



## **Director's Report**

**Fourteenth Convocation  
Friday, 25 May 2012**

**Indian Institute of Technology Guwahati**

His Excellency Dr. A. P. J. Abdul Kalam, former President of the Republic of India; Dr. R. P. Singh, Chairman, Board of Governors; members of the Board of Governors; members of the Senate; invited guests; graduating students; faculty and staff members of the Institute; parents and guardians; ladies and gentlemen – it is my pleasure to welcome you all to the Fourteenth Convocation of IIT Guwahati.

I take this opportunity to thank Dr. A. P. J. Abdul Kalam for accepting our invitation to be the Chief Guest of this Convocation and for kindly agreeing to deliver the Convocation Address.

Today, BTech, BDes, MTech, MDes, MSc, MA and PhD degrees are going to be awarded to 858 students. 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 2011-2012.

## **THE BOARD OF GOVERNORS**

Prof. Asis Datta, Professor of Eminence, National Institute of Plant Genome Research, joined the Board as nominee of the IIT Council in November 2011. Shri H. K. Sharma, Commissioner and Secretary, Department of Higher Education (Technical), Govt. of Assam, joined the Board in November 2011 as a nominee of Govt. of Assam. Prof. M. Jawed, Department of Civil Engineering, IIT Guwahati joined the Board in January 2012 as a Senate's nominee. On behalf of the Board, I welcome them all to the Board and I thank the outgoing Board members, Prof. Vinod Kr. Singh, Director, IISER, Bhopal; Shri H. M. Cairae, Principal Secretary to the Govt. of Assam; and Prof. S. Dandapat, Professor, Department of Electronics and Electrical Engineering, IIT Guwahati, for their contributions during their tenure.

## **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 DD,
- 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 departments and in the Centres for Energy (EN), the Environment (EV), and Nanotechnology (NT),
- A Dual (MTech+PhD) programme in the Department of Computer Science and Engineering started in July 2011.

The total number of enrolled students in 2011-2012 is 3948. Of these, 48% are post-graduate students. The detailed break up is

**Preparatory Programme: 10**

**Four-year BTech and BDes: 2048**

4<sup>th</sup> Year (2008 Batch): 388 (BT-26, CE-43, CL-35, CS-58, CT-21, DD-22, EC-53, EE-28, EP-20, MC-26, ME-56)

3<sup>rd</sup> Year (2009 Batch): 467 (BT-32, CE-51, CL-47, CS-68, CT-30, DD-23, EC-60, EE-29, EP-27, MC-32, ME-68)

2<sup>nd</sup> Year (2010 Batch): 571 (BT-38, CE-58, CL-57, CS-80, CT-30, DD-41, EC-73, EE-44, EP-28, MC-42, ME-80)

1<sup>st</sup> Year (2011 Batch): 593 (BT-45, CE-73, CL-64, CS-73, CT-38, DD-39, EC-71, EE-40, EP-37, MC-41, ME-72)

From Earlier Batches: 29

**Two-year MSc: 229**

2<sup>nd</sup> Year (2010 Batch): 112 (CH-36, MC-37, PH-39)

1<sup>st</sup> Year (2011 Batch): 108 (CH-31, MC-38, PH-39)

From Earlier Batches: 9

**Two-year MA (Development Studies): 85**

2<sup>nd</sup> Year (2010 Batch): 39

1<sup>st</sup> Year (2011 Batch): 46

**Two-year MTech: 638**

2<sup>nd</sup> Year (2010 Batch): 274 (BT-28, CE-60, CL-33, CS-52, EE-43, ME-58)

1<sup>st</sup> Year (2011 Batch): 346 (BT-29, CE-82, CL-52, CS-54, EE-45, ME-84)

From Earlier Batches: 18

**Two-year MDes: 40**

2<sup>nd</sup> Year (2010 Batch): 20

1<sup>st</sup> Year (2011 Batch): 20

## **Dual Degree (MTech + PhD)**

1<sup>ST</sup> Year (2011 Batch): 03

### **PhD: 895**

(BT-104, CE-81, CH-134, CL-69, CS-46, DD-26, EE-117, EN-19, EV-19, HS-63, MA-39, ME-89, NT-10, PH-79)

Today, **858** students, who have successfully completed their programmes will receive their degrees in the following disciplines:

### **BTech/BDes**

BT: 23, CE: 41, CL: 29, CS: 49, CT: 19, DD: 20, EC: 48, EE: 25, EP: 19, MC: 29, ME: 60; **Total: 362**

### **MA**

DS: 42; **Total: 42**

### **MSc**

CH: 36, MC: 39, PH: 39; **Total: 114**

### **MTech/MDes**

BT: 26, CE: 60, CL: 28, CS: 42, DD: 20, EE: 43, ME: 50; **Total: 269**

### **PhD**

BT: 11, CE: 9, CH: 8, CL: 6, CS: 4, DD: 1, EE: 10, EN: 2, EV: 5, HS: 3, Math: 2, ME: 4, NT: 1, PH: 5; **Total: 71**

## **ACADEMIC INFRASTRUCTURE DEVELOPMENT**

IIT Guwahati is an active partner of the National Knowledge Network (NKN). At present, the Institute is connected by a 1Gbps link to NKN. Two classrooms have been equipped with video conferencing facilities. The Institute proposes to deliver and receive online lectures through NKN in the near future. Under the project NP-TEL Phase-II, video and web lectures have been developed in the Institute.

The Central Library is the central hub for academics and research. Besides having an excellent print collection of about 1.5 lakh books, back volumes and theses, it subscribes to electronic versions of almost all major journals in Science, Engineering and Humanities.

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

- Single Crystal X-Ray Diffractometer – ₹ 1.60 crore
- Rotating Anode X-Ray Diffractometer – ₹ 1.47 crore
- Inert Atmosphere Glove Box – ₹ 1.46 crore
- Thermal Evaporation System – ₹ 77 lakh
- Wafer Testing Probe Station – ₹ 76 lakh

- X-Ray Diffractometer – ₹ 67 lakh
- Imaging Ellipsometer – ₹ 66 lakh
- Solar Simulator and IQE Measurement System – ₹ 57 lakh
- Automatic Semiconductor Characterisation System – ₹ 47 lakh

## 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 710 last year to 895. The current faculty to PhD students' ratio stands at a satisfactory 3. We hope the number of PhDs graduating will see a big increase in the next few years.

The other component of our research programme is sponsored (or directed) research. There are 220 research personnel engaged in various research projects at the Institute.

We offer a 'Start-up Research Grant' to newly-joined faculty members of the Institute to start their research activities. During this year, 27 projects worth ₹ 1.31 crores have been sanctioned under this scheme.

During this year over 350 research and development projects have been in progress, having a total sanctioned value of ₹ 150 crores. In the year 2011-2012, IIT Guwahati received new projects of about ₹ 28 crores. This is in comparison to ₹ 37 crores last year, while the total funds received were ₹ 27 crores as compared to ₹ 38 crores. The R&D projects were mainly sponsored by Government Ministries and Departments with major support coming from Ministries of Environment (MoE), Human Resource Development (MHRD), Departments of Science and Technology (DST), Biotechnology (DBT), Atomic Energy (DAE), Information Technology (DIT), Council of Scientific and Industrial Research (CSIR) and Defence Research Labs (DRL). The following table provides a comparison of this year's R&D project profile with that of last year. It shows that in monetary terms, the performance this year has been lower than last year. One of the reasons is that a few large projects were received last year. However the fact that the number of new projects and consultancies have both reduced, is a matter of concern.

Particulars	2010-2011	2011-2012
New sponsored projects received	88	67
New consultancies received	203	120
Total sanctioned value of the new sponsored projects (in crores of ₹)	37.00	28.35
Total sanctioned value of the new consultancy projects and others (in crores of ₹)	3.18	2.20
Total amount received for all projects (new and ongoing) (in crores of ₹)	37.92	27.18
Total amount received for all consultancy projects and others (new and ongoing) (in crores of ₹)	3.77	2.62

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

<b>Project Title</b>	<b>Funding Agency</b>	<b>Dept. / Centre</b>	<b>Amount Sanctioned (₹ in lakhs)</b>
Molecular and functional characterisation of dextran production in weissela spp.- superior dextran producers for cereal applications	DBT	BT	77.06
Studies on the cellular role of calcium signalling proteins in Nurespora Crassa	DBT	BT	72.88
Development of aptamer based molecular diagnostics for breast cancer	DBT	BT	154.85
Development of silk protein derived artificial nerve growth conduits for neural tissue engineering	Central Silk Board	BT	45.30
Chiral recognition and separation of amines and amino alcohols inside Ni (II) based metallocavity	DST	CH	50.78
Development of text to speech system in Indian Language (Phase-II)	DIT	EEE	108.14
Development of speech based multi-level person authentication system	DIT	EEE	162.47
Development of thermal energy storage system for solar thermal power plant	DST	ME	112.63
Development of walking apparatus: Concept validation, feasibility, prototyping and testing	DIT	ME	94.32
Design and implementation of a high speed wavefront sensor of light beams	DIT	PH	61.14
Studies on structure of enzymes and their interaction with nanostructure materials for bio electronics device and other applications	DBT	ENV	399.29
Novel nanoscale materials targeted towards antimicrobial and anticancer activities	DBT	NT	88.70

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.

A total of 120 consultancy projects (including the testing and recommendation jobs) were carried out in the year. The total value of the consultancy projects undertaken during this year is ₹ 2.20 crores, and ₹ 2.62 crores was received for all consultancies.

The IIT Guwahati Technology Incubation Centre (IITG-TIC) was established to facilitate co-operation and interaction between the Institute and entrepreneurs in various sectors of science and engineering and promote innovation. Four incubatees are currently present, working in IT and Electronics related projects. Three more are under consideration.

IIT Guwahati is coordinating on behalf of Department of Biotechnology, Govt. of India the 'Programme on strengthening of biotechnology teaching, training and research in universities and colleges in North East Region'. ₹ 12.00 crore was received so far out of the total sanctioned amount of ₹ 14.87 crore. The projects sanctioned under this programme to the Tripura University, Gauhati University, Dibrugarh University, Tezpur University, Assam University, NEHU, Darrang College and Koliabor College are running successfully.

Under the Rural Technology Action Group for North East (RuTAG-NE), a pilot project on Mechanised Weaving of Muga Silk Fabric, a joint initiative of RuTAG-NE and NEDFi, was commissioned by His Excellency, Shri Janaki Ballav Patnaik, Governor of Assam, at the Industrial Estate, Amingaon, Guwahati.

## **FACULTY AND STAFF**

The faculty strength at the end of March 2012 was 296. This is an increase of 27 from 269 at the end of last year.

The number of non-faculty staff increased by 13 from 323 in the previous year to 336 at the end of financial year 2011-12. The creation of 64 posts is pending with the Ministry of HRD.

## **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:

**Papers in Journals** : 577

**Papers in Conference Proceedings** : 583

This is a significant increase in research publications from the last year which stood at 457 papers in journals and 481 papers in conference proceedings.

## **CONFERENCES/WORKSHOPS/SCHOOLS/COURSES**

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

- Introductory workshop on Optical Microscopy, 16-17 June 2011.

- Summer school on Efficient Fossil Energy Technologies, 4-10 July 2011 (in collaboration with the University of Nottingham, UK).
- Cancer Biology 2011 – Basic Theoretical Aspects, 26-27 August 2011.
- Workshop on Graph and Geometric Algorithms, 21-23 October 2011.
- National Workshop on Use and Deployment of Web and Video Courses for Enriching Engineering Education, 4-5 November 2011.
- North East Regional Conference on Mathematics Education, 25-26 November 2011.
- 2<sup>nd</sup> International Conference on Advanced Nanomaterials and Nanotechnology (ICANN-2011), 8-10 December 2011.
- International Conference on Computational Methods in Manufacturing (ICMM 2011), 15-16 December 2011.
- SERC School and the Sixth National Symposium on Rheology of Complex Fluids (COMPFLU 2012), 3-7 January 2012.
- Workshop on Tone and Intonation: Theory, Typology and Computation with special reference to the languages of North-East India, 26-27 January 2012.
- International Symposium on Advances in Chemical Sciences, 30 January 2012.
- International Conference on Environmentally Sustainable Urban Ecosystems (ENSURE 2012), 24-26 February 2012.
- Conference on Photochemistry and Luminescence, 9-10 March 2012.

In order to upgrade the knowledge and skills of the teachers working in the different institutions in the country, AICTE provides supports for organising short term training programmes in the emerging areas of engineering technology, pharmacy, management, etc. Twelve such Quality Improvement Programme Short Term Courses were organised by the Departments and Centres of the Institute during the year under report.

## **FACULTY ACHIEVEMENTS**

A number of faculty received awards during their year. Some of the major awards were:

Dr. Rakhi Chaturvedi, Biotechnology, received Prof. Y. S. Murty Medal 2011 from Indian Botanical Society.

Prof. Arun Goyal, Biotechnology, elected fellow, National Academy of Agricultural Sciences, India.

Dr. Latha Rangan, Biotechnology, was selected for Professor Hira Lal Chakravarty Memorial Award of Indian Science Congress Association (ISCA) for the year 2011-2012.

Dr. Anil Verma, Chemical Engineering, received Amar Dye-Chem Award 2011 for excellence in basic research and development in Chemical Engineering by Indian Institute of Chemical Engineers (IChE).



Prof. Arun Chattopadhyay, Chemistry, has been invited to serve on the editorial advisory board of *Nanoscale*, a journal of the Royal Society of Chemistry, for a two-year term, starting from January 2012.

Dr. P. K. Iyer, Chemistry, has been nominated as Head of the Max Planck Partner Group from 2012 up to 5 years by the Max Planck Society, Germany.

Prof. A. T. Khan, Chemistry, was selected as Council member for Chemical Research Society of India (CRSI).

Dr. Arindam Dey, Civil Engineering, has been selected and appointed as editorial board member for the *Journal of Civil Engineering*, Scientific and Academic Publishing for three years.

Dr. D. Udaya Kumar, Design, awarded Designer of the Year 2012 by Indian Design Forum (IDF).

Dr. K. S. R. K. Murthy, Mechanical Engineering was awarded outstanding reviewer in 2012 by the editorial board of *Journal of Engineering Fracture Mechanics*, Elsevier Publications.

Our congratulations to all of them.

## **CONSTRUCTION AND CAMPUS DEVELOPMENT**

Corresponding to the increase in student intake the construction activities of the Institute is also rising many fold. There are now nine boys' hostels and one girls' hostel.

The construction work of the eighth boys' hostel with a capacity of 504 and the ninth boys' hostel with a capacity of 1000 is going on. And both will be completed by the end of this year. With this, the total capacity for boys would be 4200. The girls' hostel has a current capacity of 514 seats. Extension of another block with an additional 156 rooms has been sanctioned and work has started. On completion the total capacity of girls' hostel would be 670. Planning for another girl's hostel has already started.

The Academic Complex which houses all the departments and centres of the Institute had an initial floor area of about 74,000 m<sup>2</sup>. With the gradual increase in student strength, we are extending the Academic Complex in a phased manner. In Phase-I, 4460 m<sup>2</sup> area has been expanded and in Phase-2, 6000 m<sup>2</sup> area has been added. The third phase has been taken up with an addition of 8025 m<sup>2</sup>.

Construction activities of the residences for faculty and non-faculty members are going on. On completion of all these by December 2012, the number of quarters will be F-type: 79, E-type: 114, D-type: 168, C-type: 72, and B-type: 175, for a total of 608.

Work on the second Student's Activity Centre (SAC) building for conducting activities of welfare, cultural and technical boards of the students' Gymkhana is going on. It is

expected to be ready by March 2013. Two food courts are also being built, one of which is for students.

Expansion of the electrical infrastructure and of the air-conditioning capacity has also been undertaken. A number of Diesel Generating sets have been procured and a new AC plant is under implementation. This will double the institute's air conditioning capacity.

In order to enhance the security of the campus, a road along the boundary wall of the campus is being built. This will allow patrolling of the campus perimeter by the security staff. The work is expected to be completed shortly.

## **INSTITUTE EXPENDITURE**

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

Recurring :	78.81
Non-recurring :	117.53
Sponsored Research :	30.55
Total Expenditure :	226.89

## **STUDENTS' ACTIVITIES**

### **Alcheringa 2012**

Alcheringa, the annual cultural festival of IIT Guwahati, was held from 2-5 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 pullers. This year too well known artistes like Anoushka Shankar, Soulmate, Javed Ali in the fields of music, dance and drama performed before huge crowds.

### **Techniche 2011**

Techniche-2011 – the annual techno-management festival of the Institute – was held during 1–4 September 2011. The thirteenth edition of the Techniche had set the goal to understand the significance and celebrate innovation that has changed the course of mankind – be it the Internet or the Telephone or the Paperclip or the Wheel.

One of the main attractions of Techniche is the Lecture Series, where eminent scientists, business wizards, entrepreneurs, adventurers from around the world deliver lectures on their work, share their experiences and thus greatly inspire the students. This year too, people from diverse fields of knowledge participated in the event and shared their knowledge and experience with the student community. Among them were Mr. Stephen P. Morse, the chief architect of the Intel 8086 chip (the grand-daddy of today's Pentium processor); Ian Wright, host of the famous television travel show Globe Trekker; Dr.

Rajendra Kumar Pachauri, who has served as the chair of the Intergovernmental Panel on Climate Change (IPCC); and Mr. B. G. Verghese, veteran journalist and recipient of the Magsaysay Award.

Following are the other regular events organised by the students during the year:

- Manthan – the intra-IIT cultural festival
- Spirit – the inter-college invitation sports competition
- Spardha – the annual sports meet
- Zest – the annual athletics meet

Along with these, there have been regular events and competitions organised by the various clubs and societies under the Cultural Council like the Movie Club, the Fine Arts Club, the Literary Club, the Photography Club, etc.

### **STUDENTS' ACHIEVEMENTS**

Two teams of IIT Guwahati students came second and third in the Samsung “Splash India on TV” 2011 design contest. Additional seven teams from the Institute came in the best seventeen teams in the competition. Student teams from various other institutes across the country took part in the contest. IIT Guwahati was awarded the best institute/mentor prize.

Dr. Vigya Kesari, a former student of the Department of Biotechnology has been selected for Young Scientist Award of Indian Science Congress in Agriculture and Forestry Sciences for the year 2011-2012.

Dr. Jashmini Deka, Research Associate, Chemistry, received Materials Research Society of India (MRSI) Young Scientist Award 2011 in the Young Scientists' Colloquium-2011 held on 4 August 2011.

Mr. Sankar Chakma, an MTech student of Chemical Engineering, received Ambuja's Young Researcher's Awards 2011 for doing Post-Graduate Studies in India after GATE Examination by IChE.

Perumalla Janaki Ramulu, research scholar, Mechanical Engineering, received best student paper bronze award at the International Symposium on Process and Fabrication of Advanced Materials (PFAM) 2011 at Hong Kong.

Ms. Satchi Kumari, research student, Department of Physics has received Plasma Science Society of India (PSSI) Poster award in National Symposium on Plasma Science and Technology (Plasma 2011) organised by PSSI and BIT Patna during 20-23 December 2011.

### **TRAINING AND PLACEMENT**

The placement scenario at IIT Guwahati for the year 2011-2012 has been good so far. A total of 102 companies from various sectors have participated in the recruitment process.

Out of a total of 722 students [BTech (335), BDes (21), MTech (251), MDes (17), MSc (57), MA (13) and PhD (28)] registered for placement, 90% BTech and BDes have been placed so far. The highest package offered to the BTech students is 150,000 USD (₹ 75 lakhs) per annum with an average package of ₹ 9 lakhs per annum.

The percentage of placement till now for the MTech and MDes is reasonable and stands at 55%. The highest package offered to MTech students is ₹ 18 lakhs per annum with an average package of ₹ 7 lakhs per annum.

For MSc programmes, 4 students have been placed out of the 57 registered candidates. 15 PhD students have also received job offers through the Institute placement cell in various sectors.

Companies from various sectors have participated in the campus recruitment process. The percentages of participation from various sectors are 42% in Core Engineering, 43% in IT, 9% in Research and Education and 6% in others. Among the core sector companies, 26% are PSUs.

The branch-wise placement details are:

Discipline	UG (BTech/BDes)				PG (MTech/MDes/MA/MSc)			
	No. of Student Reg.	No. Student Placed	% of Student Placed	Avg. Salary (Rs. Lakh p.a.)	No. of Student Reg.	No. Student Placed	% of Student Placed	Avg. Salary (Rs. Lakh p.a.)
CSE	54	50	93	16.5	51	43	84	9.8
ECE	48	45	94	8.3	40	26	65	7.2
EEE	28	25	89	9.6	--	--	--	--
ME	55	50	91	7.4	52	31	60	5.8
CE	42	34	81	6.5	52	26	50	4.8
CL	28	24	86	7.6	32	5	16	4.0
BT	20	17	85	5.8	24	9	38	3.9
M&C	25	23	92	8.6	--	--	--	--
CST	20	19	95	6.0	--	--	--	--
EP	15	12	80	6.0	--	--	--	--
DD	21	20	95	7.2	17	8	47	6.7
PH (MSc)	--	--	--	--	11	-	-	-

Discipline	UG (BTech/BDes)				PG (MTech/MDes/MA/MSc)			
	No. of Student Reg.	No. Student Placed	% of Student Placed	Avg. Salary (Rs. Lakh p.a.)	No. of Student Reg.	No. Student Placed	% of Student Placed	Avg. Salary (Rs. Lakh p.a.)
CH (MSc)	--	--	--	--	30	-	-	-
M&C (MSc)	--	--	--	--	16	4	25	5.5
MA (HSS)	--	--	--	--	13	-	-	-

The Institute organised a four-day training programme for the Institute staff members on issues related to Right to Information Act 2005, noting and drafting, conduct rules, and disciplinary procedures in August 2011. The programme was conducted by Society for Economic Research and Training (SERT), New Delhi.

### CLOSING REMARKS

Recently there have been many reports in the media stating that the IITs are good undergraduate institutions but their research performance is poor. While this may have been true in the first 20 to 30 years since the IITs were established, it is no longer true. Unfortunately, we have not been able to convey to society the strides made by the IITs in research and development, especially in this century. Let me focus on IIT Guwahati alone. As I have mentioned, about 48% of the students are post-graduates. These numbers themselves tell that, while we are indeed proud of our undergraduate programmes, we place equal emphasis on our postgraduate programmes. Our priority for research is also high. With 300 faculty, we have 350 sponsored research projects going on. There have been 580 journal publications in the last year. There are 900 PhD students on campus. Again, the figures speak for themselves. Of course these numbers alone are not enough. We have to measure the outcome of the research, besides the publications that result. This is not easy to do, as many of the work have long term impact. But I must admit we have not done well in the number of patents or in the number of technology transfers. For the latter, industry must also be ready, and we hope that with the economy growing so steadily, India will move to a new level of development where indigenous technology will be aggressively sought by industry. We are putting a lot of emphasis on strengthening our PhD programme. The challenge here is to attract the best students that the country has to offer to our PhD programmes. Unfortunately, the number of our undergraduates opting for a career in research and teaching, has been declining over the years. In fact the decline seems to be directly related to the growth in the Indian economy! The challenge before us is to arrest this trend and to attract the best students from IITs, NITs and other leading institutes from all over the country into our PhD

programmes. Money is a factor and we can never compete with the emoluments that industry offers. But I think we can still attract these students if we have large, vigorous research projects in place. When faculty work individually, students get attracted in ones and twos. When faculty work together, students get attracted in tens and twenties. We have to see how the leading Institutes of the world are able to attract students. We have to work together to take this forward. Faculty must make the extra effort required to take up large collaborative projects. The Institute administration must streamline and simplify its processes and must strengthen its planning to help in the growth of such projects.

Graduating students! This is a special occasion for all of you. I hope you will carry happy memories of IIT Guwahati with you. I hope you will be there to help us later on in whatever way you can. I am confident all of you will do well and I wish you all the best.

Jai Hind.

Gautam Barua  
Director  
Indian Institute of Technology Guwahati