



DIRECTOR'S REPORT

AT

**THE 2ND CONVOCATION OF
INDIAN INSTITUTE OF TECHNOLOGY, GUWAHATI**

29TH MAY, 2000

INTRODUCTION

Hon'ble Minister of Human Resource Development, Science and Technology and Ocean development, and Chairman, IIT Council, Dr. Murli Manohar Joshi, Hon'ble Governor of Assam and Chairman of the Board of Governors of IIT Guwahati, Lt. Gen. S.K. Sinha, Hon'ble Chief Minister of Assam, Shri Prafulla Kumar Mahanta, Members of the Board of Governors, Members of the Senate, graduating students, ladies and gentlemen.

It gives me great pleasure to extend a very warm welcome to all of you on the occasion of the second convocation of the Indian Institute of Technology, Guwahati. It is our privilege to have amidst us the Hon'ble Minister of Human Resource Development, Science & Technology, and Ocean Development, Dr. Murli Manohar Joshi, who was gracious enough to accept our invitation to be the Chief Guest on this solemn occasion. We once again extend a very hearty welcome to you, Sir, and look forward to hearing your address.

I would now like to present before you a report of the activities of this Institute during the past one year.

ACADEMIC ACTIVITIES

IIT Guwahati at present has five engineering, three science and one humanities disciplines. They are as follows:

1. Computer Science & Engineering
2. Electronics & Communication Engineering
3. Mechanical Engineering
4. Civil Engineering
5. Design
6. Physics
7. Chemistry
8. Mathematics
9. Humanities & Social Sciences

No new department has been added during the last academic year. However, Ph.D. programmes in Civil Engineering, Design and Humanities and Social Sciences (Philosophy, Economics and Psychology) have been introduced from the 1999-2000 academic session in addition to the already existing programmes.

The total number of students enrolled at present at the undergraduate and postgraduate levels are as follows:

Undergraduate Programme:

1996 batch : 76 (CSE-31, ECE-24, ME-21)
1997 batch : 76 (CSE-32, ECE-22, ME-22)
1998 batch : 104 (CSE-31, ECE-26, ME-23, CE-12, Design-12)
1999 batch : 116 (CSE-35, ECE-33, ME-27, CE-11, Design-10)

Total number of Under Graduate students : 372

The number of students in the M.Tech. and Ph.D. Programmes are as follows:

M. Tech : 67 (CSE-24, ECE-25, ME-18)
Ph.D. : 35 (CSE-1, ECE-2, ME-5, CE-2, Design-1, Phy.-7,
Chemistry-11, Mathematics-3, HSS-3)

Total number of Under Graduate & Post Graduate students : 474

The number of successful candidates who are to receive their B.Tech. and M.Tech. degrees today are as follows:

B. Tech.

Computer Science & Engineering	- 31
Electronics & Communication Engineering	- 22
Mechanical Engineering	- 20

M. Tech.

Computer Science & Engineering	- 8
Electronics & Communication Engineering	- 8
Mechanical Engineering	- 6

The faculty and staff strengths of the Institute at present are 79 and 151 respectively.

R&D ACTIVITIES

Research projects are undertaken by the students of the Institute as a part of the undergraduate and postgraduate programmes. The faculty are also involved in individual and sponsored research and consultancy projects.

Sponsored Research

There are at present 26 sponsored projects and two collaborative projects. The sponsored projects have a total project value of Rs.2.7 crores. Some of the new projects that have been taken up during the year include:

Department of Electronics & Communication Engineering :

1. Development of VLSI Architectures for Digital Signal Processing Algorithms
2. New Techniques for Image Compression & Motion Compensation

Department of Mechanical Engineering :

1. Preparation and Characterisation of Ru-Al Alloys for Special Applications
2. Development of a Simulation Based Design for Axial Fan Using Computational Fluid Dynamics
3. Analytical Modeling and Free Vibration of a Shear Deformable Composite Rotor Blade
4. Generalised Monte Carlo Solution Techniques for Radiative Heat Transfer Problems in General Diffuse Grey Cartesian Enclosures with Absorbing-Emitting-Scattering Media
5. Computer Aided Analysis and Design of High Speed Ball and Roller Bearing

Department of Design :

1. Ergonomic Space-design Evaluation Facility Centre for Quality Assurance in Learner Support System for Technical Education in North East India

Department of Chemistry

1. An Approach Towards Thermoelectric Switch through Oxidative C-H Bond Activation by Copper-Amino Acid Complexes
2. C-Glycoside Synthesis

Department of Mathematics

1. Regional NBHM Library in IIT Guwahati (A project for development of library facility for mathematics).

Department of Physics

1. Some Studies of Integrability of Non-linear Evolution Equations Related to Optical Solitons

Consultancy Projects

The faculty are also actively engaged in rendering consultancy to various Government and private sector organisations. Most of these projects are being carried out by the departments of Civil Engineering and Computer Science and Engineering. The clients include NEDFi, Netcom Ltd., AERB, DCL, NABARD, CPWD and APWD.

INSTITUTE PROGRAMMES

Interaction with Local Institutions

Faculty members of the Institute have been continuing their interactions with other educational institutions and organizations of the region by providing their expertise and help at various levels.

Collaboration has been initiated with Gauhati University on a sponsored project on the development of computing technologies for Indian Languages. IIT Guwahati is also helping universities in the North Eastern region in the installation of VSAT connections and local area computer networks.

Faculty members of the Mathematics Department organised four workshops on mathematics in various colleges of Assam to expose teachers and students to the latest development in mathematics research. Some faculty members of the Mechanical Engineering Department have been assisting the

Indira Gandhi National Open University (IGNOU) in preparing the study materials for various courses. The Civil Engineering Department is providing assistance to Edusoft for conducting training courses in CAD.

The Department of Design is helping the Assam Valley School in setting up a specialised craft and design centre. The department is interacting with NEDFi and the Directorate of Industries and Commerce of the Govt. of Assam, for setting up of a bamboo craft development centre under UNDP. The Department of Design is also collaborating with the Spastic Society, Assam Branch, in designing barrier free environment for the disabled, and with the Assam University, Silchar, for possibility and formulation of masters degree level design education at the University.

Short Term Courses

The Department of Mathematics organised a Mathematics Training and Talent Search Programme sponsored by the National Board for Higher Mathematics (NBHM) at IIT Guwahati last year. The department will be organizing another month long Mathematics Training and Talent Search Programme this summer for which participants will be drawn from all over the country.

Visitors

Many eminent scientists and scholars from the country and abroad visited the Institute during the past year. Some of the eminent visitors from abroad include:

Prof. K.B. Atreya , University of Iowa, USA

Prof. Haruhiko Ito, well-known cane and bamboo designer of Japan

Prof. Iko Avital, internationally known graphics designer from Israel

Mr. Deepak Verma, Sun Microsystems, USA

A five member Australian delegation, led by Prof. Ian Davey

from the University of South Australia visited IIT Guwahati last year.

Conferences, Workshops and Symposia

Faculty members of the Institute are engaged in collaborative research with faculty members of various universities in countries like France, U.K, Germany and the USA. Several faculty members have attended workshops, symposia and presented papers at international conferences held in India and abroad.

1. The Department of Mathematics organized the 'Turn of the Millennium Lectures in Mathematics' at IIT Guwahati, which was jointly funded by the NBHM and the DST.
2. A workshop on leather technology conducted by CLRI, Chennai, was organised by the Department of Chemistry on 26 and 27 March, 2000.
3. Prof. Haruhiko Ito from Japan conducted a week long workshop on bamboo products.
4. Prof. Iko Avital from Israel conducted a week long workshop on digital graphics and eco-friendly packaging design.
5. Prof. R. K. Joshi (Ex- IDC, IITB) from Mumbai conducted a two-week long workshop and exhibition on calligraphy.
6. P. Dalwadi, formerly of the National Institute of Design, Ahmedabad, and renowned photography personality, conducted a week long workshop on product photography.
7. The Department of Design organized a festival of South Asian Documentaries entitled 'Travelling Film South Asia 2000' in association with Himal Association, Kathmandu, from 22nd to 26th February, 2000.
8. A HAM workshop and one 'Information Technology' workshop were held at IIT Guwahati which were organized by CEPSTRUM (Society of Electronics & Communication Engineering, IIT Guwahati) for local engineering college students.
9. Dr. A.K. Gogoi of the Electronics and Communication

Engineering Department, demonstrated the working system of 'Voice Over Packet Network' at the National Communication Conference 2000, held at IIT Delhi.

10. A series of seminars on 'Mobile Communication and its Applications' including one addressed by Mr. Deepak Verma of Sun Microsystems, USA, were organized by the Electronics and Communication Engineering Department of IIT Guwahati on the occasion of the World Communication Day.
11. The Department of Humanities and Social Sciences invited noted poet Jayanta Mahapatra to the Institute in a 'Meet the Poet' event on 3rd November, 1999.
12. A lecture on 'Management Education in the Globalised Environment' was held on 16th February, 2000.
13. A seminar was organized on 4th and 5th April, 2000, on the 'Role and Future of Psychological Sciences in the Millennium' and 'Contribution of Psychological Theories in the field of Management'.
14. Prof. Arun Gupta of the National Institute of Design, Ahmedabad, conducted a film language workshop from 29th October to 3rd November, 1999.

FACULTY ACTIVITIES

Apart from regular teaching and research activities, the faculty members are actively engaged in setting up new research laboratories as well as under-graduate and post-graduate laboratories and formulating new courses of study. A special word of praise is due to our faculty who have shown an indomitable spirit to excel in their chosen fields. In spite of various hardships such as lack of campus facilities, long hours of travel to and from the work place, and extra work load because of smaller number of faculty in each department, they have kept up their research and project works although a major part of their effort has to be directed towards the setting up of various laboratories and designing courses of study.

Publications/Patent

The faculty of the Institute have been publishing their research findings in various journals and conferences. The Institute has also acquired its first patent. The total numbers under the various categories during the last one year are:

Journal Papers	: 58
Conference Papers	: 73
Patent	: 01

Honours/Awards

The following faculty members were conferred honours/awards during the past year.

Mechanical Engineering Department:

Dr. S. C. Mishra	DST - Young Scientist Award for 1999.
Dr. M. K. Das	AICTE Career Award for young teacher for 1999.

Physics Department

Dr. P. Senthilkumaran	INSA-Royal Society, London, Exchange Fellowship awarded to undertake research at the University of Strathclyde, Glasgow, U.K. for four months in 1999.
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Civil Engineering Department

Dr.M. Jawed	Was rated scientist in the area of Environmental Engineering by the National Research Foundation of South Africa, 1999.
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LIBRARY FACILITIES

The Central Library, one of the important central facilities of the Institute, currently has over 50,000 volumes, including text books, reference books, conference proceedings, back volumes, standards, and book materials such as CD-ROMS, audio tapes,

video tapes and slides. The library also subscribes to about 600 current periodicals.

All operations of the Library are automated with the help of an integrated library software package called LIBSYS. This package has been upgraded enabling access to bibliographic databases through Intranet and Internet. The database for the entire collection has been created which is available through On-Line Public Access Catalogue (OPAC) to the users via campus network.

At present the library has one workstation providing the search facilities on CD-ROM abstracting services on Engineering Index (COMPENDEX), Science Abstracts (INSPEC ON DISC), Psychological Abstracts (PsycLit). In addition to this, the Library has acquired IEEE/IEE Electronic Library, containing data since 1988, covering full text images from more than 4,000 publications.

The Central Library has initiated designing its own web page. This will be a part of IIT-Guwahati Home Page and serve as a single integrated window to provide information about the library services to the academic community of the Institute.

A consortium of six IITs was formed to initiate a collective procurement of e-journals and to share the available resources through Document Delivery Services (DDS).

INFRASTRUCTURE

Construction Programme

Academic activities of the Institute have been functioning in the Academic Complex, Phase-I measuring 8412 sqm. since 1998. This complex is being extended by another two blocks measuring 1189 sqm. to accommodate the Civil Engineering and Chemistry laboratories. The works for the main Academic Complex, the Administrative Building and the Guest House have already been allotted.

Construction of the internal roads measuring 4153 m, linking the present Academic Complex with hostels and residential

quarters are already complete. Works of building the other roads are also in progress, most of which are being executed by the Border Roads Organisation. Work on the main Approach Road from NH-31 is also in progress under Assam PWD, and is expected to be complete by May, 2001.

The water supply in the campus is presently being provided from deep tube wells. It is proposed to utilize the waters of the nearby Brahmaputra river to cater to the future requirement of drinking water and for other water supply and distribution schemes. A competent consultancy firm has already been selected for the purpose.

Electricity is presently being supplied in the campus from a 10 MVA, 33 KV sub-station, energized from the nearby Sishugram sub-station of ASEB, through a number of 11 KV sub-stations. A total 6350 KW of power has been sanctioned by the Govt. of Assam for IIT-Guwahati, against which the Institute has signed an agreement with the ASEB to utilise 1000 KW in the first phase. While a 320 KVA DG set is already in service as a standby source, the process of installation of two 1500 KVA main standby DG sets have also started.

The Campus is being developed as per the master plan selected by a team of experts from a national level competition. In the process, utmost care has been taken to cause least damage to the existing natural environment of the campus. Plantation of trees and beautification programmes has also been taken up side by side with the various construction activities.

Out of the three hostels (with a capacity of 300 students each) under construction, two hostels will be occupied from the incoming semester, while the third hostel will also be completed shortly. For accommodation of faculty and staff, 49 units of residential quarters are ready for occupation while another 49 quarters are expected to be completed within a couple of months. Additional 221 units of residential quarters are also being taken up for construction.

Communication Network

The Institute has already started work on establishment of

Telecommunication and Networking facilities for the campus. Payments have been made to DOT and to ERNET for setting up of a 8 mbps radio link from the campus to the city exchange out of which 2 mbps will be used for leased line from Calcutta to the IIT campus with the Institute acting as an ERNET node and providing connections to other educational and research institutions in the region. Within the campus, an optical fibre network is being set up for phone, computer and internet facilities.

Medical Facilities

The Medical Department is headed by a Senior Medical Officer, a Medical Officer and a Lady Medical Officer, all of whom are specialists and have brought forth a comprehensive health delivery system to IIT-Guwahati. The Institute runs two regular OPD's at Panbazar and at the North Guwahati Campus along with two pharmacies. They refer and attend to patients requiring admission and gynaecological surgeries at approved hospitals. The next few years will see a hospital building at the North Guwahati Campus to house a diagnostic setup and a small admission and surgical facility.

STUDENTS' ACTIVITIES

Scholarships/Awards/Prizes

The following awards are given to outstanding students in academic as well as extra-curricular fields.

1. The President of India Gold Medal is awarded to the scorer of the highest C.P.I. among all graduating students.
2. An Institute Silver Medal is awarded to the highest C.P.I. scorer of the graduating students of each department other than that of the President of India Gold Medal Awardee.
3. The 'Dr. Shankar Dayal Sharma Gold Medal' is awarded to the best student in terms of general proficiency including character, conduct, excellence in academic performance, extra-curricular activities and social service.

Merit-cum-means Scholarships were awarded to 43 students and the Institute Merit Scholarship to 5 students during 1999-2000 session.

Cultural Activities

ALCHERINGA 2000, the annual cultural festival of IIT Guwahati was organized in a much bigger way during 4th-6th February, 2000. Participants from about 100 Institutions, mostly from Assam, took part in the festival. The aim of ALCHERINGA is to give opportunity to the budding talents of the north-east region so that the exposure helps them in shaping up their careers.

'TECHNICHE 99', the IIT Guwahati technical festival was held during October 8-10, 1999, in which students from different institutions of the country, particularly from the north eastern region took part. It was envisaged as a window for the latest technological advances taking place in the country. Events included a HAM workshop, technical paper presentations, on the spot software and design problems contests. The 'Informals', held as a part of the event included various games, shows, computer games, puzzles, etc.

'Natya Manjari', which is under the Students' Gymkhana of the Institute organized a skit competition among the students on 07.11.1999.

Music Society of IITG which was formed on 09.04.2000, organised a cultural evening of classical music.

A photography club has been formed during the year, which organizes regular talks, interactions with professionals, slide shows and wildlife photography trips.

The inaugural function of IIT Guwahati's first literary forum, 'Aileron' was held on 11th September, 1999, with an Inter-Hostel Debate and Extempore speech Competition. The forum also organized an English Poetry Competition for the students.

A workshop on Internet Programming was organized by the Computer Science & Engineering Association (CSEA) which was a grand success.

Sports Activities

In the Inter IIT Sports Meet held at IIT Madras from 15th-20th Dec 1999, IIT Guwahati participated in the Track & Field, Badminton, Basketball, Cricket, Football, Volleyball and Table Tennis. 42 students including two girl students participated in the various events. Prior to that, an intensive coaching camp was organized for the participating students between 29th November to 10th December 1999. Services of various coaches were also utilised to train our students for the above mentioned events.

Our students also took part in the Inter College Cricket Tournament organized by College of Veterinary Science, Khanapara, in March 2000.

PLACEMENT

The placement activities for the year 1999 started in the month of August and continued till May, 2000. As many as 22 organisations including multi-nationals, private sector companies and Govt. of India enterprises conducted campus interviews at IIT, Guwahati, and recruited 67 B.Tech and 16 M.Tech students from the disciplines of Computer Science & Engineering, Electronics & Communication Engineering and Mechanical Engineering. Some of our students have also appeared at a couple of international level interviews held in Calcutta under the recommendation of the Institute. The percentage of placement during the year is 90.

CONCLUDING REMARKS

The Institute though still in the initial stages of its growth, has progressed considerably during the last five years. There has been a steady growth both in the number of students and staff as well as in research and development activities. The first batch of B. Tech. students passing out last year have already secured challenging jobs. In the next few years, the Institute will be expanding considerably and many new departments will be set up. Construction of the various buildings of the Institute is going

on and by the end of the Tenth Plan, IIT Guwahati is expected to function as a full-fledged IIT. It will be the endeavour of all the students, faculty and staff to develop IIT Guwahati into one of the centres of excellence in the country.

In conclusion, I extend my hearty congratulations to all the graduating students and wish them the very best in all their future endeavours. I am sure that you will be able to bring many a laurel and honour to the Institution and the country at large. We expect you to keep alive the scientific spirit of enquiry and unflinching commitment to the motherland by evolving new solutions to the various problems that beset our country today, thus helping India emerge as one of the technological powers to be reckoned with in the new millennium.

IITians have already been branded abroad as the hottest product the country has ever produced. It is a matter of pride for all of us that alumni from our sister institutes have been in the forefront in reviving a sense of pride and confidence in ourselves as a nation. What the world is seeing today is a resurgent India and I hope that the graduates of this Institute will take a leading part in this resurgence to make the twenty first century belong to India.

■ JAI HIND ■