

# Director's Report

Seventeenth Convocation  
8 June 2015



**Indian Institute of Technology Guwahati**

Smt. Smriti Zubin Irani, Hon'ble Minister of Human Resource Development, Govt. of India; Dr. R. P. Singh, Chairman, Board of Governors; members of the Board of Governors; members of the Senate; invited dignitaries, guests; graduating students and their family members; members of the media; faculty and staff of the Institute; ladies and gentlemen – it is my pleasure to welcome you all to the Seventeenth Convocation of IIT Guwahati.

I take this opportunity to thank Smt. Smriti Zubin Irani for accepting our invitation to be the Chief Guest of this Convocation and for kindly agreeing to deliver the Convocation Address.

I am glad to share with you that 124 PhD students, 578 undergraduate students and 415 postgraduate students will receive their degrees. I extend my heartiest congratulations to all of them.

Now I am going to present a brief report on the activities and achievements of the Institute during the year 2014-2015.

## **THE BOARD OF GOVERNORS**

Prof. R. Alam, Professor, Department of Mathematics, Indian Institute of Technology Guwahati joined the board in January 2015 as a nominee of the Senate. Mr. U. C. Das, Registrar, Indian Institute of Technology Guwahati, joined the board in December 2014 as Secretary. Dr. B. N. Raychoudhury, Registrar, Indian Institute of Technology Guwahati, retired on 30 November 2014. We offer our heartfelt gratitude to Dr. Raychoudhury for his dedicated service to the Institute. Prof. P. S. Robi, Professor, Department of Mechanical Engineering, has completed his tenure as the nominee of the Senate in December 2014. On behalf of the Board, I welcome the new members to the Board and thank the outgoing members, Dr. B. N. Raychoudhury and Prof. P. S. Robi for their contributions during their tenure.

## **ISHĀN VIKĀS**

The Government of India is keen on developing the education scenario of the North-Eastern part of the country. In one such move in that direction, a special programme was envisaged where students of the North-Eastern states – especially schoolchildren – would be exposed to the best of the engineering institutions in different parts of the country. IIT Guwahati was given the responsibility to coordinate the efforts in that direction and to submit a report by the middle of August 2014.

Ishān Vikās, an initiative of the MHRD, therefore, was started as a comprehensive plan to bring selected schoolchildren from the North-Eastern states into close contact with the IITs and IISERs during their vacation periods. An internship programme for the engineering college students of North-Eastern states in various IITs and NITs has also come under the umbrella of this

programme. One of the focal points of these visits is to open up the young minds and give them a broad overview of the future paths which they could traverse. They should get a wider perspective on how they can take a much more proactive role in shaping their own future. Schoolchildren from the North-Eastern states will be naturally motivated to acquire higher skills if they get a chance to visit the campus of a premier institute, to walk inside the hostels, sit in the classes, talk to students and meet research scholars working in the laboratories.

Until now, about 200 schoolchildren and about 150 engineering students studying in various institutions in the North East have participated in the programme. In the pilot phase of the programme, IIT Bombay, IIT Kharagpur, IIT Kanpur, IIT Guwahati, IIT Delhi, IIT Madras and NIAS have already hosted participants of the programme. From summer 2015, more IITs and IISERs are hosting participants from the NE region.

### **CENTRE OF EXCELLENCE STATUS TO THE CHEMISTRY DEPARTMENT**

With great pleasure I take this opportunity to inform you that the Ministry of Human Resource Development has accorded the Centre of Excellence status to Chemistry Department of the Institute. This is under the aegis of Training and Research in Frontier Areas of Science and Technology (FAST) of MHRD. A large number of publications in the top-tier interdisciplinary journals and high citations made this achievement possible. Let us join in congratulating all the faculty members, research scholars, students, project employees, and staff members of the Department. Also the roles of all the academic leaders (current and earlier Heads) involved in shaping up the Department are deeply appreciated.

### **MAJOR INITIATIVES IN RESEARCH AND DEVELOPMENT**

Dr. Sachin Kumar and his team in the department of Biosciences and Bioengineering have sequenced the complete genome sequence of many Indian isolates of Newcastle disease virus, an important pathogen for the poultry industry in our country. His team also contributed significantly in the development of vaccines and diagnostics against Newcastle disease virus and classical swine fever virus, two very important animal pathogens.

Prof. V. K. Dubey and his team in the department of Biosciences and Bioengineering established molecular mechanisms of death that contribute to the anti-leishmanial activity of betulin. His team has also provided fundamental insights into role of spermidine in parasite infection and survival. The spermidine starvation as a result of LdSS inhibition is not related to elevated levels of reactive oxygen species. This suggests the involvement of spermidine in processes other than redox metabolism in Leishmania parasites. Their work provides a novel scaffold, i.e., hypericin, as a potent antileishmanial molecule. This is a new lead against deadly disease, Leishmaniasis (commonly known as kala-azar in India)

X-ray crystallography facility for macromolecules has been installed in the Central Instruments Facility of the Institute under the DBT sponsored project 'Studies on structure of enzymes and their interaction with nanostructured materials for bioelectronics devices and other applications' headed by Prof. Pranab Goswami, Department of Biosciences and Bioengineering. This cutting edge research facility is also considered as great asset for the researchers of this region working in the field of protein sciences.

The Centre for Nanotechnology is implementing the DeitY project for establishing a 'Centre for Excellence in Research and Development of Nanoelectronic Theranostic Devices'. Theranostics—a combination of diagnostics and therapy, is one of the most pressing technological issues of our times. The efforts are focussed on developing a cutting edge technology for diagnosing of severe diseases. Once successful, this can directly affect the well-being of large number of people who need medical care.

### **ACADEMIC ACTIVITIES**

The Institute offers

- Bachelor of Technology (BTech) Programmes in Biotechnology (BT), Chemical Engineering (CL), Chemical Science and Technology (CT), Civil Engineering (CE), Computer Science and Engineering (CS), Electronics and Communication Engineering (EC), Electronics and Electrical Engineering (EE), Engineering Physics (EP), Mathematics and Computing (MC), and Mechanical Engineering (ME);
- Bachelor of Design (BDes) programme in Design (DD);
- Master of Technology (MTech) programmes in BT, CL, CE, CS, EE, and ME;
- Master of Design (MDes) programme in Design;
- Master of Science (MSc) programmes in Chemistry (CH), Mathematics and Computing (MC), and Physics (PH);
- Master of Arts (MA) programme in Development Studies (DS) in the Department of Humanities and Social Sciences (HS);
- Doctor of Philosophy (PhD) programmes in all the Departments and in the Centre for Energy (EN), Centre for the Environment (EV), and Centre for Nanotechnology (NT);
- Dual (MTech+PhD) programme in the Department of Computer Science and Engineering (CS)

The total number of enrolled students in 2014-2015 is 5186. Of these, 50.39% are postgraduate students. The detailed break up is –

### Preparatory Programme: 3

#### Four-year BTech and BDes: 2570

Batch	BT	CE	CL	CS	CT	DD	EC	EE	EP	MC	ME	Total
Fourth Year (2011 Batch)	39	63	57	79	34	34	80	44	32	45	79	586
Third Year (2012 Batch)	46	70	59	88	40	41	78	45	35	51	88	641
Second Year (2013 Batch)	45	72	58	88	40	39	80	46	39	50	87	644
First Year (2014 Batch)	43	79	69	80	40	41	71	42	41	46	80	632
From earlier batches												67
<b>Total</b>												<b>2570</b>

#### Two-year MSc: 262

Batch	CH	MC	PH	Total
Second Year (2013 Batch)	42	41	37	120
First Year (2014 Batch)	47	44	47	138
From earlier batches				4
<b>Total</b>				<b>262</b>

#### Two-year MA: 47

Batch	DS	Total
Second Year (2013 Batch)	22	22
First Year (2014 Batch)	25	25
<b>Total</b>		<b>47</b>

#### Two-year MTech: 707

Batch	BT	CE	CL	CS	EE	ME	Total
Second Year (2013 Batch)	31	80	41	43	46	85	326
First Year (2014 Batch)	33	92	52	56	45	94	372
From earlier batches							9
<b>Total</b>							<b>707</b>

**Two-year MDes: 53**

Batch	DD	Total
Second Year (2013 Batch)	27	27
First Year (2014 Batch)	26	26
<b>Total</b>		<b>53</b>

**Dual (MTech + PhD) Degree: 13**

Batch	CS	Total
Fourth Year (2011 Batch)	3	3
Third Year (2012 Batch)	3	3
Second Year (2013 Batch)	3	3
First Year (2014 Batch)	4	4
<b>Total</b>		<b>13</b>

**PhD: 1531**

BSBE	CE	CH	CL	CS	DD	EE	EN	EV	HS	MA	ME	NT	PH
165	153	194	145	73	47	183	38	25	99	66	185	32	126

The new academic session (2014-2015) commenced from July 2014. 1444 students were admitted in various programmes across all the Departments/Academic Centres in July 2014. This includes 3 students in the Preparatory Programme. Another set of 121 students were admitted in PhD programmes in various Departments/Academic Centres in January 2015. Thus a total of **1565** students were admitted in the academic year 2014-2015. The details of new admissions are given in the table below:

Department/Centre	BTech/ BDes	MSc/ MA	MTech/ MDes	PhD	Dual [MTech+PhD] Degree
Biosciences and Bioengineering	43	–	33	44	-
Chemical Engineering	69	–	52	34	-
Chemistry	40	47	–	35	-
Civil Engineering	79	–	92	38	-
Computer Science and Engineering	80	–	56	21	4
Design	41	–	26	15	-
Electronics and Electrical Engineering	113*	–	45	40	-

Department/Centre	BTech/ BDes	MSc/ MA	MTech/ MDes	PhD	Dual [MTech+PhD] Degree
Humanities and Social Sciences	-	25	-	25	-
Mathematics	46	44	-	9	-
Mechanical Engineering	80	-	94	42	-
Physics	41	47	-	28	-
Centre for Energy	-	-	-	14	-
Centre for the Environment	-	-	-	11	-
Centre for Nanotechnology	-	-	-	9	-
<b>Total</b>	<b>632</b>	<b>163</b>	<b>398</b>	<b>365</b>	<b>4</b>

\* *BTech in Electronics and Communication Engineering: 71, and BTech in Electronics and Electrical Engineering: 42.*

Today, **1117** students, who have successfully completed their programmes will receive their degrees in the following disciplines:

### Number of students obtaining degrees in June 2015 – 1117

#### Four-year BTech and BDes

Total	BT	CE	CL	CS	CT	DD	EC	EE	EP	MC	ME
<b>578</b>	38	63	52	80	31	35	79	47	28	48	77

#### Two-year MA

Total	DS
<b>24</b>	24

#### Two-year MSc

Total	CH	MC	PH
<b>124</b>	42	46	36

#### Two-year MTech/MDes

Total	BT	CE	CL	CS	DD	EE	ME
<b>267</b>	25	58	27	38	26	35	58

## PhD

Department	No. of Students
BSBE	16
CE	8
CL	19
CH	16
CS	8
DD	2
EE	10
EN	2
EV	2
HS	3
MA	9
ME	12
NT	2
PH	15
<b>Total</b>	<b>124</b>

## ACADEMIC INFRASTRUCTURE DEVELOPMENT

A number of new equipments have been added to the laboratories of the Departments and Centres. Some of the major equipment and facilities acquired by the Institute during the year under report are –

- MALDI-TOF (Matrix Assisted Laser Desorption/Ionisation-Time of Flight) mass spectrometer – ₹146 lakhs (CIF)
- 250 KN Servo Hydraulic Universal Testing Machine – ₹158 lakhs (CIF)
- High Performance Computational Setup – ₹ 51 lakhs (Biosciences and Bioengineering)
- Time-Correlated Single Photon Counting (TCSPC) Lifetime System with Microchannel Plate (MCP) Detection – ₹ 53 lakhs (Chemistry)
- Nano Particle Size, Zeta Potential, Molecular Weight and Measurement Facility – ₹ 24 lakhs (Chemistry)
- Warm Isostatic Press – ₹ 46 lakhs (Mechanical Engineering)

I am happy to inform you that the Central Library of the Institute was named after the great pioneer of modern Assamese literature Sahityarathi Lakshminath Bezbaroa in December 2014. Being a major central service point, the library provides necessary support for teaching, learning and research activities of the Institute by creating state-of-the-art facilities and offering innovative services to the students, faculty and staff members and visiting intelligentsia. The library operations are fully computerised and the entire premise is provided with Wi-Fi facility for connecting to the Internet and accessing Institute's electronic resources. During the reported period, the total library circulation transactions stand at about 1.5 lakhs. In addition, many users of other academic Institutions



have also availed the reference facility. The library has a collection of about 1.55 lakh printed books and bound volumes of journals, 1.46 lakh e-books, and 120 print and 12835 online journals along with a substantial number of other documents.

The Computer and Communication Centre has developed a state-of-the-art Data Centre with an area of standard 1100 sq. ft. at a total cost of around ₹ 381 lakhs. This will provide infrastructure for better management and control of data processing and IT equipment of the Institute.

## RESEARCH AND DEVELOPMENT

The number of PhD students on campus is increasing every year. This year has seen a big jump in numbers, growing from 1310 students last year to 1531 this year. The current faculty to PhD students' ratio stands at a satisfactory 4.12. The number of graduating PhD students has considerably increased to 124 from 106 in the previous year.

The other component of our research programme is sponsored (or directed) research. There are 407 research projects in progress with a total sanctioned value of about ₹ 250 crore. In the year under report we received 82 new projects with a sanctioned value of ₹ 50 crore. The R&D projects are mainly sponsored by Government Ministries and Departments with major support coming from Ministries of Environment (MoE), Human Resource Development (MHRD), Steel, Departments of Science and Technology (DST), Biotechnology (DBT), Atomic Energy (DAE), Electronics and Information Technology (DeitY), Council of Scientific and Industrial Research (CSIR) and Defence Research Labs (DRL). We also have a considerable number of industry supported research projects. 270 personnel are engaged in various research projects at the Institute.

Some of the major research projects received during the year are –

Project Title	Department/ Centre	Funding Agency	Amount Sanctioned (₹ in lakhs)
National Initiative for setting up of Design Innovation Centre	Design	MHRD	1000.00
A Pilot Project on Ishan Vikas	IITG	MHRD	605.45
Establishment of centre of excellence for training and research in frontier areas of science and technology (FAST)	Chemistry	MHRD	400.00

Mathematical model study of the river Brahmaputra with emphasis on climate change	Civil Engineering	Govt. of India, Brahmaputra Board	282.00
Technical Education Quality Improvement Programme (TEQIP-II)	Centre for Educational Technology	MHRD	250.00
Special manpower development programme for CHIPS to system design (SMDP-C2SD)	Electronics and Electrical Engineering	DeitY	236.40
DBT Pan IIT Centre for Bioenergy	Biosciences and Bioengineering	DBT	174.16
Exploring the binding space to develop an optimal transcriptional control system for abiotic stress tolerance in crops	Biosciences and Bioengineering	DBT	111.42
Investigating the role of protein dynamics on the function of a few intrinsically disordered proteins	Biosciences and Bioengineering	DBT	98.20
ICT based framework to enhance the teaching and learning experience in a large classroom	Computer Science and Engineering	DeitY	94.32

*DBT – Department of Biotechnology, Govt. of India*

*DeitY – Department Electronics and Information Technology, Govt. of India*

*MHRD – Ministry of Human Resource Development, Govt. of India*

In addition to sponsored Research Projects, IIT Guwahati undertakes consultancy assignments for various State Government Departments, Railways, National Highways Authority of India, Oil and Gas Sector, Construction and Infrastructure Companies, Power Sector, Educational Institutes, Health and Pharmaceutical Industries and Financial Institutions. Consultancy projects are contributing to the industrial, economic and social growth of the country with special emphasis on this region.

A total of 119 consultancy projects were carried out during the year. The total value of consultancy projects undertaken during this year is ₹ 3.25 crore, and ₹ 3.62 crore was received for all consultancies.

One addition was made to the incubating companies functioning under the IIT Guwahati Technology Incubation Centre (IITG-TIC) with the total number of companies standing at seven. These companies are currently working in IT, electronics, bio-engineering and innovative design related projects.

The Institute has applied for fourteen patents during the period under report.

## **FACULTY AND STAFF**

The faculty strength at the end of March 2015 was 372. This is an increase of 30 from 342 at the end of last year.

The number of non-teaching staff at the end of the financial year 2014-2015 was 416 which is 66 more than the previous year.

## **PUBLICATIONS**

The faculty members of the Institute have been actively publishing research papers in international and national journals as well as in conference proceedings. The number of publications during the past one year is:

<b>Papers in Journals:</b>	<b>763</b>
<b>Papers in Conference Proceedings:</b>	<b>487</b>

In the previous year 784 papers in journals and 464 papers in conference proceedings were published by the faculty of the Institute.

I am happy to inform you that Nature, one of the most prominent journals of science, has included IIT Guwahati among the top ten Indian institutions by comparing the citation rates in Elsevier's Scopus database for the period from 2010 to 2014. IIT Guwahati has citation impact of 1.07 with 3,700 papers in Elsevier's database for the above period, and it has been ranked seventh in the list.

## **CONFERENCES/WORKSHOPS/SYMPOSIA**

Various conferences, seminars and workshops were organised by the Departments and Centres of the Institute during the year. A few of them are –

- National Conference on Sustainable Development of Environmental Systems, June 2014
- National Workshop on Molecular Modelling and Simulation of Sustainable Polymers and Nanocomposites (MSSP-14), August 2014
- National Workshop on GPU Programming and Applications (GPA3-2014), September 2014
- Dialogue on Strengthening Community Engagement in Higher Education Institutions, September 2014
- Conference on North East in India's Look East: Issues and Opportunities, October 2014

- International Ergonomics Conference (HWWE 2014), December 2014
- National Conference on Frontiers in Chemical Science (FICS-2014), December 2014
- National Conference on Recent Advances in Cancer Biology and Therapeutics, December 2014
- XXI DAE-BRNS High Energy Physics Symposium, December 2014
- 5<sup>th</sup> International and 26<sup>th</sup> All India Manufacturing Technology, Design and Research Conference (AIMTDR-2014), December 2014
- 3<sup>rd</sup> NKN Annual Workshop, December 2014
- Second Symposium on Advances in Sustainable Polymers (ASP-15), January 2015
- National Conference on Commutative Algebra and Algebraic Geometry, February 2015
- Workshop on NEMS and Theranostic Devices, March 2015

### **MEMORANDA OF UNDERSTANDING AND INTERNATIONAL RELATIONS**

The Institute currently has fifty five active Memoranda of Understanding (MoUs) with various educational and research institutes across the world. The MoUs are mainly on academic and research collaborations, and student exchange. Eight international and six national MoUs were signed during the year under report. Some of these institutes are Missouri University of Science and Technology (USA), Emory University (USA), Hokkaido University (Japan), Yeungnam University (South Korea), Hankuk University (South Korea), Mondragon University (Spain), National Tsing Hua University (Taiwan) and Tongmyong University (South Korea).

Currently there are 32 international students enrolled for various full time courses at IIT Guwahati. Six out of them will receive degrees in this Convocation. Eight students from international institutions/universities of repute visited IIT Guwahati under various academic agreements. Two students and two staff members received fellowship for study trip to foreign universities under Erasmus Mundus fellowship programme 2014-2015. Apart from that, 16 students of the Institute were selected for internship to institutes like NUS, Singapore; National Tsing Hua University (NTHU), Taiwan; Paris Tech University, France, etc.

### **ALUMNI ACTIVITIES**

IIT Guwahati launched the online donation gateway portal for receiving donations concerning various specific and non specific activities. Mr. Siva Yellamraju, a class of 2002 Computer Science and Engineering alumnus donated Rs. 2 lakhs to facilitate a customised electrically operated wheel chair for Mr. Vishal Singh, a first year undergraduate student of Electronics and Electrical Engineering. Mr. Harish Chandra, a class of 2012 Computer Science and Engineering alumnus donated Rs. 1 lakh to start Kalyani Research Award, a new perpetual scholarship in the name of his mother to start with Rs. 25,000/-

per year for the next four years for Computer Science and Engineering undergraduate students to publish paper in the field of computer science.

## **FACULTY ACHIEVEMENTS**

A number of faculty members received awards and brought accolades for the Institute during the year. We just mention a few below.

IIT Guwahati has bagged four projects out of the 20 projects awarded to PANIIT-ONGC consortium. Oil and Natural Gas Corporation Limited (ONGC) and Pan-IIT – a consortium of seven premier Indian Institutes of Technology which includes IIT Kharagpur, IIT Kanpur, IIT Madras, IIT Bombay, IIT Delhi, IIT Guwahati and IIT Roorkee – signed a Memorandum of Collaboration (MoC) to work towards a joint R&D programme to enhance exploration and exploitation of hydrocarbons and alternate sources of energy. Projects submitted by Prof. Arun Goyal, Department of Biosciences and Bioengineering; Dr. Debasish Das, Associate Professor, Department of Biosciences and Bioengineering; Dr. S. Senthimurugan, Assistant Professor, Chemical Engineering; Dr. Rashmi Dutta Baruah, Assistant Professor, Computer Science and Engineering have been awarded.

Dr. B. Anand, Assistant Professor, Biosciences and Bioengineering, was chosen for the National Academy of Sciences (NASI) Young Scientist Platinum Jubilee Award for the year 2014 in the field of biomedical, molecular biology and biotechnology. He was also selected for Innovative Young Biotechnologist Award for the year 2014 by the Department of Biotechnology, Govt. of India.

Prof. Vikash Kumar Dubey, Biosciences and Bioengineering, has been selected for Dr. P. N. Raju Oration Award of Indian Council of Medical Research (ICMR) for his work on an infectious disease, Leishmaniasis. He also received Prof. Umakant Sinha Memorial Award of the Indian Science Congress Association.

Prof. Latha Rangan, Biosciences and Bioengineering, received Dr. J. N. Baruah Memorial Award 2014 in the area of biological sciences, given by Assam Science Society.

Dr. L. M. Pandey, Assistant Professor, Biosciences and Bioengineering, received Innovation in Science Pursuit for Inspired Research (INSPIRE) Faculty Award 2014 of Department of Science and Technology, Govt. of India, in engineering and technology discipline.

Dr. Utpal Bora, Professor, Biosciences and Bioengineering, has been awarded UXCEL award by Department of Biotechnology, Govt. of India in the form of a project entitled 'Exploration and characterisation of seri-bioresources of North East India for potential textile and non-textile applications' for three years.

Prof. V. V. Dasu, Biosciences and Bioengineering, has been elected as FABP (Fellow, Association of Biotechnology and Pharmacy) in recognition of outstanding research contributions to medical biotechnology.

Prof. Pallab Ghosh, Chemical Engineering, was awarded Shri G. M. Abhyankar Memorial Distinguished Fellowship in Chemical Engineering for the year 2014-2015 by Institute of Chemical Technology, Mumbai.

Prof. Arun Chattopadhyay, Chemistry, was re-nominated as an editorial advisory board member of the Royal Society of Chemistry Journal *Nanoscale*. He was also selected a member of Task Force on Nanobiotechnology, Department of Biotechnology, Govt. of India.

Prof. T. Punniyamurthy, Chemistry, won the Chemical Research Society of India Bronze Medal for the year 2015. He was also selected Fellow of Royal Society of Chemistry (FRSC).

Dr. Abhishek Kumar, Assistant Professor, Civil Engineering, has received INSPIRE faculty award 2014 of Department of Science and Technology, Govt. of India.

Dr. S. Sreedeeep, Associate Professor, Civil Engineering, has been awarded Shamsher Prakash Research Award of IIT Roorkee for his outstanding work in the field of geotechnical earthquake engineering.

Dr. Amit Sethi, Assistant Professor, Electronics and Electrical Engineering, was awarded IUSSTF fellowship for conducting research on prostate cancer recurrence prediction with collaborators at University of Illinois at Chicago (USA).

Dr. Arupjyoti Saikia, Associate Professor, Humanities and Social Sciences, received Srikant Dutta Book award given by the Nehru Memorial Museum and Library, New Delhi, for the best book on North East India in the period 2009-2014 for his book *A Century of Protests: Peasant Politics in Assam*. He was also chosen for the Suryya Kumar Bhuyan Endowment Chair on Assam History in the department of Humanities and Social Sciences for the period of 2014-2019.

Dr. Debarshi Das, Associate Professor, Humanities and Social Sciences, received Fulbright Nehru fellowship for research visit to the Department of Economics, University of Massachusetts, Amherst, USA.

Dr. Deepak Sharma, Assistant Professor, Mechanical Engineering, received NVIDIA innovation award for his contribution towards using graphics processing unit in structure optimisation problems.

Dr. M. Ravi Sankar, Assistant Professor, Mechanical Engineering, received Institution of Engineers India (IEI) Young Engineer Award in production engineering for the year 2014.

We warmly congratulate them all.

## **CONSTRUCTION AND CAMPUS DEVELOPMENT**

Keeping in conformity with the continuous growth of the students, the existing infrastructure of the Institute is strengthened with new construction and extensions.

### **Students' Hostels**

In the tenth boys' hostel named Lohit – with capacity of 200 rooms with attached toilet for PhD scholars/foreign students and 804 normal single seater rooms – 359 single seater rooms have already been occupied. The kitchen, dining hall, food court and another 373 rooms are expected to be ready by the beginning of the coming academic session.

In order to meet the growing demand of student's accommodation, construction of one more boys' hostel with 1152 capacity (Hostel-11) has been initiated. The construction work has been allotted at a total value of ₹ 9665.00 lakhs in March 2015. Out of 1152 single seater rooms, 580 rooms are expected to be ready for occupation by March 2017. The entire hostel will be completed by September 2017.

172 double seater rooms of the second girls' hostel, Dhansiri – with a capacity of 172 double seater and 176 single seater rooms – were completed in the last financial year and occupied. The remaining 176 single seater rooms are expected to be completed before the new academic session.

The existing married scholars' hostel with 108 flatlets is being extended with addition of another 96 units. 50 units are expected to be ready for occupation by the end of 2015 and the remaining 46 units are expected to complete by March 2016.

### **Extension of Academic Complex**

The Phase IV extension work of Academic Complex is almost completed except for some work in the Mechanical Engineering department. The same will be completed before the new academic session. The construction work of the Class Room Complex as well as the Research Building Complex is also progressing well.

Further expansion work of the academic complex under Phase-V has also been initiated. The work has already been awarded at a value of ₹ 6994.74 lakhs in March 2015. Under this phase, expansion work of the departments of Chemical Engineering, Computer Science and Engineering, Design, Humanities and

Social Sciences, Mathematics, Physics and Central Instruments Facility are taken up for construction having a total area of 13,745 sqm. The work also includes a new building for the centre for Nanotechnology and clean room of approx 5800 sqm area. The work is expected to be completed by March 2017.

### **Residential Quarters**

The construction of 30 units of E-type residential quarters in 5 blocks (Ph-IV) has been completed with the remaining 3 blocks (18 units) handed over in September 2014. The Institute has taken up construction of G+9 storied F-type residential buildings for which site selection and engagement of architect have already been finalised. These 4 clusters of building will have 4 units in each floor and altogether 144 units.

### **New Guest House**

The work of the new Guest House is under progress. In the first phase, 42 general rooms are expected to be handed over by November 2015 and remaining 112 rooms and 8 VIP suits in the next year.

Apart from the above, a new community hall for social get-together and different cultural activities has recently been completed and is being used. Two new dormitory buildings for hostel catering/canteen staff and security personnel respectively are under construction. The construction of boundary wall (Phase-IV) is progressing well. At the same time augmentation of electrical infrastructure is going on.

### **INSTITUTE EXPENDITURE**

The details of expenditure during the year 2014-2015 are as follows (in crores ₹):

Recurring:	133.03
Non-recurring:	164.76
Sponsored Research:	46.35
<b>Total Expenditure:</b>	<b>344.14</b>

In comparison, in 2013-2014, ₹ 336.17 crores were spent.

### **STUDENTS' ACTIVITIES**

Alcheringa, the annual cultural festival of IIT Guwahati, was held during 29 January – 1 February this year. Alcheringa is now regarded as a much anticipated students' cultural event of the North-East where thousands of students across the country take part in various youth oriented competitions, workshops, seminars and informal events. The performances of musicians and performing artistes of repute are the real crowd puller. In the past Alcheringa featured exhilarating performances from some of the biggest names in the entertainment industry, namely Sonu Nigam, Shaan, Strings, KK, Euphoria, Parikrama, the Raghu Dixit Project, Shankar Ehsaan Loy, Mohit Chauhan, Javed Ali, Anoushka Shankar, the Swiss folk metal band Eluveitie, Orphaned



Land – Israeli progressive metal band, etc. This year the well known playback singer Lucky Ali, performed before a huge gathering.

Techniche-2014 – the annual techno-management festival of the Institute – was held during 4–7 September 2014. Techniche has been an extra-ordinary platform to showcase the latest inventions, exhibitions and technological advances from all over the globe. A plethora of events and competitions are organized to make the participants step outside their comfort zones and challenge conventional thinking. The 2014 edition of this festival saw the congregation of eminent personalities like Dr. Kota Harinarayana, Father of India's Light Combat Aircraft (LCA) Tejas Programme; Dr. Tessa Thomas, Project Director for Agni-IV missile in Defence Research and Development Organisation; Dr. Bikash Sinha, Padma Bhushan, Indian physicist, active in the fields of nuclear physics and high energy physics; Dr. Peter Atkins, FRSC, English chemist and former Professor of Chemistry at the University of Oxford and a prolific writer of popular chemistry books; and Mr. Christer Fuglesang, Swedish astronaut.

Other regular student events like Manthan, Spirit, Spardha were successfully organised by the students during the year. Moreover, there have been regular events and competitions organised by the various clubs and societies of the Institute.

## **STUDENTS' ACHIEVEMENTS**

Mr. Manishekhar Kumar, research student, Biosciences and Bioengineering, was selected for the prestigious Fulbright Nehru Doctoral Research Fellowship 2014. Manishekhar will be visiting USA for nine months (starting July 2015) to pursue research work at Biomedical Engineering Department, Tufts University.

Mr. Diptesh Majumdar, MTech student, Computer Science and Engineering, won the DAAD scholarship under the IIT Masters-Sandwich programme for visiting the Institute for Real-Time Computer Systems at the University of Munich from September 2014 to March 2015.

Mr. S. Arun, research student, Mechanical Engineering, received Gandhian Young Technological Innovation Award (appreciation under MLM – More from Less for Many) at the Festival of Innovation at Rashtrapati Bhawan, New Delhi in March 2015 for his project on 'Injection Mouldable Polymeric Composite Based Passive Polycentric Knee joint'. He also won the Best Innovation Award-2015 by the GHR Labs and Research Centre, Nagpur for the same project.

Mr. Sandip Chakraborty, research student, Computer Science and Engineering, received Indian National Academy of Engineering (INAE) Innovative Student Projects Award 2014 (Doctoral Level) for his PhD thesis work on 'Capacity Enhancement, QoS and Rate Adaptation in IEEE 802.11s: A Performance Improvement Perspective'.

Ms. Shweta Gupta, MDes student, Design, won the first prize in the competition for designing the logo for the Unnat Bharat Abhiyan, an initiative of Govt. of India. The logo is already in use.

Ms. R. Dutta and Ms. Vartika Srivastava, research students, Biosciences and Bioengineering, won the best paper award at Asian Plant Science Conference 2014, Nepal.

Ms. Bhawna Agarwal and Ms. Richa Tripathi, BDes students, Design, won the first prize for designing the mobile application NINDIYA at Unexplored 2014 organised by YUJ Design, Pune.

Mr. Seim Timung, research student, Chemical Engineering, received the best paper award at the International Conference on MEMS and Sensors 2014 held at IIT Madras.

Mr. Ashutosh Gupta, research student, Biosciences and Bioengineering, received the best paper award at the 29<sup>th</sup> Carbohydrate Conference, Centre of Innovative and Applied Bioprocessing, Punjab, in December 2014.

Mr. Siddharth Nimkar, research student, Biosciences and Bioengineering, won the Best Poster Award in the international conference on Proteomics from Discovery to Function at IIT Bombay.

Mr. Ravi K. Biroju, research student, Centre for Nanotechnology, received the Certificate of Excellence (1st prize) for paper presentation at Reflux 2015 – the annual Chemical Engineering Symposium held at IIT Guwahati in March 2015.

Mr. Himujjal Jibon Sarma, MDes student, Design, won the prestigious Business Plan competition of Young Indian's Guwahati Chapter – Road to Ideas with his proposition on innovations in furniture design and manufacturing.

Mr. Shashi Shekhar Jha, research student and TCS fellow, Computer Science and Engineering, received international travel grant from the Department of Science and Technology, Govt. of India, to present his paper at the 1<sup>st</sup> International Conference on Internet of Things in Urban Space (Urb-IoT 2014) in Rome, Italy. His doctoral work was selected for presentation at the Doctoral Consortium of the 12<sup>th</sup> German Conference on Multiagent System Technologies, Stuttgart, Germany, in September 2014.

Mr. Suradip Das, research student, Biosciences and Bioengineering, was awarded DST International Travel Support for presenting his paper at the 16<sup>th</sup> International Spinal Research Trust Meeting at London, UK in September 2014.

Mr. Arghya Sett, research student, Biosciences and Bioengineering, was awarded DBT International Travel Support for presenting his poster at the 16<sup>th</sup>

European Molecular Biology Laboratory (EMBL) PhD symposium, Heidelberg, Germany in October 2014.

Mr. Ankit Dalal, research student, Electronics and Electrical Engineering, received DST grant to attend International Conference on Electrical Machines (ICEM), in Berlin, Germany in September 2014.

Ms. Shuchi Singh, research student, Centre for Energy, was selected for International Travel Fellowship grant by Department of Biotechnology (DBT), Govt. of India, to attend the international conference on Sustainable Energy and Environmental Sciences at Singapore in February 2015.

Mr. Narsimha Mamidi, research scholar, Chemistry, won the Second Prize of Lilly Outstanding Thesis Awards 2014.

Mr. Rajesh D., research student, Computer Science and Engineering, received the TCS PhD Research Fellowship.

## **TRAINING AND PLACEMENT**

The placement scenario at IIT Guwahati for the year 2014-2015 has been good so far. A total of 109 companies from various sectors have already participated in campus recruitment. Out of a total of 1087 students (BTech-512, BDes-31, MTech-299, MDes-25, MSc-102, MA-17, PhD-100) registered for placement, 73.66% BTech and BDes students have been placed. For BTech and BDes, number of job offers made is 400 for 543 students. The highest package offered to BTech student is 129,500 USD per annum with an average package of ₹ 12.80 lakhs per annum.

The percentage of placement till now for the MTech and MDes students is reasonably good and stands at 35.49%. The highest package offered to MTech student is 115,000 USD per annum with an average package of ₹10.74 lakhs per annum. For MSc and MA programmes, 3 students have been placed out of 119 registered candidates. 2 PhD students have also received job offers through the campus placement in various sectors.

Companies from different sectors have participated in the campus recruitment process. The percentage of participation from various sectors are 17% in Core Engineering, 44% in IT, 7% in R&D, 3.5% in Analytics, 5.5% in Consulting, 5.5% in Education, 4.5% in E-commerce and 13% in others (Finance, Telecommunication, Govt., Oil & Gas, Decision Science, Diversified Conglomerate, Health care, Management, Mining, NGO, etc.).

The branch-wise placement details are as follows.

Discipline	UG (BTech/BDes)			PG (MTech/MDes/MA/MSc)		
	No. of Student Reg.	No. of Student Placed	% of Student Placed	No. of Student Reg.	No. of Student Placed	% of Student Placed
CSE	73	64	88	36	25	69
ECE	76	63	83	44	14	32
EEE	42	29	69	–	–	–
ME	76	57	68	78	29	37
CE	62	32	52	74	27	36
CL	49	33	67	38	5	13
BT	38	21	55	29	00	00
MC	39	34	87	–	–	–
CST	30	20	67	–	–	–
EP	27	18	67	–	–	–
DD	31	29	94	25	15	60
PH (MSc)	–	–	–	29	00	00
CH (MSc)	–	–	–	37	00	00
MC (MSc)	–	–	–	36	2	3
DS (MA)	–	–	–	17	1	6

### CLOSING REMARKS

In ancient times Guwahati, known by the name Pragjyotishpur, was the leading political and cultural centre of the North East. It was a celebrated seat of learning in all spheres. It was acclaimed as a distinguished centre of rich cultural and religious activities with scholars coming from far and near. This land of Kamrupa also carried glorious chronicles of events and classical renaissance at different turns of history. Moreover it was the north bank of the city that sheltered most of its glory. In contemporary times this old trend is rejuvenated and the IIT campus in North Guwahati is alive once more with students learning specialised subjects. There is a resurgence of learning today with the inflow of students and teachers from all over the country. Today it can be proudly said

that IIT Guwahati has contributed in its own significant way to the development of the North East.

As young graduates about to step out into the teeming and multiple realities of contemporary India, I would urge you to think of your good fortune in stepping out of the portals of a premier educational institution such as an IIT. There is a lot of difference all of us can make and this may not even involve too much effort. By being good students you have already fulfilled an important task. You will now have to take the work forward and see how best you can further the task of educating yourself outside the classroom. If you can, at some point in your careers, contribute something towards the education of others in society as a whole you will perhaps have fulfilled yourselves in the best manner possible as students and educators.

On the occasion of the 17th convocation I congratulate all graduating students and their parents on this proud and momentous day in your lives as well as in the life of this Institute. I and all the faculty of IIT Guwahati wish you all the very best in your future careers. We urge you to remember that you will always have a very special place here as alumni and all your future endeavours will enrich the corporate life of this institute.

Jai Hind.

Gautam Biswas  
Director  
Indian Institute of Technology Guwahati