

Director's Report

Eighteenth Convocation
June 22, 2016



Indian Institute of Technology Guwahati

Prof. Jitendra Nath Goswami, renowned astrophysicist and planetary scientist, Principal Scientist of Chandrayaan-1 Mission and Chairman, Advisory Board of Chandrayaan-2 Mission, JC Bose National Fellow and former Director of Physical Research Laboratory, Ahmedabad; Dr. Rajiv I. Modi, 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 Eighteenth Convocation of IIT Guwahati.

I take this opportunity to thank Prof. Jitendra Nath Goswami 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 128 PhD students, 630 undergraduate students and 507 postgraduate students will receive their degrees today. I extend my heartiest congratulations to all of them.

I will now present a brief report on the activities and achievements of the Institute during the year 2015-2016.

THE BOARD OF GOVERNORS

Dr. Rajiv I. Modi, Chairman and Managing Director, Cadila Pharmaceuticals Limited has been nominated as the Chairman of Board of Governors of IIT Guwahati. He assumed his charges from 8 February 2016. I welcome Dr. Modi on behalf of the Institute.

Dr. R. P. Singh's tenure as the Chairman, Board of Governors, came to an end on 7 February 2016. I offer our heartfelt gratitude to Dr. Singh for his constant support and guidance to the Institute.

Mr. C. Lalhmachhuana, ITS, Secretary, Information and Telecommunication Technology Department, Government of Mizoram, joined the Board in June 2015

as a nominee from the North-Eastern Region. Prof. Chitralkha Mahanta, Professor, Department of Electronics and Electrical Engineering, IIT Guwahati joined the Board in January 2016 as a nominee of the Senate. Prof. Arun Chattopadhyay, Professor, Department of Chemistry, has completed his tenure as the nominee of the Senate in December 2015. On behalf of the Board, I welcome the new members to the Board and thank the outgoing members for their contributions.

ISHĀN VIKĀS

Started in 2014 with a focus on developing the education scenario of the North-Eastern part of the country, Ishān Vikās is getting the momentum it requires. IIT Guwahati has been initiating comprehensive plans, with support from the MHRD, to bring selected schoolchildren and engineering college students of the North-Eastern region in close contact with various IITs, IISERs, NITs and NIAS.

About 1000 schoolchildren and 250 engineering students studying in various institutions in the North East have participated in the programme till date. Almost all the IITs, IISERs and NIAS have acted as host institutes and the participants have greatly benefitted from their exposure to such premier institutions in engineering, technology and the pure sciences.

Global Initiative of Academic Networks (GIAN)

The Govt. of India approved a new programme titled Global Initiative of Academic Networks (GIAN) in Higher Education aimed at tapping the talent pool of scientists and entrepreneurs internationally, to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, to accelerate the pace of quality reform, and to elevate India's scientific and technological capacity to global excellence.

With support from GIAN, IIT Guwahati too has organised the following courses—

Course Name	International Expert	Indian Expert(s)	Duration
Optimisation Methods for Engineering Planning and Design	Prof. Fouad Bennis, Ecole Centrale de Nantes, France	Prof. R. K. Bhattacharjya, Civil Engineering	4-8 May 2016
Boiling Heat Transfer	Prof. Vijay Dhir, University of California, Los Angeles, USA	Prof. Gautam Biswas, Dr. Amaresh Dalal, Mechanical Engineering	23 May – 3 June 2016

Course Name	International Expert	Indian Expert(s)	Duration
Infrastructure Projects Planning and Modelling	Dr. Hemanta Doloi, University of Melbourne, Australia	Dr. L. Boeing Singh, Civil Engineering	27 June - 8 July 2016
Campaigns, Media and Influence	Prof. Holli A. Semetko, Emory University, Atlanta, USA	Dr. Pahi Saikia, Humanities and Social Sciences	16-20 May 2016
Green Material Forming and Joining	Prof. Jay S. Gunasekera, Ohio University, USA	Dr. R. Ganesh Narayanan, Mechanical Engineering	6-11 June 2016
Distributed Network Algorithms	Dr. Stefan Schmid, Deutsche Telekom Laboratories (T-Labs) and TU Berlin, Germany	Dr. P. S. Mandal, Mathematics	27 June - 2 July 2016
Optimisation methods to groundwater resources management	Prof. Konstantinos Katsifarakis, Aristotle University of Thessaloniki, Greece	Dr. M. K. Goyal, Civil Engineering	7-11 March 2016

More number of courses are going to be offered in the coming months.

New Centres

IIT Guwahati has newly created an academic centre for Rural Technology to promote multidisciplinary research and societal activities. The Centre has primary objective of teaching, research and to provide consultancy support to various needs of the Indian rural sector. Moreover an extramural centre namely Centre for Creativity was also established.

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); and
- Dual (MTech+PhD) programme in the Department of Computer Science and Engineering (CS).
- A Master of Science by Research [MS (R)] programme in Energy (EN), and a Dual [MS (Eng.) + PhD] programme in Electronics and Electrical Engineering (EE), was started in July 2015.

The total number of enrolled students in 2015-2016 is **5533**. Of these, 52.65% are postgraduate students. The detailed break up is –

Preparatory Programme: 5

Four-year BTech and BDes: 2615												
Batch	BT	CE	CL	CS	CT	DD	EC	EE	EP	MC	ME	Total
Fourth Year (2012 Batch)	46	70	59	88	40	41	78	45	35	51	88	641
Third Year (2013 Batch)	45	72	58	88	39	39	80	46	39	50	87	643
Second Year (2014 Batch)	39	69	62	88	36	44	79	46	37	50	79	629
First Year (2015 Batch)	49	78	66	81	42	46	73	42	42	43	77	639
From earlier batches												63
Total												2615

Two-year MSc: 265				
Batch	CH	MC	PH	Total
Second Year (2014 Batch)	47	41	46	134
First Year (2015 Batch)	45	42	43	130

From earlier batches	1
Total	265

Two-year MA: 49		
Batch	DS	Total
Second Year (2014 Batch)	22	22
First Year (2015 Batch)	27	27
Total		49

Two-year MTech: 764							
Batch	BT	CE	CL	CS	EE	ME	Total
Second Year (2014 Batch)	29	89	47	51	42	88	346
First Year (2015 Batch)	34	90	55	50	66	120	415
From earlier batches							3
Total							764

Two-year MDes: 53		
Batch	DD	Total
Second Year (2014 Batch)	26	26
First Year (2015 Batch)	27	27
Total		53

Two-year MS: 10		
Batch	EN	Total
First Year (2015 Batch)	10	10
Total		10

Dual Degree: 29			
Batch	(MTech + PhD) in CS	[MS (Eng.)+PhD] in EE	Total
Fourth Year (2012 Batch)	3	-	3
Third Year (2013 Batch)	3	-	3
Second Year (2014 Batch)	4	-	4

First Year (2015 Batch)	4	12	16
From earlier batches	3	-	3
Total			29

PhD: 1743													
BSBE	CE	CH	CL	CS	DD	EE	EN	EV	HS	MA	ME	NT	PH
193	178	225	159	90	70	199	49	33	101	76	206	34	130

The new academic session (2015-2016) commenced from July 2015. 1540 students were admitted in various programmes across all the Departments/Academic Centres in July 2015. This includes 5 students in the Preparatory Programme. Another set of 114 students were admitted in PhD programmes in various Departments/Academic Centres in January 2016. Thus a total of **1654** students were admitted in the academic year 2015-2016. The department/centre-wise details of new admissions, excluding the preparatory students, are given in the table below:

Department/Centre	BTech/ BDes	MSc/ MA	MTech/ MDes/MS(R)	PhD	Dual Degree
Biosciences and Bioengineering (BSBE)	49	-	34	43	-
Chemical Engineering (CL)	66	-	55	39	-
Chemistry (CH)	42	45	-	50	-
Civil Engineering (CE)	78	-	90	44	-
Computer Science and Engineering (CS)	81	-	50	28	4
Design (DD)	46	-	27	23	-
Electronics and Electrical Engineering (EE)	115*	-	66	31	12
Humanities and Social Sciences (HS)	-	27	-	13	-
Mathematics (MA)	43	42	-	21	-
Mechanical Engineering (ME)	77	-	120	42	-
Physics (PH)	42	43	-	22	-
Centre for Energy (EN)	-	-	10	14	-

Centre for the Environment (EV)	-	-	-	11	-
Centre for Nanotechnology (NT)	-	-	-	4	-
Total	639	157	452	385	16

* *BTech in Electronics and Communication Engineering: 73, and BTech in Electronics and Electrical Engineering: 42.*

Today, **1265** students, who have successfully completed their programmes will receive their degrees in the following disciplines:

Number of students obtaining degrees in June 2016: 1265

Four-year BTech and BDes											
TOTAL	BT	CE	CL	CS	CT	DD	EC	EE	EP	MC	ME
630	47	73	61	88	33	37	81	48	34	46	82

Two-year MA	
Total	DS
22	22

Two-year MSc			
Total	CH	MC	PH
129	47	38	44

Two-year MTech/MDes							
Total	BT	CE	CL	CS	DD	EE	ME
356	32	80	46	46	26	47	79

PhD			
Department/ Centre	No. of Students	Department/ Centre	No. of Students
BSBE	6	EN	2
CE	10	EV	2
CL	19	HS	4
CH	30	MA	5

CS	4	ME	21
DD	8	NT	2
EE	6	PH	9
Total: 128			

ACADEMIC INFRASTRUCTURE DEVELOPMENT

A number of new equipment 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 –

- High Performance Computing (HPC) Cluster ₹ 878 lakh
- Field Emission Gun Transmission Electron Microscope ₹ 669 lakh
- High End Optical Microscope ₹ 284 lakh
- Oxidation Diffusion Furnace ₹ 250 lakh
- Raman Spectroscopy ₹ 132 lakh
- Material Printing System ₹ 125 lakh
- DC Probe Station ₹ 102 lakh

Lakshminath Bezbaroa Central Library is a major service centre of the Institute which provides library and information services to support the teaching, learning, research activities. During the reported period, the total library circulation transactions have increased substantially and stand at around 1.63 lakhs. The Library remains open from 8.00 am to 12.00 midnight, throughout the year to provide reading facility to the Institute's community. The library has a collection of about 1.58 lakhs of printed books and bound volumes of journals, 1.47 lakhs of e-books, and 90 print and 24000 online journals along with a substantial number of other documents.

The Computer and Communication Centre has augmented its facilities to provide better service in connectivity. The Centre also acts as a nodal centre for various network related activities of the North-Eastern states. Projects of the National Knowledge Network and the ERNET are being actively pursued in the Centre. The Centre has also purchased a high performance computing system of around 250 TF with 300TB PFS storage with infiniband interconnect with a total cost of around 9 crore in association with CDAC, Pune, for setting up a state-of-the-art CDAC-IIT Guwahati supercomputing facility.

RESEARCH AND DEVELOPMENT

The number of PhD students on campus is increasing every year. This year has seen a big jump in number, 1531 students last year to 1743 this year. The current PhD students' to faculty ratio stands at a satisfactory 4.34.

The other component of our research programme is sponsored (or directed) research. There are 428 research projects in progress with a total sanctioned value of about ₹335 crore. In the year under report we received 116 new projects with a sanctioned value of ₹61 crore. The R&D projects are mainly sponsored by Government Ministries and Departments with major support coming from the 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. 280 personnel are engaged in various research projects at the Institute with 375 Principal Investigators involved.

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

Project Title	Department/ Centre	Funding Agency	Amount Sanctioned (₹ in lakhs)
Scheme for financial assistance for setting up of electronics and ICT academies	Centre for Educational Technology	DeitY	1750
E-Kalpa-2 creating digital environment for design in India	Centre for Educational Technology	MHRD	840
Unnat Shikshak – Unnat Bharat, centre for excellence in science and mathematics education	Centre for Educational Technology	MHRD	339
Fundamental molecular investigations in biotechnology	Biosciences and Bioengineering	DBT	248
Visvesvaraya PhD scheme for electronics and IT	Electronics and Electrical Engg.	Media Lab Asia	237
Development of abiotic stress resilient tropical pulses through tailoring of ABA receptor genes	Biosciences and Bioengineering	DBT	156

Development of comprehensive interactive well monitoring software tool for drilling supervisors	Centre for Energy	ONGC	151
Studies and application of redox enzymes for bioelectronics devices	Biosciences and Bioengineering	DBT	145
Investigation on evaluation pressure for unique redox metabolism of leishmania parasite	Biosciences and Bioengineering	BCIL	106
Terminal Oxo and Imido transition-metal complexes of group 11 (Cu,Ag,Au): Strategies for sequential C-H bond activation, functionalisation, Carbon-Heteroatom (C-N and C-O) bond- forming reactions and group-transfer catalysis	Chemistry	DST	83
Using field and modelling studies to investigate noise propagation in urban traffic corridor	Civil Engineering	MoES	56

BCIL – Biotech Consortium India Limited

DBT – Department of Biotechnology, Govt. of India

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

DST – Department of Science and Technology, Govt. of India

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

MoES – Ministry of Earth Sciences, Govt. of India

ONGC – Oil and Natural Gas Corporation Limited

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

A total of 135 new consultancy projects were carried out during the year. The

total value of consultancy projects undertaken during this year is ₹3.99 crores, and ₹6.43 crores was received for all consultancies.

IIT Guwahati Technology Incubation Centre (IITG-TIC) is facilitating ten incubating companies out of which three are new. These incubatees are currently working in IT, electronics, bio-engineering and innovative design related projects. One company has successfully graduated.

The Institute has so far applied for 69 patents out of which 6 have been granted. 13 patents were applied for in the reporting year.

FACULTY AND STAFF

The faculty strength at the end of March 2016 was 402. This is an increase of 30 from 372 at the end of last year.

The number of non-teaching staff at the end of the financial year 2015-2016 was 437 which is 21 higher than the previous year.

RESEARCH 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: 883

Papers in Conference Proceedings: 705

In the previous year 763 papers in journals and 487 papers in conference proceedings were published by the faculty of the Institute. The increase of over 25% in research publications is commendable.

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—

- Symposium cum Workshop on Advances in Computational Biology and Computer Aided Drug Design, June 2015
- Regional Celebration of Women in Computing, East and North-East, November 2015
- South Asian Workshop on Optics and Photonics 2015 under UNESCO IYL Celebration (SAWOP 2015), November 2015
- XXVII IUPAP Conference on Computational Physics (CCP2015), December 2015

- 4th International Conference on Advanced Nanomaterial and Nanotechnology (ICANN-2015), December 2015
- 5th IEEE Applied Electromagnetics Conference (AEMC-2015), December 2015
- Indian Chemical Engineering Congress 2015 (CHEMCON 2015), December 2015
- Workshop on Tone and Intonation-3, January 2016
- 22nd National Conference on Communications (NCC-2016), March 2016
- Research Conclave 2016 – An amalgamation of Academia, Industry and StartUps, March 2016
- 2nd National Workshop on NEMS/MEMS and Theranostics Devices (NWNTD-2016), March 2016
- 4th Annual Chemical Engineering Symposium (REFLUX 2016), March 2016

The Institute has also organised around 30 short term courses under the Technical Education Quality Improvement Programme (TEQIP), E-kalpa, Electronics and ICT Academy, projects funded by the Govt. of India. Moreover teacher training camps were also held for teachers of high and higher secondary schools under Rashtriya Madhyamik Shiksha Abhijan (RMSA). The aim of the training camps is to strengthen the quality of science (physics, mathematics and chemistry) teaching amongst in-service teachers of Assam.

MEMORANDA OF UNDERSTANDING AND INTERNATIONAL RELATIONS

The Institute signed twenty one new Memoranda of Understanding (MoUs) with various educational and research institutes across the world during the year under report. The MoUs are mainly on academic and research collaborations, and student exchange. Some of these institutes are KAIST, Korea Advanced Institute of Science and Technology, Korea; UCLA Henry Samueli School of Engineering and Applied Science, USA; University of Nevada Las Vegas (UNLV), USA; Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus (BSUIRMB), Belarus; Uppsala University, Sweden; Kyoto Institute of Technology, Japan; Queen's University Belfast, Northern Ireland, Ireland; University of Passau, Germany; University of Southampton, UK; Novosibirsk State University, Russia; University of South Pacific, SUVA, Fiji.

A substantial number of international students from top universities visit IIT Guwahati every year to pursue full time masters, doctoral and short-term courses as exchange students and interns. Students who have benefitted from their association with the Institute include those from institutes like TUM, Germany,

RWTH Aachen University, Germany, National University of Singapore, University of Nottingham, UK, University of Pardubice, Czech Republic and many universities of Portugal, Ethiopia, Israel, Syria, Myanmar and Bangladesh. As of today there are about 50 international students studying in the campus.

IIT Guwahati and the Chaliha Foundation signed a Memorandum of Understanding for the institution of awards/financial support scheme for the Institute students in January 2016. The trustees of the Chaliha Foundation handed over an endowment of ₹30 lakhs to the Institute for awards in memory of Late Jadav Prasad Chaliha. Late J. P. Chaliha was not only a bright student who studied at Presidency College and Scottish Church College, Kolkata but also an active nationalist who took part in the freedom movement. He subsequently became a highly successful entrepreneur and a renowned tea-planter. His later years were spent at his Korangani Tea Estate where he utilised his scientific mind to make numerous innovations in the processes of growing and manufacturing tea. The annual interest generated from the endowment will be used to create the following awards: (i) Jadav Prasad Chaliha Award for Academic Excellence to be awarded to toppers at the end the first year in MSc (Physics), MSc (Chemistry), MSc (Mathematics and Computing) and MA in Development Studies (ii) Jadav Prasad Chaliha Merit-cum-Means Award to be awarded to toppers at the end the first year amongst those students with yearly family income lower than ₹4.5 lakhs in the above four programmes (iii) Jadav Prasad Chaliha Award for the Differently Abled to be awarded to the student with the highest CPI at the end of the first year amongst all the students in the Differently Abled category in the BTech programme (iv) Jadav Prasad Chaliha Bursary to be awarded to a needy student with a satisfactory academic performance. Each of the above ten awards will be of ₹20,000 and will be given during the Independence Day celebrations at the Institute starting with this year. The institute highly appreciates this generous gesture from the Chaliha Foundation.

ALUMNI ACTIVITIES

The past one year has seen a steady increase in donations to the institute through its alumni and other well-wishers. Alumnus Mr. Ankit Nagori (BDes 2004 batch), a well-known name in the corporate world in India, donated ₹10 lakh to the Institute in January 2016. Many alumni have visited the campus during the year and interacted with the students and shared ideas. A couple of alumni meets and discussions were also held to strengthen ties with the alumni of the Institute.

FACULTY ACHIEVEMENTS

A number of faculty received awards and brought accolades for the Institute during the year. Some of them are:

- Prof. Arun Chattopadhyay, Department of Chemistry, was elected a fellow of the Indian Academy of Sciences (2016).
- Prof. T. Punniyamurthy, Department of Chemistry, was elected a fellow of the Indian Academy of Sciences (2016).
- Prof. Vikash Kumar Dubey, Department of Biosciences and Bioengineering, received Dr. P. N. Raju Oration Award by Indian Council for Medical Research, Government of India in January 2016.
- Dr. B. Anand, Department of Biosciences and Bioengineering, received the INSA medal for Young Scientists; associate, Indian Academy of Sciences, Bangalore, and the DBT-Innovative Young Biotechnologist Award.
- Dr. Kusum K. Singh, Department of Biosciences and Bioengineering, received Albert's Global Researcher Reunion Award, 2016.
- Dr. Biman B. Mandal, Department of Biosciences and Bioengineering, received the INSA-Medal for Young Scientists 2015 awarded by the Indian National Science Academy, India.
- Dr. P. Chandra, Department of Biosciences and Bioengineering, was selected for the award of the Ramanujan Fellowship from the Ministry of Science and Technology, Department of Science and Technology, Government of India.
- Dr. Nanda Kishore, Department of Chemical Engineering, received the Institution of Engineers (India) Young Engineers Award for the year 2015-2016 in Chemical Engineering.
- Dr. Vimal Katiyar, Department of Chemical Engineering, and his research group's work on Biobased Adhesive was awarded the Gandhian Young Technological Innovation (GYTI) Award in March 2016 at Rashtrapati Bhavan, New Delhi.
- Prof. B. K. Patel, Department of Chemistry, was given Coastal Chemical Research Society Award-2015 by Coastal Chemical Research Society.
- Prof. Parameswar K. Iyer, Department of Chemistry, received the International Association of Advanced Material Science and Technology (IAAM) Scientist Award 2016.
- Dr. Bhubaneswar Mandal, Department of Chemistry, won the Industrial Green Chemistry World Award (IGCW 2015) conferred by the Industrial Green Chemistry Foundation.

- Dr. M. Qureshi, Department of Chemistry, has been elected as a Fulbright-Nehru academic professional excellence fellow by USIEF, USA.
- Dr. Chandan Mukherjee, Department of Chemistry, has been elected as Young Associate, Indian Academy of Science, Bangalore.
- Prof. Arup Kumar Sarma, Department of Civil Engineering, was awarded the Bimla Prasad Chaliha Chair Professorship for Water Resources on December 2015.
- Dr. Manish Kumar Goyal, Department of Civil Engineering, has been awarded the PROVIA fellowship from the United Nations Environment Programme (UNEP).
- Dr. Bimlesh Kumar, Department of Civil Engineering, won the Prof. R. J. Garde Research Award 2015 of the Indian Society for Hydraulics (ISH) for outstanding research in the field of Hydraulics and Water Resources.
- Dr. Abhishek Kumar, Department of Civil Engineering, won the Young Engineer award 2015 from the Institution of Engineers (India).
- Ms. Charu Monga, Department of Design, won the Microsoft faculty research grant award 2015.
- Dr. Chandan Kumar, Department of Electronics and Electrical Engineering, was awarded the Alexander von Humboldt Research Fellowship. He also received the POSOCO Power Systems Award for doctoral work for the year 2016.
- Dr. R. S. Kshetrimayum, Department of Electronics and Electrical Engineering, won the Institution of Electronics and Telecommunication Engineers (IETE) — Manorama Rathore Memorial Award 2015.
- Dr. S. Kanagaraj, Department of Mechanical Engineering, has displayed prosthetic and orthotic products developed by his lab at various technical exhibitions across India. He also received the silver award for the best innovator at the 7th India Innovation Initiative — i3 National Fair 2015— organised by the DST, AICTE and CII. Dr. Kanagaraj's project entitled "Improving hip and spine stability of trans-femoral amputees by deep squat using the inexpensive polymer/composite based polycentric knee joint" was one of the top 7 finalists in Samsung Innovation Awards 2015.
- Prof. P. Muthukumar, Department of Mechanical Engineering, became the President of the Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), Guwahati sub-chapter, from March 2016. He was also elected fellow of the Institution of Engineers (India) in September 2015. Dr. Muthukumar also won the Er. M. P. Baya National Award 2015 for outstanding Mechanical Engineer from the Institution of Engineers (India), Udaipur.

- Dr. S. Thota, Department of Physics, has been awarded the German Academic Exchange Service (DAAD) – IIT Faculty Bilateral Exchange Fellowship Award 2015. He also received the Young Scientist Research Award (YSRA) from the Department of Atomic Energy, Govt. of India.
- Dr. Shakuntala Mahanta, Associate Professor, Department of Humanities and Social Sciences, was awarded Fulbright-Nehru academic and professional excellence fellowship 2015-2016 to visit University of Massachusetts, Amherst.

Our congratulations to all of them.

VISIT OF HONORABLE PRIME MINISTER OF INDIA

Honorable Prime Minister of India, Mr. Narendra Modi visited IIT Guwahati on January 19, 2016 and addressed the gathering of students, faculty members and campus residents. During this visit, he inaugurated Electronics & ICT Academy of IIT Guwahati as a part of Digital India initiative. Hon'ble Prime Minister also inaugurated the new campus of IIT Guwahati during his visit.

CONSTRUCTION AND CAMPUS DEVELOPMENT

In conformity with the continuous growth of the students, the existing infrastructure of the Institute has been strengthened with new construction and extensions.

Students' Hostels

In the tenth boys' hostel, Lohit – with a capacity of 200 rooms with attached toilet for PhD scholars/foreign students and 804 normal single seater rooms – 684 normal rooms and 24 rooms with attached toilets are occupied, whereas another 150 rooms will be ready before the commencement of the new academic session.

Construction work of boys' hostel number eleven is progressing as scheduled. At present 50% of the foundation work has been completed. RCC framing work for the 1st floor slab has started in one block. Out of the slated 1152 single seater rooms, 580 rooms are expected to be made ready for occupation by March 2017. The entire hostel should be ready for residency by September 2017.

The second girls' hostel, Dhansiri – with a capacity of 172 double seater, 176 single seater rooms– was completed and has been handed over in July 2015 for occupation.

The extension work of the married scholars' hostel is progressing well. Out of the 96 units 32 units have been completed and occupied. The remaining 64 units are expected to be ready for occupation by October 2016.

Class Room Complex and Research Building Complex

The construction work of the Class Room Complex as well as the Research Building Complex are progressing as per plan. They are expected to be completed by December 2016.

Expansion of Academic Complex (Phase-V)

Expansion of the Academic Complex under Phase-V consists of expansion works in the Departments of Chemical Engineering, Computer Science and Engineering, Design, Humanities and Social Sciences, Mathematics, Physics, and a new building for the Centre for Nanotechnology and a Clean Room. The work was awarded for a value of ₹6994.74 lakhs in March 2015. Most of the structural works in all Departments are nearing completion. The piling and foundation works in the Centre for Nanotechnology and Clean Room are also nearing completion. The work is expected to be completed by March 2017 as scheduled.

Residential Quarters

The Institute has approved an estimate for the construction of 160 units of F-Type residential quarters in 4 towers having G+9 storied residential buildings. An architect has already been engaged for providing comprehensive consultancy services. Site development work by filling of soil is in progress. On completion of the site development work, initial test pile shall be done to finalise the design of the foundation after which the construction process will be started.

Proposal for construction of 80 units of D type, 40 units of C type and 50 units of B type residential quarters has also been taken up. Architects to provide comprehensive consultancy services for these buildings have already been engaged and the plan and layout are under review. Construction is expected to start by the end of 2016.

As the construction works of the residential quarters stated above will take some time to complete, the Institute has taken up construction of 12 units of residential quarters in prefabricated structure to meet the immediate demand for accommodation of faculty and staff. Since such buildings require less construction time, the Institute has taken up this proposal in view of the serious problems faced to accommodate the newly joined faculty and staff.

New Guest House

The work of the new Guest House is under progress and around 70% works have been completed. Out of 157 general rooms, 32 rooms are being used from November 2015. The remaining rooms are expected to be completed in 2016.

INSTITUTE EXPENDITURE

The details of expenditure during the year 2015-2016 are as follows (in crores of ₹):

Recurring:	164.45
Non-recurring:	215.23
Sponsored Research:	63.82
Total Expenditure:	443.5

In comparison, in 2014-2015, ₹344.14 crores were spent.

STUDENTS' ACTIVITIES

Alcheringa, the annual cultural festival of IIT Guwahati, was held during 28-31 January this year. Alcheringa is now regarded as a much anticipated students' cultural event in 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 has featured some exhilarating performances from some of the biggest names in the entertainment industry, namely Sonu Niigaam, Shaan, KK, Parikrama, the Raghu Dixit Project, Shankar Ehsaan Loy, Mohit Chauhan, Javed Ali, Anoushka Shankar, Lucky Ali, etc.

Techniche-2015 – the annual techno-management festival of the Institute – was held during 1–4 September 2015. Techniche has been an extra-ordinary platform to showcase the latest inventions, exhibitions and technological advances from all over the globe and organises a plethora of events and competitions all designed to make the participants step outside their comfort zones and challenge the institution of conventional thinking. The 2015 edition of this festival saw the congregation of eminent personalities like Daniel Domscheit-Berg, German technology activist; Claude Nicollier, astronaut; Rajdeep Sardesai, journalist and author, etc.

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. The Department of Humanities and Social Sciences also hosted the Young Poet Laureate for London Ms. Aisling Fahey on 26 September 2015 for a performance poetry session after a workshop with student-poets from the Institute literary society.

STUDENTS' ACHIEVEMENTS

- Ms. Bhaswati Deka and Mr. Abhishek Goyal, BTech students, have been chosen as the Aditya Birla Scholars for the year 2015.
- The Sahitya Akademi Award, 2015 (in Assamese Literature) has been awarded to Mr. Kula Saikia, PhD scholar of the Department of Humanities and Social Sciences, for his short-story collection *Akashar Chhabi Aru Anyanya Galpa*.
- Mr. Satyapriya Bhandari, a PhD student, Department of Chemistry, was awarded the Materials Research Society of India young scientist oral award 2015.
- Dr. Saroj Kumar Rout, a former PhD student, Department of Chemistry, received Eli Lilly Outstanding Thesis Award 2014.
- Mr. Biswajit Pathak, a PhD student, Department of Physics, won officer travel grant award from SPIE to attend the SPIE Photonics West conference in USA in February 2016.
- Mr. Devendra Kumar Maravi and Mr. Chitta Ranjan Barik, PhD students, Centre for Energy, were selected for the UGSAS-GU six month Sandwich Programme 2015, at the United Graduate School of Agricultural Science, Gifu University (UGSAS-GU), Japan, for the period October 2015 to March 2016.
- Ms. Visva Bharati Barua, a PhD student, Centre for the Environment, received the ISWA-SWIS Winter School full scholarship 2016 to attend Winter School at University of Texas, Arlington, Texas, USA on Landfill Design and Operations, in January 2016.
- Mr. Mitradip Bhattacharjee, a PhD student, Centre for Nanotechnology, and Ms. Neelima Tripathi, a PhD student, Department of Chemical Engineering, received the Gandhian Young Technology Innovation Awards (GYTI) 2016.
- Ms. Namami Goswami, a PhD student, Centre for Nanotechnology, was awarded the Google Anita Borg Memorial Scholarship (Asia-Pacific), 2015-2016. She also attended the Scholars' Retreat in September 2015 at the Google Shanghai Office.
- Mr. Anirban Chowdhury, PhD student, Department of Design, received Springer Young Researcher Award (Doctoral) from Indian Society of Ergonomics (ISE) at HWW2015.
- Mr. Piyooosh P. and Mr. Tushar Semwal, PhD students, Department of Computer Science and Engineering, received TCS PhD fellowship in January 2016.
- Mr. Biswajit Bhowmick, PhD student, Department of Computer Science and Engineering, received young scientist award at IEEE TENCON 2015.
- Mr. Harsha Vardhan, Mr. Shubhankar Jha and Mr. Vishal Kashyap, BTech

students, Department of Civil Engineering, were awarded Future HKUST PhD fellow for a study trip to Hong Kong.

- Mr. K. Dhamodharan, PhD student, Department of Civil Engineering, won best student oral presentation at the International Seminar on Renewable Energy and Sustainable Development, Thimphu, Bhutan, June 2015.
- Ms. Boga Madhulatha, PhD student, Department of Civil Engineering, won best paper award at the North-East Students' Geo-Congress (NESGC 2016), Agartala, in January 2016.
- Mr. Shiv Shankar Kumar, PhD student, Department of Civil Engineering, won best paper award at the Indian Geotechnical Conference (IGC2015), Pune.
- Mr. Deepak Joshi, a PhD student, Department of Electronics and Electrical Engineering, received student best oral paper award at Radioelectronika 2015, Pardubice, April 2015.
- Mr. Ravi Nishant and Ms. Shubhangi Gupta, BTech students, have made to the top three teams at the International Green Champ competition in 2016, an annual event held by Schneider Electric of USA.
- IIT Guwahati was given a special award by YUVA-Unstoppable at a solemn function in IIM Ahmedabad on September 12, 2015. The award is attributed to the contributions made by consistent efforts of NSS volunteers to alleviate illiteracy in the nearby villages. The contribution of IIT Guwahati in conducting health care and skill development related activities in the nearby villages were also mentioned.
- Mr. Atul Kumar, PhD student, Department of Biosciences and Bioengineering, was selected for EMBO travel award to attend the EMBO | EMBL Symposium: Tumour Microenvironment and Signalling at Heidelberg, Germany in April 2016.
- Ms. Prarthana Saikia, PhD student, Department of Humanities and Social Sciences, has been awarded Sahitya Akademi Yuva Puraskar–2016 in Assamese for her novel *Jatadhari*.

Our heartiest congratulations to all of them.

PERFORMING ARTS

One of the most innovative concepts of the institution has been the bridging of science and arts through the discourses of performance narratives. IIT Guwahati has introduced "Performing Arts" as part of curriculum. In every semester IIT Guwahati is running zero-credit courses (Senate approved) in the following disciplines of "Performing Arts": Indian Classical Dance (with a special focus on Sattriya Dance), Instrumental Music (Violin) and Hindustani Vocal Music. At the

moment, IIT Guwahati has four Artists in Residence.

- One of the Artists, Dr. Anwesa Mahanta has won the prestigious Ustad Bismillah Khan Yuva Puraskar from the Central Sangeet Natak Akademi, the National Academy for Music, Dance and Theatre, New Delhi.

Our heartiest congratulations to her.

TRAINING AND PLACEMENT

The placement scenario at IIT Guwahati for the year 2015-2016 has been very impressive so far. A total of 140 companies from various sectors have already participated in campus recruitment. The total no. of registered students for campus placement in the year 2015-2016 is 922. The overall placement of BTech and BDes students is 76.83%. For BTech and BDes, the total number of jobs offered is 431 for 561 students. An average package offered for BTech and BDes students is ₹15 lakhs per annum (treated as CTC).

The placement for MTech and MDes students is reasonable and stands at 42.45%. An average package offered for MTech and MDes students is ₹12 lakhs per annum (treated as CTC). For MSc programmes, 9 students have been placed out of 26 registered candidates. For PhD programmes, 5 PhD students have received job offers out of 42 registered candidates in the education and research sector.

CLOSING REMARKS

As the captain of a high-achieving and energetic team, I share its vision of excellence and holistic growth. It is a vision that is inclusive rather than exclusive, organic and deep-rooted rather than superficially target-oriented. As we bid adieu to yet another pool of bright and brilliant young minds who have been nurtured by this institute and who will now step into the real world, we reflect on our annual report in order to congratulate ourselves on our laurels as well as to discover new ways in which we can continue to instruct, innovate and inspire. We seek to do that not as a functioning machine with inputs and intellect but as a healthy organism with feelings and emotions that uphold the values of our great country.

Jai Hind

Gautam Biswas, FNA
JC Bose National Fellow and Director
Indian Institute of Technology Guwahati

