

DIRECTOR'S REPORT

First Convocation

19th May, 1999.

Hon'ble Governor of Assam and Chairman of the Board of Governors of IIT Guwahati, 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 very first convocation of the Indian Institute of Technology, Guwahati. It is our privilege on this historic occasion to have amidst us the Hon'ble Chief Minister of Assam, Shri Mahanta, who, as the then President of the All Assam Students' Union in 1985, was one of the architects of the Assam Accord and was instrumental in paving the way for setting up of a sixth IIT in Assam as a part of that Accord. We therefore extend a very special welcome to you, Sir, and look forward to hearing your Convocation address.

It is my pleasant duty now to present to you a report of the activities of this Institute from the time of its establishment till now. I would like to begin the report with the genesis of this Institute.

GENESIS

The Assam Accord signed in August 1985 by the then Prime Minister, Sri Rajiv Gandhi, and the student leaders of the All Assam Students Union, stipulated among other clauses, that an IIT be set up in the State of Assam.

Immediately thereafter, the Educational Consultants India Limited (EdCIL) was entrusted with the task of preparing a detailed Project Report in August, 1987. In this context, an Advisory Committee of eminent persons was constituted to help EdCIL in preparing the project report. In addition, 23 working groups comprising of experts in identified fields were constituted to draw up details of the individual departments and areas. Prof. R. C. Malhotra, the then

Deputy Director, IIT Delhi, who was the convener of the committee to prepare the detailed Project Report, was appointed in December 1987, as a part-time Project Director, to carry out the groundwork necessary for setting up an IIT. In December 1988, a detailed Project Report was submitted to the Government of India.

To initiate the establishment of IIT Guwahati, the Ministry of Human Resource Development and the Government of Assam undertook the task of providing suitable and sufficient land for locating the Institute and a 'Site Selection Committee' was formed. The Government of India had approved a site having an area of approximately 700 acres at Misa in Nagaon district as the site for locating the proposed IIT. However, because of various socio-political reasons, it was not possible to acquire the land for the main campus and thus the search for an appropriate site for locating the IIT was renewed.

Using the guidelines laid down by the Site Selection Committee, the Government of Assam was able to identify a site measuring around 285 hectares at Amingaon, North Guwahati, which broadly met many of the specific requirements in terms of both engineering qualities and holistic considerations and could therefore be considered for locating the proposed IIT. After examining the observations and recommendations of the Site Selection Committee, the Union Ministry of Human Resource Development communicated the approval of the Government of India to the site at North Guwahati. As a follow-up to this decision, the Ministry of Human Resource Development requested the Government of Assam to initiate necessary action for land acquisition.

As the preliminary step towards establishing the IIT pending amendment of the IIT Act of 1961, the Indian Institute of Technology, Nagaon-Assam Society was formed in February 1989 when the site was initially selected at Nagaon. Subsequently, in 1991, the Indian Institute of Technology, Guwahati-Assam Society was formed when the site was finalised at North Guwahati, and the revised Project Report was submitted in 1992.

The foundation stone of IIT Guwahati was laid on 4th July, 1992, by the then Prime Minister, Sri P.V. Narasimharao. In May, 1994, the IIT Act was amended by both houses of the Parliament to include IIT

Guwahati as the sixth IIT. By a notification of MHRD, the Central Government declared 1st September, 1994, as the day on which the Institute of Technology (Amendment) Act, 1994, came into force, and IIT Guwahati was formally established on that day.

This entire process took eight long years. Even after land acquisition by the Govt. of Assam, encroachment of IIT land further delayed the project. In February, 1994, the Govt. of India appointed a full time Project Director, who was to take over as the founder Director when IIT Guwahati was established through amendment of the IIT Act. The land was handed over to IIT Guwahati by the district authorities on 26 April, 1995.

Before undertaking works for the main campus at North Guwahati, an 'All India Design Idea Competition' for the Master Plan of IIT Guwahati was conducted. The final 22 entries for the competition were displayed at IIT Delhi from which an eminent jury selected the first and second prize winners in March, 1995. An exhibition of all the competition entries was held for the public at Guwahati in July, 1995. The winning entry of the Master Plan was finally displayed at the premises of the Institute and was appreciated by the then Chairman of the Board of Governors of the Institute, the Hon'ble Governor of Assam, Sri L.N. Mishra, Hon'ble Minister of HRD, Sri Madhavrao Scindia and the Hon'ble Chief Minister of Assam, Sri Hiteswar Saikia.

ACADEMIC ACTIVITIES

Admission of students into undergraduate programme in Computer Science & Engineering, Electronics & Communication Engineering and Mechanical Engineering started from the academic session of 1995-96 with the first batch of 64 students. Pending construction of buildings at the site of the Institute, the Institute started functioning from hired space in the building of the Institution of Engineers (Assam) Centre in the heart of Guwahati city. From the academic session of 1998-99, students have also been admitted to undergraduate programmes in B.Des. in Design and B.Tech. in Civil Engineering. Other departments included Chemistry, Mathematics, Physics and Humanities & Social Sciences.

M.Tech courses were introduced in July, 1998, in Computer Science & Engineering, Electronics and Communication Engineering and Mechanical Engineering.

The Ph.D. programme was started in July, 1996, in Computer Science & Engineering, Electronics and Communication Engineering, Mechanical Engineering, Chemistry, Physics and Mathematics.

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

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

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

Undergraduate Programme :

1995 batch : 64 (CSE - 26, ECE - 22, ME - 16)

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 - 13, Des. - 12)

Total No. of U.G. students : 320

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

M.Tech. : 28 (CSE - 10, ECE - 11, ME - 7)

Ph.D. : 20 (CSE - 1, ECE - 1, ME - 3,
Phy. - 4, Chem. - 8, Maths. - 3)

Total No. of students (U.G & P.G.) : 368

The number of successful candidates who are to receive the B.Tech. degree today are as follows:

Computer Science & Engineering	- 25
Electronics & Communications Engineering	- 22
Mechanical Engineering	- 16
Total	- 63

The faculty and staff strengths of the Institute at present are respectively 63 and 128.

NEW PROGRAMME

Mention must be made here of the B.Des. programme in Design which is the first such programme in the country at the undergraduate level. The programme aims at preparing the students for the modern challenges in both product design and communication design by combining the principles of design, aesthetics and ergonomics. The programme is also expected to exploit the vast potential of natural resources and crafts of this region and open them up to the outside market.

R&D ACTIVITIES

Apart from the research projects undertaken by the students as a part of both undergraduate and postgraduate curriculum, the faculty of the Institute are also involved in sponsored research and consultancy projects. R&D Activities in the Institute were started from the very first year and they have picked up as more faculty have joined the Institute.

Sponsored Research

Currently there are 17 Sponsored Research Projects in the Institute with a total budget of Rs. 82.02 lakhs.

Some of the important sponsored research projects at present are :

Department of Computer Sc. & Engg.

1. Web Technology in Computer Networking,
2. ERNET Project,
3. Design & Fabrication of Chips Information Trans-mission and Processing.

Department of Electronics & Communication Engg.

1. Improved Patient Monitoring Systems Through Modern Signal Processing Techniques

Department of Mechanical Engineering

1. Mechatronics Project
2. Spark Plug Material Development

Department of Physics

1. A Modelling Utility for Defects by Rapid Analysis
2. Structural Investigations on Amorphous Semi-conductors
3. Neutron Diffraction Studies on Binary and Ternary Chalcogenide Glasses
4. Optical Measurement of Molecular and Atomic Densities in Spark and Flame like Media

Department of Chemistry:

Three projects, one each in Inorganic Chemistry, Organic Chemistry and Physical Chemistry, are in progress.

The major sponsoring agencies are the Government Departments of Science and Technology, Education, Electronics and Atomic Energy. Other sponsoring agencies are the Council for Scientific and Industrial Research, University Grants Commission and the Indian National Science Academy. As laboratory space and the basic infrastructure become available, more projects are expected to come to the Institute.

The Department of Science and Technology, under the ICOSER programme has given a grant of Rs.1 crore to establish a state-of-the-art computing facility for Research and Development in Sciences and Engineering. As part of this project, equipment worth Rs. 50 lakhs have been installed. These include a high-end multi-processor system, a cluster of compute servers, a file server, and a number of graphic workstations.

Recently, CDAC Pune has agreed to install a PARAM Supercomputer in the Institute. The cost of the system will be borne by the

Department of Electronics. The proposed configuration has four nodes each with two processors.

Hewlett Packard Inc. has donated a Workstation and Radio-frequency design software for R&D. The estimated value of the donation is Rs. 45 lakhs.

Pro-Engineer, a leading CAD software company, has donated 7 sets of their high-end CAD software containing application modules in various areas of Mechanical Engineering.

Consultancy Projects

The Institute is encouraging faculty members to participate in Consultancy Projects. Given the low industrialisation of the region, opportunities for such projects are less. Nevertheless, the Institute has done Consultancies for the Atomic Energy Regulatory Board, Geometric Softwares Ltd., Pune, State Bank of India Guwahati, and Assam Co-operative Apex Bank, Guwahati. The projects include 'Development of Structural Analysis Software', 'Networking' and 'Computerisation in Banks.

INSTITUTE PROGRAMMES

Interaction with Local Institutions

Faculty members of the Institute have been interacting with educational institutions and other organisations in the region by providing their expertise at various levels. Several faculty members of the Institute are in the Boards of Management and in various Academic Boards in the following institutions: NERIST, Itanagar, NEHU, Shillong, AMTRON, Guwahati, Institute of Advanced Studies in Science and Technology, Guwahati, Tezpur University, Gauhati University, Assam Engineering College and Assam University, Silchar.

IIT Guwahati helped in founding a new professional body called the 'Physics Academy of the North East', which is aimed at promoting research, education and student enlightenment in the area of Physics in the North East region.

Short Term Courses

The Department of Mathematics has conducted a number of short term courses. The topics included Infinite Permutation Groups, Model Theory, Function Theory and Asymptotic Group Theory. Guest faculty from other Institutes of India and from abroad, besides IIT faculty, gave lectures in these courses. The Department of Computer Science and Engineering has conducted courses on the Internet (For the Administrative Staff College, Khanapara) and on Operating System Internals.

The Department of Mathematics is holding a 'Mathematics Training and Talent Search Programme' at IIT Guwahati this summer and hopes to hold it for the next few years. The National Board of Higher Mathematics has awarded a Regional NBHM Library to IIT, Guwahati, which is a major achievement.

Visitors

Visits of prominent persons to the Institute began with the visit of Shri Madhavrao Scindia, the then Minister of Human Resource Development, on 26th July, 1995.

Dr. A.P.J. Abdul Kalam, Scientific Adviser to the Prime Minister, visited the Institute on 28th November, 1998, and addressed the students, faculty and staff of the Institute.

In addition, a large number of eminent professors from prestigious institutions from around the country and abroad, visited the Institute and delivered talks. The following are some of the visitors to the Institute from universities abroad :

Dr. Peter M. Neumann, Queens College, Oxford, U.K.

Dr. R. G. Mollar, University of Iceland.

Dr. D. Macpherson, University of Leeds, U.K.

Prof. S. Ruscheweyh, Universitat Wurzburg, Germany.

Prof. R. Aulaskari, University of Joensuu, Finland.

Dr. J. Pihko, University of Helsinki, Finland.

Dr. I.C. Chakravarty, Trent University, Canada.

Prof. A. Mann, Hebrew University of Jerusalem, Israel.

Dr. G. Ramanath, University of Illinois, U.S.A.

Prof. H. Paellmann, University of Halle, Germany.

Celebrations

Apart from celebrating the Independence Day and the Republic Day, IIT Guwahati also organised a few other functions.

To celebrate Diwali, IIT Guwahati arranged a river cruise on the Brahmaputra with a delightful cultural programme followed by a display of fireworks and a dinner for the the entire IIT family in the campus on 18/11/99.

CONFERENCES, WORKSHOPS AND SYMPOSIA

A number of faculty members participated in conferences and symposia in India and abroad during the last three years. These include conferences held in Cyprus, Belgium, U.K., South Korea, France, Bulgaria and Australia.

Two members of the Physics faculty were invited by LICTP, Trieste, Italy, for a Scientific Workshop in 1997 and 1998.

A few conferences and workshops were also organised by the faculty of the Institute during the last three years.

A regional conference on 'Physics Research in the North East' was held in 1998.

The 'Young Scientist Sensitisation Programme' sponsored by the Department of Science and Technology, was held in September, 1997.

A seminar on 'Trends in Inorganic Chemistry', sponsored by DST, was held in April, 1999.

A workshop on 'Signal Processing' was organised by the Deptt. of Electronics & Communication in March, 1999.

FACULTY ACTIVITIES

Apart from the regular teaching and research activities, all the faculty members of the Institute are actively engaged in setting up new laboratories, formulating new courses of study, selecting uptodate equipment and in various administrative and organisational tasks necessary for smooth running of the Institute and setting trends for the future. Setting up new deaprtments, laboratories and course curriculum requires considerable time and effort, and I am happy to say that the faculty has been able to rise to the occasion superbly.

Publications

The faculty has also been busy during this period in publishing their research findings in various journals and conferences and in the form of books/monographs. The total number under various categories are :

Journal Papers	: 96
Conference Papers	: 83
Books/Monographs	: 4

Honours/Awards

The following faculty members won honours/awards during the past three years :

Physics Department :

Dr. A. Srinivasan	DAE Young Scientist Research Award for 1996.
Dr. P. Senthilkumaran	INSA Young Scientist Medal 1997.

Chemistry Department :

Dr. B. K. Patel	Prof. R.C. Tripathy Young Scientist Award, 1998, Orissa Chemical Society.
Prof. M.K. Chaudhuri	Best cited "Chemist & Chemical Engineers" by ISI , USA, 1998. and, Prof. C. Natarajan Endowment Award, Madurai Kamraj University, Tamil Nadu, 1998.

INFRASTRUCTURE AND CONSTRUCTION PROGRAMME

Since its inception, the Institute has been functioning from the Institution of Engineers Building in the city. Offices, classes, laboratories and library facilities were set up in this building. For the first three years, all the classes and laboratories for the undergraduate and postgraduate programmes were conducted in this setup.

The Institute has completed the construction of a complex with seven single-storeyed blocks measuring 8412 sqm. This complex is used for all the current academic and administrative activities till the main academic and administrative complexes are built. Mechanical

workshop and other Mechanical Engg. labs. started functioning from this complex from January, 1998. Currently, all the undergraduate and the M.Tech. and Ph.D. classes together with the library are functioning in this complex from August, 1998.

Library Facilities

The Central Library, one of the important central facilities of the Institute, currently has over 21,000 volumes, including textbooks, reference books, conference proceedings, back volumes and subscribes to about 475 current periodicals.

All operations of the library are automated with the help of an integrated library software package (LIBSYS) and the On-Line Public Access Catalogue (OPAC) provides to the users various indexes. A database for the entire library stock has been created.

The Library has recently acquired IEEE/IEE full text journals and conference proceedings on CD-ROMs. Efforts are being made to have co-operative arrangements with other IITs and premier institutions for better sharing of information.

Electronic mail and Internet facilities are provided to all faculty members. Computer facilities are provided in every hostel.

Campus

The construction of various buildings for academic purposes and administration, including three hostels (with a capacity of accommodating 300 students each), 115 residential quarters for faculty and staff members along with other amenities for the employees and students are already in progress and is being given top priority by the Institute. These buildings will be ready during the current year, and immediately after these are ready for occupation, all the activities of the Institute including faculty residences and students' hostels will shift to the campus. For environmental conservation and beautification of the campus, a plantation programme has been started and in its first phase, 500 saplings have been planted.

Construction of internal roads and the main approach road to the campus from NH-31 are already under way. Work is in progress for providing other infrastructural facilities such as water and electricity.

STUDENTS' ACTIVITIES

Scholarships/Awards/Prizes

Merit-cum-Means Scholarships were awarded to 12 students during 1996-97 session, 22 students during the 1997-98 session and to 31 students during the 1998-99 session. In addition, 8 students of the first batch were awarded different scholarships by outside agencies.

Ms. Munima Bora Saharia, a research scholar of the Physics department was awarded the Best Young Scientist Paper at National Symposium on Solid State Ionics in 1998.

Mr. D. K. Sinha of the Mechanical Engg. Deptt. won a prize in the TechFest'98 held at IIT Bombay.

Mr. K.S. Subramanyam and Mr. P. Karunakar, 2nd Year B.Tech students of the Electronics & Communication Engg. Deptt. won the third prize in Tech. Fest'99 of IIT Bombay for the project 'Fully Automatic Call Monitor & Billing Systems'.

Mr. Abhay Chrungoo, Mr. Nayan Jain and Mr. G. Kataria, 2nd year B.Tech. students, won third prizes in different categories in TRYST '99, the Technical festival of IIT Delhi.

Cultural Activities :

'Alcheringa' is an annual cultural festival of IIT Guwahati organised and conducted fully by the students. The first programme, Alcheringa'97 was a two-day cultural programme held on 22nd and 23rd March, 1997. Alcheringa'98, held in February, 1998, attracted a wide cross-section of students from Guwahati. Alcheringa'99, held on 5th, 6th and 7th February in the IIT Campus was a thumping success with a variety of programmes.

A 'SPIC-MACAY IIT Guwahati Sub-Chapter' was opened on 08/09/97 with a vocal recital by Pt. Rajan Mishra and Sajan Mishra. Prior to this, the Guwahati Chapter of SPIC-MACAY organised

several programmes in IIT Guwahati. These included a 'Kathak' performance by Prema Shrimali in October 1995 and a Bharatnatyam performance by Leela Samson on 4th April, 1996.

The Eye Magazine of SPIC-MACAY and the Dalai Lama Foundation jointly organised in January, 1998, a 'Campus Outreach Programme' in IIT Guwahati as a part of 'India's Quest' to commemorate 50 years of India's Independence. The theme for the programme was 'Pluralism' which included a speech by the renowned scholar, Dr. Ashish Nandi, a film by Mr. Pankaj Butalia and a play by the noted dramatist, Mr. Habib Tanvir.

Langa Manganiyas, a Rajasthani Folk Music Group performed at the Institute on 11th May, 1999, under the auspices of SPIC-MACAY.

'Natya Manjiri', the Intra-IIT Drama Competition was held on 13th March, 1999.

The students have also been taking part in essay writing, music and painting competitions, and winning prizes in Inter-College Debating Competitions. The Institute Gymkhana has a music club with a number of musical instruments.

The student body formed two associations :

1. 'The Computer Science Engineering Association' (CSEA) which organised a workshop on Unix in October, 1998.
2. 'The Electronics and Communications Engineering Association (ECEA)' known as "CEPSTRUM" was formed in January 1999. It organised a Tech Quiz on 30/01/99 and a workshop on 'Signal Processing Techniques in Information Technology' on 27th and 28th March, 1999. It also brought out IIT Guwahati's first Technical Magazine called 'The Gazette' in March, 1999.

'Kshitij' was the first magazine of the students of IIT Guwahati and was brought out in April, 1996. The students have also brought out two issues of an interesting and informative periodical called 'Besides'.

Sports Activities

IIT Guwahati participated in all the Inter IIT Sports Meets from 1995 onward held at IIT Kanpur, IIT Delhi, IIT Kharagpur and IIT Bombay

respectively. The students undergo an intensive coaching camp held in the first week of December.

Some of the students also take interest in other sporting activities on their own. This year, three of our boys are participating in a mountaineering coaching programme being held in Manali from 1st May, 1999.

Placement

A Placement Cell has been established in order to assist the graduates of the Institute in getting suitable employment. Placement activities were initiated in the middle of 1998 in order to place the first batch of B.Tech students. 15 companies/ organisations from the government and the private sector including IT multinational firms, conducted campus interviews during 1998-99. 54 B.Tech. students (i.e. 86%) were able to secure challenging and highly paid positions in some of the top ranking organisations of the country such as DE Shaw India Software Pvt. Ltd., IBM Global Services India Pvt. Ltd., Hughes Software Systems, Philips Software Pvt. Ltd., Vedika Software Private Ltd., Wipro Infotech Group, Indian Oil Corporation Ltd., Tata Consultancy Services, Rimo Technologies, ATS Computer Associates, Defence Research & Development Organisation, IBP Co. Ltd., Interra Software (India) Pvt. Ltd. and TELCO.

CONCLUDING REMARKS

The Institute is now geared to go ahead with all the construction activities which have been planned for the next eight years. Adequate funds for this purpose have been approved for the Ninth Plan, and by the end of the tenth plan, the Institute is expected to function like a full fledged IIT. It will be the endeavour of all the students, faculty and staff of the Institute to make this new IIT one of the best technological institutions in the world.

In conclusion, I extend my heartiest congratulations and best wishes to all the graduating students. The country and the Institute expect you to lead the way in transforming India from a developing country into one of the most developed countries of the twenty first century.

Jai Hind.