahay Prof. M.B. Gopalakrishnan Prof. A. K. Bhattacharjee Prof. J. S. Ruhela Prof. A. K. Aggarwal Dr. R. C. Gupta Dr. S. Kumar Prof. R. A. Sharma Prof. S. H. Kekre Prof. S. C. Goel Prof. B.S.Rajeevalochanam Dr. R. K. Shrivastava Dr. Ashok Mishra Prof. Awadh Prasad Dr. A. K. Chatterjee Dr. K. N. Sahu Dr. R. C. Prasad Dr. M. N. Banerjee Dr. B. B. Mishra Dr. B. G. Varshney Dr. B. P. Ambasht Dr. S. P. Basu Dr. J. Ram Dr. O. P. Sinha

Persons appointed by the Chairman vide clause 4(e) of the regulation	:	Prof. M. K. Saxena Shri R. S. Yadav Dr. D. Jairath Dr. P. K. Mohanty Prof. B. P. Roy Dr. A. K. Sharma Prof. G. C. Singh
Librarian - ex-officio	:	Shri U. N. Singh
Controller of Examination Ex-officia	:	Prof. S. P. Bhatnagar
Secretary : Registrar & OSD	:	Shri J. B. Saksena

FINANCE COMMITTEE

Chairman	:	Shri G. P. Birla
Members:		
Nominee of the University Grant Commission	:	Shri D. Swaminathan
Nominee of the Chancellor	:	Shri U. Narain
Nominee of the Board of Governors	:	Shri A. L. Goenka
Nominee of General Council	:	Shri P. C. Agarwal
Director, B.I.T., Ranchi	:	Dr. H. C. Pande
Treasurer,B.I.T.,Ranchi	:	Sri S. S. Jajodia
Member-Secretary:		
Registrar & OSD	:	Shri J. B. Saksena

BUILDING & WORKS COMMITTEE

Chairman:		
Director, B.I.T., Ranchi	:	Dr. H. C. Pande
Members:		
Assistant Director,BIT,Ranchi	:	Dr. C. B. Mishra
Treasuer, B.I.T., Ranchi	:	Shri S. S. Jajodia
Representative of the Architects:		M/s Kothari and Associates, Calcutta.
Representative of the State PWD	:	Shri B. K. verma Supdtg.Engineer,PWD,Ranchi
Dean, Planning & Development	:	Prof. A. K. Agarwal
Head.Dept. of Civil Engg. B.I.T., Mesra	:	Prof. G. P. C. Rao
Member-Secretary:		
Registrar & OSD	:	Shri J. B. Saksena

PUBLICATIONS

(Research Papers & Books Published)

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[2] Gopal Pathak, "Health Hazards due to dust in Indian Coalmines", Futuresafe 90, Australia.

[3] Gopal Pathak, "Simplified Package Unit : a non-conventional method of Waste Water tratment", Futuresafe 90, Australia.

[4] B. S. Rajeevalochanam, "An experimental investigation on obliqueweirs" - All India seminar on Infrastructural Development for efficient Water management, Patna, Sept., '90.

[5] B.S. Rajeevalochanam, "Well failures - causes and strategies for effective counterino" - National Workshop at Jawaharlal Nehru technological University, May, '90.

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[1] P. K. Mahanti, "Application of Artificial Intelligence on Biological Modelling", International Society for Mini and Microcomputers, switzerland (1990).

[2] N. C. Mahanti, "waves due to Blasts above a two-layered fluid of finite depth : an application of Taylor point blast theory", Z. angew. Math. Mech.69 (1989) 11, 409-413.

[3] R. K. Narayan, "Possible Design of a Computer Vision and touch Sensing System for Aiding the Blind Specially Outdoors", First International Symposium on Measurement and Cotrol in Robotics (ISMCR'90), Houston, USA June 20-22 (1990) : Proceedings of the ISMCR, 1 (1990) PP. 3.3.1-3.3.14.

Eclectronics & Communication Engineering

[1] P. Chakravarti, B. R. Abraham and B. B. Pal, "A long wavelength Photodetector for optic al communications", Solid-State Electronics, 32 (1989) 521-524.

[2] P. Chakravarti, S. C. Chowdhury and B. B. Pal, "Noise in Superlattice APD", Applied Physics A, 48 (1989) 331-334.

[3] P. Chakravarti, S. C. Choudhury and B. B. Pal, "Noise Characteristics of a new heterojunction avalanche photodiode", IEE Proceeding, part 1, 137 (1990) 97-100.

[4] A. Singhal, A. Mishra and P. Chakravarti, "Optical effects in Modulation Doped Field effect Transistors", Solid-state Electronics (in press 1990).

[5] P. Chakravarti, s. Kumar, P. K. Rout and B. G. Rappai, "A New InGaAs MISFET Photodetector", 3rd Asia-Pacific Microwave Conference (1990).

[6] P. Chakravarti, M. Puri, A. Singhal and A. Mishra, "Optically Controlled Characteristics of TEGFET", Physica Status solidi (in press 1990).

[7] J. Pal, M. Puri, P. Chakravarti and B. B. Pal, "Computer Aided Modelling of a High-Electron - Mobility - Phototransistors", J. IETE, Special issue (in Press 1990).

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[2] G. Sahoo and N. datta, "Auxiliary Linear Multistep Methods, Implicit", Int. J. Computer Mathematics, 31 (1989) 115-123.

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