Campus diary

July - August 2016 http://www.iitb.ac.in/en/activities/campus-diary

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

54th Convocation Held At IIT Bombay

* 2515 students were awarded their degrees including 325 PhDs
* 'Lifetime Achievement Award 2015-16' conferred on Prof. R. K. Malik

(L-R) Mr. Dilip Shanghvi, Chairman, BOG, IIT Bombay, Dr. Rajendra Singh, Chairman, Tarun Bharat Sangh and winner of Stockholm Water Prize 2015, Prof. Devang Khakhar, Director, IIT Bombay on the dais and the Senate Members (behind) the dais.

The 54th Convocation of the Indian Institute of Technology Bombay (IIT Bombay) was held on August 13, 2016 at the campus with a lot of fan and fervor. 2515 students were awarded the degrees on successful completion of their academic programmes. The convocation marks a new beginning in the lives of these 2515 graduating students who will now also be the flag bearers of the Institute in the outside world.

Dr. Rajendra Singh, Chairman, Tarun Bharat Sangh and winner of Stockholm Water Prize 2015, was the Chief Guest for the occasion. He delivered the Convocation Address.

The graduating students this year include 208 PhDs, 9 Dual Degree (M.Tech. + PhD), 7 Dual Degree (M.Sc. + Ph.D.) and 101 PhD degrees awarded during interim convocation held in March, which is the highest number of doctoral students being awarded their degrees at a Convocation ever in the history of IIT Bombay. Out of these, 29 research scholars were selected for the '**Award of Excellence in PhD Thesis**' for the year 2016. In addition, 16 joint PhD degrees, in association with Monash University, were also conferred by the Deputy Chancellor of Monash University Dr. Christine Nixon.

Besides these, **6** M.Sc (by Research), **14** Dual Degree (M.Sc.+M.Tech.), **6** Dual Degree (M.Sc.+M.Phil.), **626** M.Tech., **56** M.Des., **14** M.Phil., **115** M.Mgt., **201** two-year M.Sc., **22** five-year integrated M.Sc., **508** Dual Degree (B.Tech. + M.Tech.), **586** B.Tech Degrees, and **14** PGDIIT Degrees were awarded at the Convocation.

Presenting the Institute's Report for the year 2015-16, Prof. Devang V. Khakhar, Director of IIT Bombay informed that "*IIT Bombay continues to be a sought-after destination for UG and PG studies. Among **22** IITs in the country, **49** out of top 50 rankers and **67** of top 100 rankers in JEE **2016** have joined IIT Bombay and **10** of the top **10** All-India JEE rank holders have chosen to join IIT Bombay. Similar trends are observed for the candidates qualifying in other entrance examinations as well*," he said. Wishing the graduating students the best in life, Prof. Khakhar said, *"The education you have received at IIT Bombay is comparable to the best in the world and you are now ready to take greater challenges and overcome them. Continue to develop your knowledge and skills and always keep in mind how you can help society and the nation through your work. I wish you all the success in your future endeavors."*

This year, the '**President of India Medal**' was bestowed on **Vikranth Dwaracherla Reddy, a student from the Department of Electrical Engineering**. The '**Institute Gold Medal**' was awarded to **Sukanya Patil Vijaysing, a student from the Department of Electrical Engineering** and the '**Dr. Shankar Dayal Sharma Gold Medal**' was conferred on **Karan Gupta, a student from the Department of Civil Engineering.** Additionally, more students were presented with gold medals sponsored by donors.

The Convocation also witnessed the presentation of **'Lifetime Achievement Award 2015-16'** of IIT Bombay being bestowed on **Prof. R.K. Malik** from Department of Chemical Engineering, in recognition of his contributions to the Institute.

Dr. Christine Nixon, Deputy Chancellor, Monash University, Australia, members of Board of Governors and several other distinguished guests from India and abroad attended the Convocation function, besides the graduating students and their proud parents.

MEDALS AND PRIZES

President of India Medal (for the year 2015-16)
Dwaracherla Vikranth Reddy
Department of Electrical Engineering (B.Tech)

Institute Gold Medal (for the year 2014-15)
Patil Sukanya Vijaysing
Department of Electrical Engineering (Dual Degree)

Institute Silver Medal (for the year 2015-16)
Bachelor of Technology (B.Tech)
Department of Aerospace Engineering
Kunal Garg

Department of Chemical Engineering
Maliekkal Vineet Jeco

Department of Civil Engineering
Karan Gupta

Department of Computer Sc.& Engineering
Prateesh Goyal

Department of Electrical Engineering
Shubham Chandak

Department of Mechanical Engineering
Deepak Dilipkumar

Department of Metallurgical Engineering & Materials Science
Vinay Subramanian

Department of Engineering Physics
Varun Gandhi

Master Of Science (M.Sc.) Programme
Department: Earth Sciences
Sayandeep Roy (Applied Geology)
Amit Kumar (Applied Geophysics)

Department: Chemistry
Nidhi Jain
Mehak Priya

Department: Mathematics
Samprit Ghosh
Rishika Dasani

Department: Physics
Surajit Dutta

Department: Bioscience and Bioengineering
Dasvit Sadanand Shetty

Dual Degree (B.Tech. + M.Tech.)

Department: Aerospace Engineering
Shubhendra Vikram Singh Chauhan

Department: Chemical Engineering
Atharva Shailendra Kelkar

Department: Civil Engineering
Kameshwar Patel

Department: Electrical Engineering
Patil Sukanya Vijaysing

Department: Mechanical Engineering
Savla Nevil Bharat

Department: Met. Engg. and Mat. Sc.
Vishwas Goel

Department: Engineering Physics
Anshul Avasthi

Department: Energy Science & Engineering
Shah Nilay Mukund

Master of Technology (M.Tech.)

Department: Aerospace Engineering
Avinash Kumar Saurav

Department: Chemical Engineering
Akshay Subramaniam

Department: Civil Engineering
Joshi Rohan Laxmikant
Palaniappan S.

Department: Computer Science & Engineering
Prakhar Gupta

Department: Electrical Engineering
Akshay Adlakha

Department: Mechanical Engineering
Ishwar

Department: Metallurgical Engineering and Materials Science
Veerangana

Department: Biosciences and Bioengineering
Amrit Bagchi

Department: Centre for Environmental Science & Engineering
Neha Sharma

Department: Earth Sciences
Sanchari Thakur
(Geoinformatics and Natural Resources)

Gaurav Siddharth Gairola
(Earth Sciences)

Department: Energy Systems and Engineering
Muddineni Kapil

Department: Systems & Control Engineering
Gunmeet Singh Mallan
Ramprasad V. (Technology & Development)

IE & OR
Shinde Nimita Rajendra

Master of Design

Department: Industrial Design Centre
Shreelekha Lakshmipathy

Master of Philosophy

Department: Humanities and Social Sciences
Mohina Saxena (Planning & Development)

Master of Management
Department: SJM School of Management
Sumeet Bhansali

OTHER MEDALS

Miss Jayati Deshmukh Memorial Gold Medal
Prateesh Goyal, Computer. Sc. & Engg.

Dr. Shankar Dayal Sharma Gold Medal
Karan Gupta, Civil Engg. (B.Tech)

Vidyasagar Nehra Gold Medal
Karan Gupta, Civil Engg. (B.Tech)

Prof Madhav Kulkarni Lt. Col.(R) Gold Medal
Karan Gupta, Civil Engg. (B.Tech)

Rajit Bhagwati Memorial Gold Medal
Neha Sharma, CESE

Hindi Vidya Bhavan Gold Medal
Sumeet Bhansali, M.Mgt

Sharad Maloo Memorial Gold Medal
Patil Sukanya Vijaysing, Electrical Engg.
(Dual Degree)

Prizes

Prof K C Mukherji Award
Shubham Chandak

Tulsiram Devidayal, P.M. Natu, Damle Trust Prize
Deepak Dilipkumar

Prof. R.P. Singh Memorial Prize
(B.Tech / 2 Yr. M.Sc.)
Surajit Dutta

Chandrashekhar Prize
Manasvita Vashisth

Shri R Vembu Iyer Memorial Prize
Sayandeep Roy

Dilip R Limaye Academic Excellence Award
Dwaracherla Vikranth Reddy

Prof. A.B. Biswas Memorial &
Shri Prakash Krishnan Award Prize (M.Sc.)
Arka Chakraborty

Dr. Gargi Vishnoi Memorial Prize
Reeba Susan Jacob

Prof. Hiralal Memorial Award
Arka Chakraborty
Vishnu Nair

Shri Ashok Chaturvedi Memorial Prize (M.Tech)
Ishwar

Prof. M.N.Gopalan Prize (M.Sc.)
Rishika Dasani

Prabhulal Bhatnagar Memorial Prize
Dond Asha Kiran

Mrs. Rama Mathur Memorial Prize
Samprit Ghosh

Ajit Shelat Award
Akshay Adlakha

Bhavesh Gandhi Memorial Prize
Patil Sukanya Vijaysing
Abhijit Das
Ishant Tiwari

Akshay Dhoke Memorial Award
Sarode Akshay Sanjay

Prof. K.C. Khilar PhD Award
Angan Sengupta
Dharmendra Mandaliya

Prof. K.C. Khilar Prize (M.Tech)
Suryanarayana Vegi

R.G. Manudhane M.Tech student Excellence Award Best M.Tech Thesis
Piyush Lakmani

R. G. Manudhane PhD Excellence Award
Richa Karmakar

Mr. Pranab Ranjan Sen Award
Divyansh Bordia

Indira Manudhane Student Excellence Award
Kazi Saif Rahaman

Shubhada Mulekar Joshi Award
Dasvit Sadanand Shetty

The following students were awarded the Academic Prizes for the year 2015-16

II year B.Tech / Dual Degree

Sr. No.	Name	Prize	Value of prize	Department
1	Sheshansh Agrawal	I	Rs.3000/-	Computer Sc. & Engg.
2	Akash Trehan	II	Rs.2000/-	Computer Sc. & Engg.
3	Gaikwad Amey	Additional	Rs.2000/-	Engineering Physics
4	Kulkarni Anish Kiran	Additional	Rs.2000/-	Engineering Physics
5	Bharat Khandelwal	Additional	Rs.2000/-	Computer Sc. & Engg.
6	Bhavya Choudhary	Additional	Rs.2000/-	Computer Sc. & Engg.
7	Divya Raghunathan	Additional	Rs.2000/-	Mems
8	Himanshu Gupta	Additional	Rs.2000/-	Computer Sc. & Engg.
9	Shah Devansh	Additional	Rs.2000/-	Electrical Engg.
10	Divyansh Pareek	Additional	Rs.2000/-	Computer Sc. & Engg.
11	Satvat Jagwani	Additional	Rs.2000/-	Computer Sc. & Engg.

III year B.Tech./Dual Degree/M.Sc.(Integrated) Branchwise

Sr. No.	Name	Prize	Value of prize	Department
1	Tejaswi K C	I	Rs.3000/-	Aerospace Engg.
2	Krishna Kumar Kedia S	II	Rs.2000/-	Aerospace Engg.
3	Pranay Agarwal	I	Rs.3000/-	Chemical Engineering
4	Jain Divyam Hitesh	II	Rs.2000/-	Chemical Engineering
5	Shubham Agrawal	I	Rs.3000/-	Civil Engineering
6	Raj Kumar Kedia	II	Rs.2000/-	Civil Engineering
7	Gumireddy Sushmitha Sree	II	Rs.2000/-	Civil Engineering
8	Anuj Mittal	I	Rs.3000/-	Computer Sc. & Engg.
9	Govind Lahoti	I	Rs.3000/-	Computer Sc. & Engg.
10	Parth Ashit Kothari	I	Rs.3000/-	Electrical Engineering
11	Kalpesh Krishna	II	Rs.2000/-	Electrical Engineering

12	Potluri Vachan Deep	I	Rs.3000/-	Mechanical Engineering
13	Karan Jain	II	Rs.2000/-	Mechanical Engineering
14	Gagrani Nisarg Bhushan	I	Rs.3000/-	Met.Engg.& Mat.Sci
15	Dangi Milind Sudarshan	II	Rs.2000/-	Met.Engg.& Mat.Sci
16	Kalantre Sandesh Sachin	I	Rs.3000/-	Engineering Physics
17	Reebhu Bhattacharyya	II	Rs.2000/-	Engineering Physics

III year B.Tech./Dual Degree/M.Sc.(Integrated) Branchwise
DUAL DEGREE

Sr. No.	Name	Prize	Value of prize	Department
1	Praveen Sriram	I	Rs.3000/-	Electrical Engineering
2	Ov Shashank	II	Rs.2000/-	Electrical Engineering
3	Ankush Mukherjee	I	Rs.3000/-	Mechanical Engineering
4	Chavan Shivani Dattatraya	I	Rs.3000/-	Met. Engg. & Mat.Sc
5	Mapuskar Pratik Sushant	II	Rs.2000/-	Met. Engg. & Mat.Sc
6	Rohan B Vora	I	Rs.3000/-	Energy Sc. & Engg
7	Himanshu Gupta	II	Rs.2000/-	Energy Sc. & Engg
8	Priyash Singh	I	Rs.3000/-	Engineering Physics

4 yr. B.S.(Chemistry)

Sr. No.	Name	Prize	Value of prize	Department
1	Ashu Agrawal	I	Rs.3000/-	Chemistry

IV year B.Tech./Dual Degree/M.Sc.(Integrated) Branchwise
B.Tech.

Sr. No.	Name	Prize	Value of prize	Department
1	Mrinalgouda Patil	I	Rs.3000/-	Aerospace Engg.
2	Pavan R Hebbar	II	Rs.2000/-	Aerospace Engg.
3	Nagapratik Reddy Mundla	I	Rs.3000/-	Chemical Engineering
4	Agashe Ashutosh Anant	II	Rs.2000/-	Chemical Engineering
5	Ashwin Agrawal	I	Rs.3000/-	Civil Engineering
6	Prajwal.K.A	II	Rs.2000/-	Civil Engineering
7	Sivaprasad S	I	Rs.3000/-	Comp.Sc. & Engg.
8	Anchit Gupta	II	Rs.2000/-	Comp.Sc. & Engg.
9	Sudipto Mitra	I	Rs.3000/-	Electrical Engineering
10	Shorya Consul	II	Rs.2000/-	Electrical Engineering
11	Phadke Unmesh	I	Rs.3000/-	Engineering Physics

III year B.Tech./Dual Degree/M.Sc.(Integrated) Branchwise

Sr. No.	Name	Prize	Value of prize	Department
12	Bhogale Shounak Girish	II	Rs.2000/-	Engineering Physics
13	Patankar Aniket Sanjay	I	Rs.3000/-	Mechanical Engg.
14	Sheel Nidhan	II	Rs.2000/-	Mechanical Engg.
15	Tushar Sanjay Karnik	I	Rs.3000/-	Met. Engg. & Mat. Sci
16	Saurabh Ranjan	II	Rs.2000/-	Met. Engg. & Mat. Sci

IV year B.Tech./Dual Degree/M.Sc.(Integrated) Branchwise
DUAL DEGREE

Sr. No.	Name	Prize	Value of prize	Department
1	Bhat Ashwin Rajendra	I	Rs.3000/-	Electrical Engineering
2	Himanshu Pandotra	I	Rs.3000/-	Electrical Engineering
3	Bohra Pakshal Narendra	II	Rs.2000/-	Electrical Engineering
4	Sanghvi Yash Chetan	I	Rs.3000/-	Mechanical Engg.
5	Mehta Nihar Nikhil	II	Rs.2000/-	Mechanical Engg.
6	Saumya Shivam	I	Rs.3000/-	Engineering Physics

7	Harshwardhan Alok Singh	I	Rs.3000/-	Energy Sc & Engg.
8	Manav Deepak Nandu	II	Rs.2000/-	Energy Sc & Engg.
9	Abhilash Chakraborty	I	Rs.3000/-	Met. Engg. & Mat. Sc.
10	Atish Kumar Awasthi	II	Rs.2000/-	Met. Engg. & Mat. Sc

5 yr. Int. M.Sc.

Sr. No.	Name	Prize	Value of prize	Department
1	Sahil Dhingra	I	Rs.3000/-	Chemistry

V year Dual Degree/M.Sc.(Integrated) Branchwise

DUAL DEGREE

Sr. No.	Name	Prize	Value of prize	Department
1	Vipul Goyal	I	Rs.3000/-	Aerospace Engg.
2	Chavare Shrikant Vitthal	I	Rs.3000/-	Chemical Engineering
3	Sabbavarapu Sivaji	I	Rs.3000/-	Civil Engineering
4	Ojas Apoorva Kanhere	I	Rs.3000/-	Electrical Engineering
5	Pasad Ankita Jitesh	II	Rs.2000/-	Electrical Engineering
6	Manepalli Akhil	I	Rs.3000/-	Energy Sc & Engg.

III year B.Tech./Dual Degree/M.Sc.(Integrated) Branchwise

Sr. No.	Name	Prize	Value of prize	Department
7	Chintakindi Shravan Kumar Reddy	II	Rs.2000/-	Energy Sc & Engg.
8	Ghogare Sumedh	I	Rs.3000/-	Mechanical Engg.
9	Jatin	II	Rs.2000/-	Mechanical Engg.
10	Hussain Motiwala	I	Rs.3000/-	Met. Engg. & Mat Sci.
11	Aniruddha Singh Lakhnot	II	Rs.2000/-	Met. Engg. & Mat Sci.
12	Sathe Pratik Sunil	I	Rs.3000/-	Engineering Physics

5 Yr. Int. M.Sc.

Sr. No.	Name	Prize	Value Of Prize	Department
1	Korak Kumar Ray	I	Rs.3000/-	Chemistry

2 Year M.Sc.(2 Year)

1	Nikita Chiripal	I	Rs.3000/-	Chemistry
2	Prakriti Kalra	II	Rs.2000/-	Chemistry
3	Mohd Rizwan	I	Rs.3000/-	Earth Sciences
4	Malaya Kumar Sahoo	II	Rs.2000/-	Earth Sciences
5	Akhil Premkumar	I	Rs.3000/-	Physics
6	Monica Bapna	II	Rs.2000/-	Physics
7	Avishek Shah	I	Rs.3000/-	Biosciences & Bioengg.
8	Hitaishi Arora	I	Rs.3000/-	Applied Statistics & Informatics
9	Parth Dharmesh Dave	II	Rs.2000/-	Applied Statistics & Informatics
10	Deepanshu Verma	I	Rs.3000/-	Mathematics
11	Shidhesh Dattatraya Supekar	II	Rs.2000/-	Mathematics
12	Nirban Majhi	I	Rs.3000/-	Applied Geophysics

Other Prizes

Name of the Prize	Roll No.	Name of the Awardee	Total Amount
Shri Rakesh Mathur Excellence Award	130100008	Aniket Patankar	**Rs. 1,00,000/-** III yr. UG student
Shri T.K. Subramanian Prize For Academic Excellence	130100008	Patankar Aniket Sanjay	**Rs.1000/-** III Yr. B.Tech Mech.Engg.
	160070016	Redasani Rushabh Rajendra	**Rs.2000/-** I Yr. B.Tech. Electrical Engg.
Urvish Medh Memorial Prize (For Electrical Engg.)	150070005	Sridhar Srivatsan	**Rs.2000/-** II Yr. B.Tech. Electrical Engg.
	140070036	Sattwik Deb Mishra	**Rs.2000/-** III Yr. B.Tech. Electrical Engg.
	13D070027	Shorya Consul	**Rs.2000/-** IV Yr. B.Tech. Electrical Engg.
Prof. M.N. Vartak Memorial Prize	155280029	Hitaishi Arora	**Rs.6000/-** II yr. M.Sc. Applied Statistics & Informatics
Mrs. Rama Mathur Memorial Prize	155090007	Deepanshu Verma	**Rs.2000/-** II yr. M.Sc. Mathematics
Aditya Choubey Memorial Prizes	150070005	Sridhar Srivatsan	**Rs.4000/-** II yr. B.Tech. Electrical
S C Mehrotra Prize	150040083	Kanush Agrawal	**Rs.10000/-** II yr B.Tech Civil
	140040083	Shubham Agrawal	**Rs. 10000/-** III yr B.Tech Civil
	130040106	Prajwal K.A.	**Rs. 10000/-** IV yr B.Tech Civil
Prof. A.K. Mallik Award	130110003	Chirag Gandhi	**Rs.5000/-** III yr. B.Tech, Met. Engg. & Mat. Sc.

Inauguration of IIT Goa

Union Minister of Human Resource Development Mr. Prakash Javadekar inaugurated Indian Institute of Technology Goa on July 30, 2016. He also laid the foundation stone for IIT Goa Students' Hostel. The newly set up IIT Goa shall function from temporary campus at Goa Engineering College, Farmagudi and will be mentored by IIT Bombay. Speaking on the occasion Hon'ble Union HRD Minister stated that IITs are recognised world over as premier institutes of academic excellence. He also stated that the Ministry is working towards increasing the perception of IITs so that IITs are ranked top in world rankings. He also congratulated the students who made into the IITs and described them as the cream of the country. The Minister also promised that the permanent campus at Loliem will be completed within 1000 days.

Hon'ble Union Minister of HRD Mr. Prakash Javadekar, Hon'ble Defence Minister Mr. Manohar Parrikar, Hon'ble Chief Minister of Goa Mr.Laxmikant Parsekar, Deputy Chief Minister of Goa Mr. Francis D'Souza, Prof. Devang V. Khakhar, Director, IIT Bombay and other dignitaries at the inauguration of IIT Goa.

Speaking on the occasion, Union Defence Minister Mr. Manohar Parrikar, said the summer internship programme of IIT students can be conducted at various defence research establishments and will add value to their curriculum. He also mentioned about a programme in which scientists from DRDO will act as visiting faculty members to various IITs.

The permanent campus for the Indian Institute of Technology Goa (IIT Goa) will be developed at Loliem, a quiet town in Canacona taluka in the southernmost tip of Goa.

Mentored by IIT Bombay, the academic activities of IIT Goa are well tuned to expose the student to a vibrant academic culture and bring out the best in every student. The contribution of this Institute would be to educate young people to solve the real problems faced by our countrymen using the technical knowledge they are imparted during their formative years.

Inauguration of IIT Dharwad

The Indian Institute of Technology Dharwad was inaugurated on August 28, 2016 at the auspicious hands of Hon'ble Union HRD Minister Mr. Prakash Javadekar and Chief Minister of Karnataka Mr Siddaramaiah. IIT Bombay is the Mentor for both IIT Goa and IIT Dharwad. The interim campus of IIT Dharwad is located just a few meters away from the Pune-Bengaluru National Highway (NH4). The WALMI (Water And Land Management Institute) campus of IIT Dharwad is fully equipped with class rooms, laboratories, modern hostel buildings. This campus is expected to serve the needs of IIT Dharwad for the first couple of years. The 470-acre new IIT Dharwad campus is expected to come up in a couple of years and is located two kilometers away from the interim campus.

Hon'ble Union Minister of HRD Mr. Prakash Javadekar, Hon'ble Chief Minister of Karnataka Mr Siddaramaiah (in center), Hon'ble Minister for Chemicals & Fertilizers & Parliamentary Affairs, GOI Mr. Anantha Kumar, Prof. Devang V Khakhar, Director, IIT Bombay and other dignitaries at the inauguration of IIT Dharwad in Karnataka.

IBM and OpenPOWER Partners Inaugurate High Performance Computing Research Facility At IIT Bombay

IBM (NYSE: IBM) and IIT Bombay have teamed up to open the first OpenPOWER Research Facility (OPRF) at IIT Bombay on August 18, 2016. The OPRF will help drive the country's National Knowledge Network initiative to interconnect all institutions of higher learning and research with a high-speed data communication network, facilitating knowledge sharing and Collaborative research and innovation.

Born out of the collaborative spirit of the OpenPOWER Foundation – a community co-founded in part by IBM, NVIDIA and Mellanox, supporting open development on the POWER architecture – OPRF has been established to provide India's large research and development community with technical assistance and infrastructure to further indigenous research. With the opening of OPRF, scientists, students, developers and enterprises who are a part of the National Knowledge Network initiative can tap into the latest and best available OpenPOWER-based infrastructure, including the POWER processor, NVIDIA GPU accelerators and Mellanox networking solutions. To begin with, PhD scholars, MTech and engineering students will tap into OPRF to develop new age applications and solutions around eGovernance, healthcare, education, agriculture and high-performance computing.

"OPRF at IIT Bombay supports an open technology ecosystem for high-performance computing and its applications. It gives opportunities to students, faculty, and researchers to gain familiarity with OpenPOWER system features and make contributions to the OpenPOWER foundation in terms of power processor, GPU acceleration, network adapters/ switches and application codes. In terms of its objectives and activities, OPRF aligns well with the recently-launched National Supercomputing Mission of Government of India," said Prof. P. S. V. Nataraj, Professor and Principal Investigator, IIT Bombay.

"Open collaboration is driving the next wave of innovation across the entire system stack, allowing clients and organizations to develop customized solutions to capitalize on today's emerging workloads,' said Monica Aggarwal, Vice President, India Systems Development Lab (ISDL), IBM Systems. *"The OPRF will enable Indian companies, universities and government organizations to build technologies indigenously using the high-performance POWER processor, helping to drive the national IT agenda of India,"* she added.

Solar Urja Lamps (SoUL) To Light Up 10 Crore Students In India

Minister of State with Independent Charge for Power, Coal, New and Renewable Energy (MNRE) Mr. Piyush Goyal (second from right) checks out IITB's Solar Urja Lamp (SoUL) along with Prof. Devang Khakar, Director, IIT Bombay, Prof. Chetan S. Solanki, Pincipal Investigator SoUL, Department of Energy Science and Engineering during the event on campus.

While announcing the completion of 1 Million Solar Urja Lamp (SoUL) programme of IIT Bombay in record time, Minister of State with Independent Charge for Power, Coal, New and Renewable Energy (MNRE) Mr Piyush Goyal on July 2, 2016 also announced the scaling up of the programme to 10 crore students across the country. *"MNRE will provide the required financial support of Rs. 1800 crore for this mission,"* he said. Mr Piyush Goyal also appreciated the efforts of villagers who assembled and distributed the lamps.

Prof. Devang Khakhar, Director, IIT Bombay lauded the efforts of the project team. *"The SoUL project is the largest project implemented by IIT Bombay. It has benefited 1 million school children. We are proud of this achievement and are grateful for the help of sponsors of the project,"* he said.

Head of the programme Professor Chetan S. Solanki from Department of Energy Science and Engineering said, *"IIT Bombay has always been a strong advocate for 'Right to Light'. We want to ensure every school student gets sufficient light to study. Our solar lamps have solved that problem".* He further added that about 10 crore students in the country from tribal blocks, high kerosene consumption blocks and educationally-backward blocks will benefit from the programme.

The large-scale solar lamp programme addressed the issues of scale, speed and skill. Million SoUL focused on the 'localization of solar energy' in consonance with Prime Minister Narendra Modi's vision of 'Make in India'. The objective of this program was to provide clean light for study purpose to every child in the country in the fastest and most cost-effective manner. For this, IIT Bombay partnered with NGOs having presence at grassroot level. Solar study lamps were assembled, distributed, used and repaired by rural people. In order to achieve scale, the model was designed in such a way that it could be replicated in parallel in multiple blocks, across districts and states. For achieving speed, the assembly and distribution for any block was designed to be completed in 90 days. To target skill development, rural people were trained to assemble, distribute and repair the lamps.

The programme was implemented in 2014-16 with financial support from the MNRE, Government of India and other philanthropic partners like Sir Dorabji Tata Trust and corporates like Idea Cellular Pvt. Ltd. It has integrated IIT Bombay's technical expertise in solar lamp technology, operations, concurrent evaluation and impact analysis.

One million solar study lamps were distributed in the states of Madhya Pradesh, Maharashtra, Rajasthan and Odisha, covering 23 districts, 97 blocks and 10,900+ villages. There were 54 assembly and distribution centres and 350 Service Repair Centres in operation with 1,409 trained manpower. It was committed to reach the most marginalized communities with its presence in 77% tribal blocks and 83% educationally backward blocks. Prof. N. C. Narayayanan from Center for Technology Alternatives in Rural Areas and Prof. Jayendran V from Industrial Engineering and Operation Research are also fully involved in the project planning and execution.

Sixth International Congress on Computational Mechanics and Simulation

The sixth International Congress on Computational Mechanics and Simulation (ICCMS2016) was held during June 27 – July 1, 2016 at the Indian Institute of Technology Bombay (IIT Bombay) campus. It was organized and hosted jointly by Department of Civil Engineering, IIT Bombay and Department of Structural Engineering, Veermata Jijabai Technological Institute (VJTI) Mumbai, under the auspices of Indian Association for Computational Mechanics (IndACM).

The Indian Association for Computational Mechanics (IndACM) was founded on January 1, 2000 to further the growth of Computational Mechanics in different disciplines. The first five International Congresses on Computational Mechanics were held under the aegis of IndACMat IIT Kanpur (2004), IIT Guwahati (2006), IIT Bombay (2009), IIT Hyderabad (2012) and SERC Chennai (2014).

The aim of ICCMS2016 is to provide a forum for scientists, academicians, analysts, designers and practicing engineers from around the globe to interact and exchange ideas and establish relationships from all areas of theoretical and applied mechanics including theoretical, computational and experimental aspects, as well as theoretical modeling, methods of analysis and instrumentation besides setting directions for future growth. It includes basic discipline-oriented as well as inter-disciplinary areas.

Training on "Reservation in Services"

PT & D Cell at IIT Bombay conducted the training programme on "Reservation in Services" on July 28 and 29, 2016. Guest Faculty Mr. Praveen Prakash Ambastha, Deputy Director, ISTM, Institute of Secretariat Training & Management conducted the training

Dr. R. Premkumar, Registrar, IIT Bombay felicitating participants during the training session.

IIT Bombay signs MoU with SBI

Sitting (L-R) *Dr. S. Upendra Rao - GM (IT-SAP), Prof. Milind Atrey – In-charge (SINE), Sh. Mrutyunjay Mahapatra – DMD & CIO, Prof. Devang Khakhar – Director, IIT Bombay, Sh. D.A. Tambe – CGM (IT-Marketing & Collaboration) and Sh. Sonny George – CGM (IT-Infra)*

Standing (L-R) *– Sh. Yogesh Joshi, Sh. Ashish Ojha, Sh. Makarand B Kedare – DGM (Innovations & Quick Wins), Sh. Sandeep Talla, Sh. Ganesh Hegde – GM (eChannels), Sh. Amitabh Srivastava, Ms. Sampada Gavankar, Ms. Poyni Bhatt – COO (SINE), Dr. Pradeep Pillai, SINE and Sh. Kunjal Prasad - GM (IT - Operations)*

State Bank of India, the largest public sector bank in India and a Fortune 500 Company, has joined hands with Society for Innovation and Entrepreneurship (SINE) at IIT Bombay to promote innovation by start-ups in the financial sector. This is the first such MoU signed by a public sector bank with a premier educational institute like IIT Bombay on July 7, 2016 at GITC, CBD Belapur, Navi Mumbai.

SINE is a technology business incubator of IIT Bombay. It was set up as a non-profit entity in 2004 with functional autonomy under its own Governing Board, with Board members from IIT Bombay faculty and industry experts. The basis for incubation for start-up is the potential to create economic growth, strategic value and social value.

As per the MoU, both the parties will identify FinTech start-ups that have products/ applications to cater to the financial sector and can help SBI to explore opportunities to enhance the synergy for their banking services. SBI will provide a platform for testing/ piloting such products/ applications and maybe also check for any specific business linkages.

SBI has a large network across the country. This will definitely help the start-ups, especially ones with social relevance, to reach out to the larger community. Also, SBI can help in soft landing of start-ups abroad.

Both SINE and SBI will try to understand the key pain areas faced by the entrepreneurial community and help seek solutions. SBI will interact with the entrepreneurial and research community at IIT Bombay including e-cell, Desai Centre, start-ups of SINE to understand latest research, innovations and conduct knowledge sessions for mutual benefit to arrive at technological solutions. SINE will extend complete assistance and coordinate with stakeholders at IIT Bombay.

This MoU will help evaluate start-ups operating out of and promoted by SINE for early stage funding within the bank's norms. If SBI decides to infuse fund in the start-ups, SINE may help for initial screening like technical competency, product roadmap, innovation subject, impact of innovation etc. If SBI decides to infuse funds in any of the start-ups at SINE, the funding model will be considered on case to case and merit basis.

SAP enhances collaboration with IIT Bombay

(L-R) Prof. Devang Khakhar, Director, IIT Bombay, Mr. Bernd Leukert, member of the Executive Board, Products & Innovation, SAP SE and Mr. Dilipkumar Khandelwal, Managing Director, SAP Labs India and Executive Vice President, during the inauguration of SAP Innovation Centre at IIT B

SAP SE (NYSE: SAP) launched a Startup Accelerator Program in partnership with the Society for Innovation and Entrepreneurship (SINE), a technology and business incubator at the IIT Bombay (IITB) campus on June 24, 2016. In addition, SAP inaugurated an SAP Innovation Centre, housed within IITB campus. These announcements enhance SAP's existing initiative with IITB to support startups and train teachers, announced earlier this year.

The SAP-IITB Startup Accelerator Program is a cohort based, boot camp led accelerator program to mentor and accelerate the business growth of ten social enterprises or startups over the next year. SINE will administer a business incubator that will provide support for technology-based entrepreneurship and help young minds in their first fledging steps to market. The common goal is to nurture investible startups and make them profitable.

The SAP Innovation Centre will host research projects in association with the computer science department of IITB; in addition, it will provide an opportunity for students to participate in SAP Mile, a university crowdsourcing platform which allows students to participate in virtual internships to learn and experiment on SAP product ideas and solutions. The SAP Innovation Centre will also enable students from IITB to work on next generation and cutting-edge technologies.

"IIT Bombay is committed to academic and scientific excellence. We are delighted that SAP is partnering with us through the Innovation Centre and Startup Accelerator program. These programs will also help our students to gain valuable real-life experience in partnership with SAP," said Professor Devang Khakhar, Director of IIT Bombay.

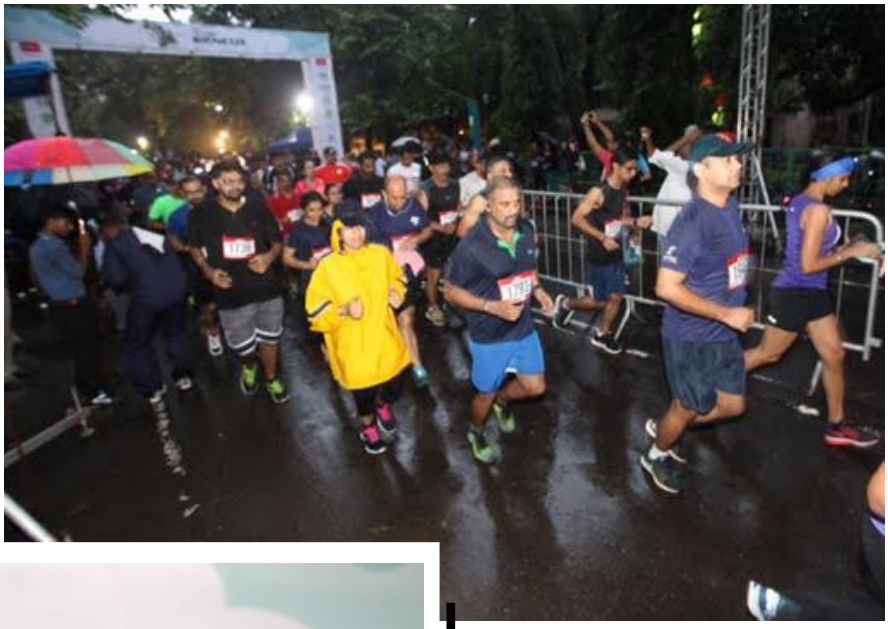
"We want to be a significant accelerator of growth for emerging social entrepreneurs and startups in India," said Bernd Leukert, member of the Executive Board, Products & Innovation, SAP SE. *"SAP is committed to propelling the entrepreneurship ecosystem in India by providing youth and emerging entrepreneurs with access to technologies they need to succeed in the digital economy."*

SAP works with incubators at leading Indian universities to strengthen the regional entrepreneurship ecosystem through accelerator programs and provides mentorship and capacity building to social enterprises and start-ups. SAP also propels youth entrepreneurship, fosters entrepreneurs in-residence and has established the SAP Endowed Chair on 'Social Entrepreneurship and Innovation' at the Indian Institute of Management, Ahmedabad.

Dilipkumar Khandelwal, Managing Director, SAP Labs India and Executive Vice President, Enterprise Cloud Services, SAP SE said, "The partnership with the Indian Institute of Technology in Mumbai will further our existing efforts on strengthening the entrepreneurship ecosystem. So far, SAP has impacted over 250 startups; accelerated and mentored 20 startups and social enterprises to make them investible and enable their next stage of growth."

India's First Cross-Campus Run to Unite Alumni, Students & Faculty

IIT Bombay hosted its annual **Monsoon Run** at its campus in Powai on Sunday, August 28, 2016. The Institute invited entrepreneurs, alumni with families and students to their green and picturesque campus. IIT Bombay in association with Chapter 3 conducted the first edition of '**Run for Your Campus**'. The Campus saw 4,000 students and former students from 500 colleges participating in a 5-km run walk and 11-km lake run on the Powai campus.



Participants at "Run for Your Campus" - Annual Monsoon Run hosted by IIT Bombay students.

Bollywood actor Mr. Sidharth Malhotra, special guest at IIT Bombay's "Run for Your Campus" event.

Organized by IIT Bombay in association with Chapter 3, an IP company, the event gave a common platform for current as well as alumni of institutions and their faculty to interact and mingle with each other even as they shared nostalgia associated with college life. Among the participating institutions were IIT Madras, IIM Bangalore, IIM Indore, NITIE and many others from Mumbai.

The event offered participants a chance to run through the scenic campus of IIT Bombay. Running through scenic hills, lush greenery and the picturesque lakeside made this fitness-centric experience memorable. It is the only time when the gates of IIT B are open for people from outside the campus to visit and cherish its beauty. Actor Sidharth Malhotra accompanied the runners in this IIT Bombay Monsoon Run.

Prof. Soumyo Mukherjee, Dean (Student Affairs) , IIT Bombay, said, *"We wanted this to be an unusual event that brings back memories of college life. Since people always have a special place in a corner of their heart for college days, we saw a large number of them participating. Along with our alumni and families, there were also several entrepreneurs who ran."*

Speaking about the event, Ashish Bhushan, CEO of Chapter 3 said, *"**Run For Your Campus** provides a platform for the alumni of an institute to meet its present students, exchange ideas and thoughts and instil a feeling of giving back."*

Visit of Japanese Ambassador to IIT Bombay

Japanese Ambassador Mr. H. E. Kenji Hiramatsu interacting with Prof. D.V. Khakhar, Director, Deans and Faculty of IIT Bombay.

A Japanese delegation led by **Mr. H. E. Kenji Hiramatsu,** Ambassador of Japan to India, visited the IIT campus on August 17, 2016. The delegation constituted of Mr. Kenko Sone, Minister, Chief of Economic Section, Embassy of Japan, Mr. Takuma Hisanaga, First Secretary, Economic Section, Embassy of Japan, and Ms. Miyuki Eguchi, Consulate, Economic Section, Consulate-General of Japan in Mumbai. Prof. Rajiv Dusane, Dean (International Relations) gave a presentation about the Institute. The Ambassador interacted with selected students on India-Japan relationship. Prof. Devang Khakhar, Director, IIT Bombay, Prof. Ravi Sinha, Dean (ACR) along with the other Institute functionaries interacted with the delegation.

Talk by Director, Global Engineering, Boeing Company

An interactive session on 'Technical Externship Programme' with Boeing Company.

The Boeing Company, well known for its aerospace design, development and manufacturing activities, has shown interest in including IIT Bombay for its 'Technical Externship Programme' which supports students from different educational institutions across India. In this regard, an interactive session with Dr. Abhi Chakravarty, Director Global Engineering, Boeing Company was held on campus on July 15, 2016. The interactive session was designed to address the doubts and queries of students and also provide them with an understanding about the scope of the programme and its benefits.

Celebration of Independence Day

70th Independence Day was celebrated on August 15, 2016 with a lot of enthusiasm. The National Flag was unfurled by Prof. Devang V Khakhar, Director, IIT Bombay in the area in front of SJM SOM building.

The Institute celebrated throughout the fortnight by organizing a series of cultural events and competitions based on India and its culture.

Set up of New Academic Unit- Centre for Policy Studies (CPS)

Prof. Satish B. Agnihotri addressing the participants during inauguration of academic unit - Centre for Policy Studies.

IIT Bombay has set up a Centre for Policy Studies (CPS) as an independent academic unit of the Institute. An inception workshop was organized on August 19, 2016 at IIT Bombay to mark the opening of the Centre. Prof. Devang Khakhar, Director, IIT Bombay formally inaugurated the Centre at the event. Dr. Pratap Bhanu Mehta, President of Centre for Policy Research gave the inaugural address outlining the tasks and challenges that such a Centre would face. Professor Satish B Agnihotri, the Head of the new Centre gave an overview of the proposed activities. Prof. TCA Anant, Secretary Statistics and Programme Implementation, GoI lauded the initiative taken by IIT Bombay and hoped that the Centre will contribute significantly to the policy discourse in the country.

The Centre will also work in a collaborative mode with similar other entities instead of becoming one more competing think tank. Its endeavor will be to place evidence - based analysis of various issues and white papers in public domain as input to policy making.

In his address, Prof. Devang Khakhar explained the role of the new Centre, unique to IIT Bombay and how it would aim to bring faculty from different disciplines to work on policy issues. Prof. Satish Agnihotri, Head of the Department traced the origin of the idea of such a Centre at IIT Bombay and how the idea has now turned to a reality. Further events planned by the new Centre include, 'Development Discourse' a monthly activity in collaboration with six different Departments / Centres within the Institute, where eminent speakers will speak on topical policy issues. The other event would be an Annual Policy Dialogue to promote conversation between technologists and sociologists on a specific theme e.g. 'Coping with COP-21'.

26th Vanamahotsava

26th Vanamahotsav – tree plantation drive, a beautiful initiative to save the environment was celebrated on July 1, 2016 near hill behind SAMEER and Ananta Building. A large number of saplings of various varieties were planted by school students of Kendriya Vidyalaya and Campus School, both located within IIT Bombay campus.

Prof. Devang V Khakhar, Director, IIT Bombay highlighted the importance of trees in our lives and encouraged the participants to develop genuine love for nature. Prof. B V S Viswanadham, Dean (IPS) and Prof. S.V. Kulkarni, Associate Dean (IPS) -II planted saplings to commemorate the occasion. A short skit and song performance on nature, presented by the school students, was much appreciated by the gathering. The event was organised by the Horticulture Section of the Estate Office, IIT Bombay, which takes due care of the saplings planted at Vanamahotsav, throughout the year.

(L-R) Prof. S.V. Kulkarni, Associate Dean (IPS)-II, Prof. B.V.S. Viswanadham, Dean (IPS), Prof. D.V. Khakhar, Director, IITB along with Institute functionaries during the celebration of 26th Vanamahotsav - an annual tree-planting drive at the Institute

IIT Bombay, Intel Technology India Pvt. Ltd and Department of Science and Technology to incubate hardware and systems start ups

The Department of Science and Technology (DST), Government of India, Intel Technology India Pvt. Ltd. and Society for Innovation and Entrepreneurship (SINE), IIT Bombay, have collaborated to launch the Collaborative Incubation Programme for Hardware and Systems Startups. The aim is to boost innovation and entrepreneurship.

What makes this collaboration unique is that the industry, academia and government have come together to support hardware and systems-based startups in the country through mentoring, training, lab facilities, hardware kits, prototyping, business services, funding, etc.

The announcement was made recently in the presence of Prof. Ashutosh Sharma, secretary, DST, Ramesh Abhishek, Secretary, Department of Industrial Policy and Promotion, Government of India, Nivruti Rai, General Manager, Intel India and Prof. Devang Khakhar, Director, IIT Bombay, among others.

During the year-long programme, start-ups will be supported for six months onsite at SINE, IIT Bombay or Intel India, Bengaluru. Participating startups will be incubated through intensive training periods, one-on-one mentoring, technology related support from Intel experts, business service support from SINE, as well as prototyping and manufacturing support.

Intel India will build capacities through mentor and provide technology- related support, besides facilitating ideation, design thinking, prototyping workshops and manufacturing support through industry experts.

Prof Khakhar also added that SINE had been working on incubating product and IP-based startups in India, and the new, collaborative, sector-specific programme was an evolution of its activities. SINE has so far focused on startups from IITB. This new initiative, supported by DST, will extend SINE's role to help start-ups across India and increase IIT Bombay's contributions to the ecosystem.

Librarian's Day Celebrated at IITB

Prof. R. K. Malik, Former Deputy Director (AIA), delevering the keynote address on the occasion.

IIT Bombay celebrated Librarian's Day for the first time on its campus on August 12, 2016 in the Central Library at IIT Bombay. Padma Shri (Prof.) D.B. Phatak was the Chief Guest on the occasion. Prof. Vikram M. Gadre, Convener, CDEEP, Prof. Avinash Mahajan, Associate Dean (AP) and Prof. Haripriya G.S of the Department of Humanitites & Social Sciences, IIT Bombay were the guests of honour. Prof. R. K. Malik, Former Deputy Director (Academic & Infrastructural Affairs) delivered the key note address on the occasion.

Honorable President of India's Address To IIT Bombay Students

The Honorable President of India Pranab Mukherjee addressed students and faculty members of institutes of higher learning through video conference on August 10, 2016 at 12.30 pm. IIT Bombay was amongst the total 8 selected for interaction with the Hon'ble President of India. The address was received in A1A2, CDEEP studio no. 3, Mathematics Building's ground floor.

IIT Bombay's student Venkatesh Amrutwar interacted with the Hon'ble President of India. The question raised by Venkatesh was, "Indians today are vital cogs in systems across the world but not innovators. As a society, we seem to harness security and job efficiency over innovation and risk-taking. How are we to change this social mindset?"

The Hon'ble President of India spoke at length about igniting imagination and promoting scientific temperament amongst students at a tender age and launching tinker's lab in schools to work towards creating a compassionate, creative and innovative nation. He stressed on the importance of overcoming inertia in society and developing a problem-solving attitude to achieve high standard of performance and create not just a developed but also an evolved, caring and sharing society.

Institute Colloquium

Dr. Samir Mitragotri, Director, Center for Bioengineering; Professor, Department of Chemical Engineering, University of California, Santa Barbara, CA, USA; and N.R. Kamath Chair Professor, IIT Bombay delivered the N.R. Kamath Chair Colloquium on *"Making of Smart Medicines"* on July 4, 2016.

Prof. Vijay Prashad, George and Martha Kellner Chair in South Asian History, Professor, International Studies, Trinity College, Hartford, Connecticut, USA, delivered an Institute lecture on "*Syria and the Destruction of Nations"* on July 19, 2016.

Prof. Nitin P. Padture, Professor and Director, Institute for Molecular and Nanoscale Innovation Brown University, School of Engineering, United States, delivered the Institute Colloquium on *"Harnessing the Power of the Sun Efficiently and Cheaply: The Unprecedented Promise of the New Perovskite Solar Cells"* on July 22, 2016.

Mr. T. V. Narendran, MD, Tata Steel India and South East Asia, delivered the third lecture of the "Steel Colloquium Series" *on "Why steel is a big deal ... in the life of people and nations and .. how can you help"* on July 27, 2016.

Prof. Sudarshan Iyengar, Distinguished Chair Professor in Gandhian Philosophy, IIT Bombay, delivered an Institute Lecture on *"Individual Freedom in Gandhian Perspective: Implications for Nonviolence Society"* on August 24, 2016

Mr. Darius Khambata, Senior Counsel, Former Advocate General of Maharashtra & Former Additional Solicitor General of India, delivered the third Lecture of the "Institute Lecture Series on the Indian Constitution" titled "*On Article 19: Freedom of Speech*" on August 20, 2016.

Prof. Bruce Hajek, Centre for Advanced Study Professor of Electrical & Computer Engineering, Professor in the Coordinated Science Laboratory, Hoeft Chair in Engineering, University of Illinois, Urbana-Champaign, delivered N.R. Kamath Chair Colloquium on *"Community Detection in Networks: Algorithms, Complexity, and Information Limits"* on August 10, 2016.

Conference/Seminars/ Workshops

3rd International Conference on MIPS 2016

SJM School of Management, IIT Bombay, through the MHRD IPR Chair Project, and National Institute of Industrial Engineering (NITIE), jointly organized the 3rd International Conference on **"Management of Intellectual Property Rights and Strategy (MIPS) 2016"** on the theme *IP for Development: The emerging Paradigm* during July 15-16, 2016 at National Institute of Industrial Engineering (NITIE), Mumbai. The core focus of this conference was to provide a suitable and conducive platform to discuss, debate and present contemporary research in the area of Intellectual Property Rights and its management. The conference provided an ideal opportunity for emerging researchers in the IPR domain to interact with experts and practitioners through doctoral colloquium, themed tracks and keynote sessions. Separate workshops and tutorials were also conducted as part of the pre-conference event.

Prof. Ambarish Kunwar, Department of Biosciences and Bioengineering organized QIP/CEP course *"Biology For Engineers"* during June 6-11, 2016 and QIP course *"Monte-Carlo Simulation of Complex Biological Systems"* during June 13-17, 2016 at the Institute.

Departmental Lectures

Department of Humanities & Social Sciences

Prof. Viral Acharya, New York University, Stern School of Business, USA, gave a talk in a seminar titled "*Whatever it takes: The Real Effects of Unconventional Monetary Policy"* on July 5, 2016.

Dr. Sariya Cheruvallil-Contractor, Coventry University, UK, gave a talk in a seminar titled "*Religion and Belief, Discrimination and Equality in England and Wales: Theory, Policy and Practice (2000-2010*)" on August 8, 2016

Dr. Debora Spini, Syracuse University, Florence gave a talk in a seminar titled "*Gender, religion and violence in the crisis of modernity*" on August 17, 2016.

Dr. Costica Bradatan, Texas Tech University, USA, gave a talk in a seminar titled *"The Philosopher of Failure*" on August 18, 2016.

Dr. Pawan Goyal, IIT Kharagpur, gave a talk in a seminar titled "*Semantic Processing in Sanskrit*" on August 19, 2016.

Dr. V. A. V. Raman, University of Delhi, gave a talk in a seminar titled *"Malana - A Transfigured Landscape"* on August 22, 2016.

Dr. Mami Yamada, Meiji Gakuin University, Japan, gave a talk in a seminar titled "*Indian Gods in Japan - History, Identity and Supremacy in the Society*" on August 22, 2016.

Prof. Daniel Raveh, Tel Aviv University, Israel, gave a talk in a seminar titled "Philosophical Intersections in Patanjali's Yogasutra" on August 24, 2016

Centre for Technology Alternative in Rural Areas (CTARA)

Dr. B.R. Lakshmi, Director, Molecular Diagnostics, Counseling, Care & Research Centre (MDCRC), Coimbatore gave a talk in a seminar titled *"A working model to holistically approach neglected, orphan disorders in our country – case Duchenne Muscular Dystrophy"* on July 29, 2016**.**

Dr Prabodh Halde, Head Technical Regulatory–MARICO Ltd, gave a talk in a seminar titled *"Food Safety & Standards Regulations – Impact for Industry and Way Ahead"* on August 16, 2016.

Department of Mechanical Engineering

Mr. Yogesh Singh, Department of Mechanical Engineering, Indian Institute of Technology Indore, gave a talk in a seminar titled *"Performance Investigations on Mechanical Design and Motion Control of Planar Parallel Manipulators"* on August 17, 2016.

Dr. Sunil K. Agrawal, Columbia University, New York, gave a talk in a seminar titled *"Robots for Characterizing and Training of Human Movements"* on August 10, 2016.

Awards and Distinctions

Prof. Srikanth Srinivasan, Department of Mathematics has been selected to receive the Young Scientist Award of the Indian National Science Academy, New Delhi.

Prof. R. Murugavel, Department of Chemistry has been selected to receive the CRSI Silver Medal - 2017.

Prof. Bhaskaran Muralidharan, Department of Electrical Engineering, has been invited to serve as an Editorial Board Member for Scientific Reports.

Prof. Ramesh Singh, Department of Mechanical Engineering, Mr. Santanu Paul and Mr. Wenyi Yan has received the outstanding paper award for "Thermal Model for Additive Restoration of Mold Steels Using Crucible Steel" at 44th North American Manufacturing Research Conference and ASME Manufacturing Science and Engineering conference held at Virginia Tech. from June 27 to July 1, 2016.

Prof. Ashwin Gumaste, Department of Computer Science & Engineering and **Prof. Subhananda Chakrabarti**, Department of Electrical Engineering have been selected for NASI-Reliance Industries Platinum Jubilee Award for Application Oriented Innovations in Physical Sciences for the year 2016.

Prof. Aftab Alam, Department of Physics will be honored during a conference in Sweden by the International Association of Advanced Materials congress with the prestigious "International Association of Advanced Materials Scientist Medal (IAAM Scientist medal) for the year 2016".

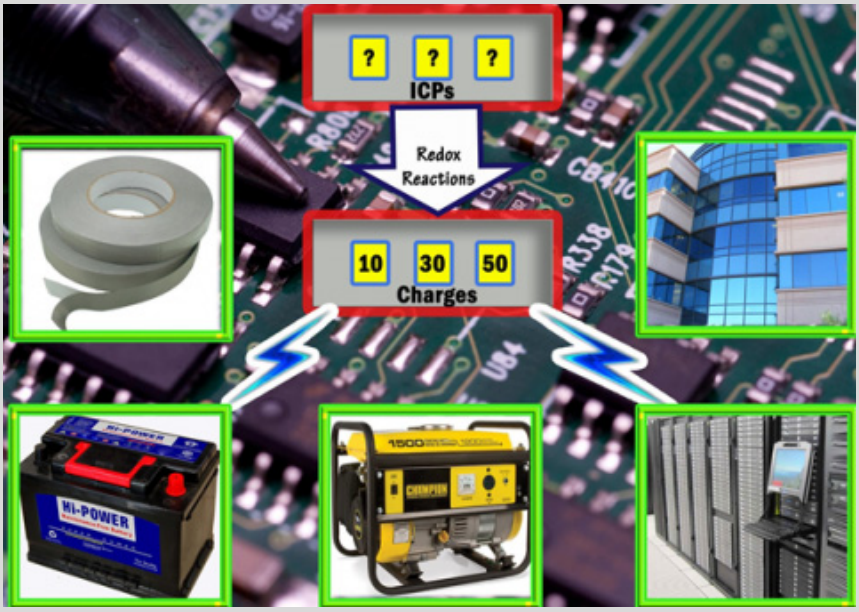
Prof. Anand Khanna, Department of Metallurgical and Materials Science, has been selected to receive the prestigious **International Association of Advanced Materials Medal (IAAM)** for the year 2016 in recognition of his outstanding contributions in the field of "Advanced Materials Science and Technology"

Prof. Saravanan Vijayakumaran, Department of Electrical Engineering: As per the copy of the Minutes of the meeting of the Closure Report Review of ISRO sponsored project **"Signal Processing for Performance Improvement of MOTR",** the Review Committee has appreciated the research work carried by Prof. Saravanan Vijayakumaran, and his team in this director and used the CFAR algorithm code for the successful launch of the satellites on June 22, 2016.

Prof. Suvarn Kulkarni, Department of Chemistry, has been selected to receive the prestigious CRSI Bronze medal for the year 2017.

Research in focus

Charging For A Future



Breakthrough in chemical analysis of Intrinsically Conducting Polymers (ICPs) enables easier identification of polymers suitable for different prospective applications. Researchers at IIT Bombay have come up with a \ novel and much simpler method to quantify their charge storage characteristics.

Ever wondered what connects power equipments, batteries, microelectronics, electromagnetic interference shields and micromachines? It is a new technological marvel called Intrinsically Conducting Polymers. These polymers with a high electrical conductivity have stirred intense interest in the research and development community lately. Conducting polymers are used in applications ranging from electrodes for batteries and sensors to anti-static space suits. The colour of the polymer film changes with a change in the electric potential so that such materials could be used to glaze windows to cut out the glare of sunlight; by turning blue at a higher potential. The same property of these polymers lends to them their potential for application in electrochromic displays.

Ms. Asfiya Q. Contractor and Prof. Vinay A. Juvekar of Department of Chemical Engineering have developed a novel method to quantify the charge storage characteristics of different conducting polymers. The work aids in a fundamental understanding of the charging-discharging behaviour of conducting polymers. Compared to Electron Spin Resonance and Raman spectroscopy, which are the currently available techniques to investigate the charge storage characteristics of the ICPs, the new, and much simpler, redox reaction-based technique not only gives a more accurate quantification of the characteristics, but also enables us to find out the energies of charge carriers in each charging regime. The research paper has recently been published in the journal of Analytical Chemistry of the American Chemical Society, which is one of the most prestigious journals on the subject.

The simplicity of the experiment, would also help in simplifying the analysis of the results. “When the experiment is complicated, the analysis of results also gets complicated”, the author explains. The method developed is general and can be applied to investigate charge storage characteristics of other intrinsically conducting polymers as well, thereby providing an useful tool to choose and tune ICPs for various applications.

The method is expected to exhibit a potential impact in the future. Conducting polyaniline films, used in the work, could prove advantageous over the conventional capacitors and carbon electrodes. Conducting polymers exhibit a property called ‘pseudocapacitance’; where they store charge in the bulk of the material compared to conventional carbon electrodes that store only on the surface. Moreover, the fabrication of these films can be easily done in a dilute acid medium at room temperature, thus eliminating special fabrication requirements.

Link to published work:

A Q Contractor & V A Juvekar. “Elucidation of band structure of charge storage in conducting polymers using a redox reaction.”

Write-up prepared by (with inputs from the author) : Saheli Chatterjee, Arun Kumar, Apoorva Garg & P.Pradeep.

For details please visit: http://www.iitb.ac.in/en/research-highlight/charging-future

Faculty News

Prof. Atanu Ghosh, SJM SOM, IIT Bombay (centre) along with Summer School participants.

Prof. Atanu Ghosh, SJM School of Management,IIT Bombay organized a two-week Summer School (Study Tour Exchange Programme) for the students of School of Management from the University College of London (UCL) from June 27 - July 8, 2016.

Prof. Anirban Guha, Department of Mechanical Engineering, recipient of Dr. P. K. Patwardhan Technology Development Award-2015, delivered an Institute Award talk on *"Development of 'a remotely operated ground vehicle (Rover) for Indian Army"* on August 17, 2016. The talk was organized by the Office of Dean (R & D).

Prof. A.K. Dikshit, Centre for Environmental Science and Engineering, conducted inception-cum-stakeholders meeting on 'Study for Load Carrying Capacity for Raipur Region' at Raipur on June 13, 2016 with about 200 participants from industries. The meeting were presided over by Mr. Devendra Singh, Member Secretary, Chhatisgarh Environmental Conservation Board. **Prof. Dikshit** also presented a talk on *"Water Conservation for Today and Tomorrow"* in the conference on water audit on August 21 & 22, 2016 organized in Mumbai on June 23, 2016.

Prof. A.K. Dikshit organised CEP short Term Course on *'Technological Advancements in Sewage Treatment including Basic Concepts'* for a batch of 30 officials from MCGM on July 21-22, 2016. The same course was taught again for second batch on July 23-24, 2016.

Dr. Sanjeeva Srivastava, Department of Biosciences and Bioengineering:

The WRCB Clinical Day "Human Health & Infectious Diseases" was held on August 23rd, 2016. Dr. Sanjeeva Srivastava was the convener of the event.

The event aimed at encouraging collaboration between scientists and clinicians to solve real clinical problems and also provided a platform for students to engage with clinicians and showcase their research in the field.

Publications

Prof. Ambarish Kunwar, Department of Biosciences and Bioengineering published a paper entitled *Bajarang Vasant Kumbhar, Anubhaw Borogaon, Dulal Panda and Ambarish Kunwar, Exploring the Origin of Differential Binding Affinities of Human Tubulin Isotypes for DAMA-colchicine using Homology Modelling, Molecular Docking and Molecular Dynamics Simulation"* in PLoS ONE 11(5): e0156048.

Prof. Ambarish Kunwar, Department of Biosciences and Bioengineering published a paper entitled *"Sliding of microtubules by a team of dynein motors: Understanding the effect of spatial distribution of motor tails and mutual exclusion of motor heads on microtubules"* in International Journalof Modern Physics C (IJMPC) DOI: http://dx.doi.org/10.1142/S0129183116501370.

Prof. Y. M. Desai, Department of Civil Engineering, presented an invited paper entitled *"Multi-model finite element approach for stress analysis of composite laminate"* at the 7th International Conference on Computational Methods (ICCM2016) organized at University of California, Berkeley, USA during August 1-4, 2016.

Prof. A.K. Dikshit and **Prof. R.S. Patil,** Centre for Environmental Science and Engineering, published a paper along with Mr. Awkash Kumar and Others titled *"Assessment of impact of unaccounted emission on ambient concentration using DEHM and ADRMOD in combination with WRF"* in Journal of Atmospheric Environment, August 2016 issue.

Prof. A.K.Dikshit and **Prof. R.S.Patil**, Centre for Environmental Science and Engineering, published a paper along with Mr. Awkash Kumar and others titled *"Vehicular pollution modelling using operational street pollution model (OSPM) for Chembur, Mumbai, India in Journal of Environmental Monitoring and Assessment"*, June 2016 issue.

Books by Prof. B. V. Limaye, Department of Mathematics, titled *"Linear functional analysis for scientists and engineers Springer"* (http://www.springer.com/us/book/9789811009709) and by **Prof. A.S. Khanna**, Department of Metallurgical Engineering & Materials Science, titled *"High temperature corrosion, World Scientific"* (http://www. worldscientific. com/worldscibooks/10.1142/9573) has been published.

Dr. Kirankumar S. Momaya, SJM School of Management, published a paper titled '*City clusters and break-out in corporate competitiveness: Patterns and perspectives focusing on innovation capabilities and India'* in Competitiveness Review: An International Business Journal, 26(4), pp.415 – 434.

Publications/poster presentation by Dr. Sanjeeva Srivastava, Dept of Biosciences and Bioengineering:

Ravinder Kumar and **Sanjeeva Srivastava** published a paper "Quantitative proteomic comparison of stationary/G0 phase cells and tetrads in budding yeast" in Scientific Reports 6 (August 2016): 32031. doi:10.1038/srep32031. [Epub ahead of print].

Rekha Jain, Apurva Atak, Avani Yeola and **Sanjeeva Srivastava** published a paper "Proteomic level changes associated with S3I201 treated U87 glioma cells" in Journal of Proteomics (August 2016) doi: 10.1016/j.jprot.2016.08.011. [Epub ahead of print].

Apoorva Venkatesh, Sandip K Patel, Sandipan Ray, Jayanthi Shastri, Gangadhar Chatterjee, Sanjay K Kochar, Swati Patankar and **Sanjeeva Srivastava** published an article "Proteomics of Plasmodium vivax malaria: new insights, progress and potential" in Expert Review of Proteomics 13, no. 8 (August 2016): 771–82. doi: 10.1080/14789450.2016.1210515.

Apurva Atak, Shuvolina Mukherjee, Rekha Jain, Shabarni Gupta, Vedita Anand Singh, Nikita Gahoi, Manubhai K.P. and **Sanjeeva Srivastava** published an article "Protein microarray applications: Autoantibody detection & Post-translational modification" in Proteomics (July 2016) doi: 10.1002/pmic.201600104. [Epub ahead of print].

Vineeta Rai, Anbarasu Karthikaichamy, Debasish Das, Santosh Noronha, Pramod P Wangikar, and **Srivastava Sanjeeva** published a paper "Multi-omics Frontiers in Algal Research: Techniques and Progress to Explore Biofuels in the Postgenomics World" in Omics: A Journal of Integrative Biology 20, no. 7 (July 2016): 387–99. doi:10.1089/omi.2016.0065.

Apoorva Venkatesh, Sandip Kumar Patel, Jayanthi Shastri, Swati Patankar, Pradipsinh Rathod, **Prof. Sanjeeva Srivastava** presented a poster on *"Proteomics of the neglected malaria parasite, Plasmodium vivax*" at the Gorden Research Conference on drug resistance which was held between July 12-17, 2016 at Biddeford, Maine, USA.

Nikita Gahoi, Darpan Malhotra, Aliasgar Moiyadi, Mayuri N Gandhi and Prof. Sanjeeva Srivastava presented a poster on *"Inter-grade Comparative Proteomic Analysis of Gliomas using Cerebrospinal Fluid"* at the 12th Annual US HUPO Conference, Proteomics: From New Technology to New Biology which was held between March 13-16, 2016 at Boston, MA, USA.

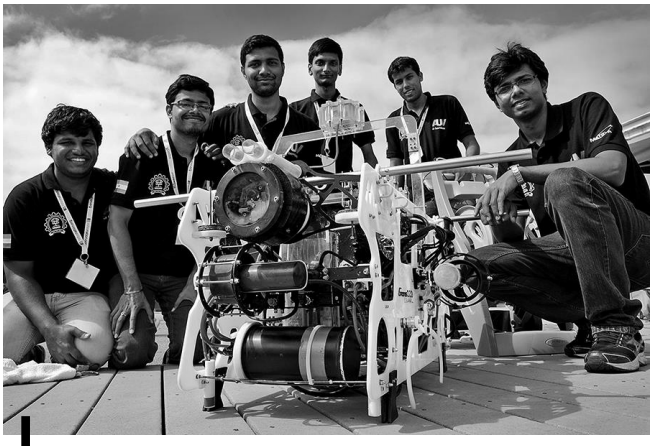
Student News

AUV 'Matsya' Grabs Second Position in AUVSI Robosub 2016

IIT Bombay's autonomous underwater vehicle (AUV) 'Matsya' has secured the second position in AUVSI Robosub 2016. It was adjudged the best performance by an Asian team. The team beat six-time winner Cornell University but lost the first position by a small margin to Caltech University

submarine to successfully attempt two of the most complicated tasks. Also, it was the only AUV able to decide whether it has successfully completed a task or not and re-attempt if required. This was possible only because of several hours of testing put in by the team to make Matsya sufficiently intelligent.

Some other tasks that Matsya performed efficiently include identifying colored objects, locating sound sources, dropping markers and shooting torpedoes. Matsya was the only team to attempt all tasks barring one. As a result, Matsya received accolades from the competition organizers.



IIT Bombay Students' team with 'Matsya'

This year, the Robosub competition was held during July 27-31 in San Diego, California. More than 45 universities from around the world competed to create the most effective autonomous submarine. The teams were scored on their designs, technological innovations and performance in a series of obstacle courses. What makes this competition really challenging is that the robots are autonomous, their actions are pre-programmed and they are on their own to complete the objectives without any intervention from the teams.

AUV-IITB's Matsya qualified on the first day itself, performed exceptionally in the semi-finals and finals without any retries, In fact, Matsya was the only

AUV-IITB's journey in this competition started just five years ago with a small group of students who shared a passion for underwater robotics. The first vehicle grabbed many eyeballs as a debutante but had a lot of scope for improvements. The stability, robustness and capability of the AUV has improved in the following years. While progressing and developing such underwater vehicles, the main difficulties which arise are underwater position control and waterproofing of the submarine. Making the vehicle intelligent enough to be able to take independent decisions is another seemingly-impossible task. After years of development, the endurance of the submarine has increased six-fold. This is an accomplishment on its own. Bagging the second position in the world has motivated the team even more. The team members have now set their eyes set on bagging the first position by creating the best AUV in the world.

IIT Bombay team stood fourth in Intelligent Ground Vehicle Competition – 2016

Students Team from IIT Bombay in Intelligent Ground Vehicle Competition (IGVC) - 2016

Intelligent Ground Vehicle Competition is a coveted annual international robotics competition organized by AUVSI at Oakland University, Michigan. This year, a student team from IIT Bombay participated in the 24th edition of prestigious Intelligent Ground Vehicle Competition, international robotics competition organized by AUVSI at Oakland University, Michigan, USA during June 3-6, 2016. They stood fourth in the *Basic Auto-Nav Challenge* and successfully qualified as one of the five teams to appear in Advance Auto-Nav Challenge. The vehicle name for the competition was SeDriCa (inspired from Self Driving Car).

This competition was based on navigating a robot in a 700-ft course autonomously. The inputs for the vehicle were the navigation GPS points. The sensors mounted on the vehicle include LiDAR, Camera, GPS, IMU, Encoders and UltraSonics. The vehicle has the capability to simultaneously create map and localize in the map (SLAM), Path Planning and Motion Planning. During the course of the competition, it was noticed that the software base of the vehicle was quite robust with fast and state-of-the-art Planning, Mapping and Localization algorithms. The major problem during the competition was observed in some
Image Processing codes which were lacking the capability of undertaking the eccentric weather conditions into consideration. The team will focus on their weakness during the next course and will try to win the Grand Prize next time.

The team has also geared up for Mahindra RISE Driverless Car Challenge and has cleared three out of five stages of the challenge. They have won Mahindra E2O and have started working on the vehicle towards making it riderless.

Below are the details about the IIT Bombay students who participated in Intelligent Ground Vehicle Competition (IGVC) – 2016:

Arpit Gupta, *5th Year DD, Dept of Mechanical Engineering, Team Leader*

Shubham Jain, *4th Year UG, Department of Mechanical Engineering, Vehicle Assembly, Specialist*

Rishabh Choudhary, *3rd Year UG, Department of Chemical Engineering, Path Planning Specialist*

Ankit Sharma, *3rd Year UG, Department of Aerospace Engineering, Electronics Specialist*

Ajay Kumar R, *3rd Year UG, Department of Mechanical Engineering, Image Processing Specialist*

Akash Kishore, *3rd Year DD, Department of Mechanical Engineering, Mapping Specialist*

Tejas Kotwal, *3rd Year UG, Department of Mechanical Engineering, Localization Specialist*

e-Yantra Robotics Competition (eYRC-2016)

The fifth edition of the **e-Yantra Robotics Competition** (eYRC-2016), a part of the e-Yantra project, has received an overwhelming response within a few days of its launch on August 1, 2016. Over 1000 teams (4000 students) from colleges across the country have already registered for the current edition of this unique competition where, (i) students register as a team of 4 and take an online selection test (ii) selected teams are given a problem specified as a theme in a rule book (iii) teams get a robotic kit along with accessories to solve the problem and (iv) teams solve the problem in a step-by-step manner being taken through the project life cycle in a systematic way.

This competition has seen exponential growth in the number of registrations since its inception in 2012. Last year, the competition registered 19,568 students from 589 colleges from 28 states of the country. An unique feature of this competition is that it emphasizes "learning" more than "winning". The competition format is such that every participating student learns concepts in Embedded systems and Robotics in a step-by-step manner during the course of the competition over a period of 4-5 months.

"*This means that even students with no prior exposure can learn the concepts and come up with innovative solutions. Thus, this competition is used to impart Project Based Learning (PBL) through hands-on experiments on a robotic platform where students don't pay any registration fee nor pay money to buy the robotic kit. In addition to learning concepts related to micro-controller programming students also learn soft skills such as teamwork, video-editing and presentation skills*," informed Prof. Kavi Arya, Principal Investigator, e-Yantra project.

eYRC-2016 aims to bring awareness to interesting concepts in Embedded systems and Robotics problems in Space exploration, and other concepts through themes that engage participants to solve problems in these vital domains.

This year in order to provide an opportunity to a larger number of qualifying teams, we have themes under three (3) **Tracks,** namely **Space Exploration**, **Build**ing **a Bot** and **Play a Song**.

The e-Yantra project is sponsored by the Ministry of Human Resource Development (MHRD), under the National Mission for Education through ICT (NMEICT) to provide hands-on learning infrastructure to students who have limited access to labs and mentors. Professors Kavi Arya and Krithi Ramamritham of the Computer Science and Engineering Department, Indian Institute of Technology Bombay conceptualized the e-Yantra project after years of experience in teaching embedded systems.

The e-Yantra project believes that a competition framework harnesses the intellectual ability of young Indians to create practical solutions to real problems. The domains range across manufacturing, defence, smart homes, city maintenance and service industries. Rapid economic growth implies a huge need for automation and related skills especially in a world dominated by the "Internet of Things" and other such technology. The goal of the IT-based e-Yantra project is to, in a scale-able manner, help create a cadre of engineers that can address the problems that a rapidly growing economy such as India so sorely needs.

IITB, being an academic institution, promotes and encourages the use of Open Source platforms. Hence, the material developed in the project is licensed under a Creative Commons License.

Workshop on Drupal

A One day Workshop on ***"Drupal"*** was conducted by Spoken Tutorial Project, IIT B on August 28, 2016. This project is part of the National Mission on Education through ICT, funded by MHRD, Government of India.

Drupal is a free and open source Content Management System (CMS) written in PHP. Thousands of websites worldwide rely on Drupal including the official website of FOSSEE Project, IIT Bombay website, etc. Drupal allows novice web authors to quickly publish their website without any knowledge of writing code or designing pages, while still giving advanced developers an extensive API to hook into the Drupal core and enhance it to any desired objective. The Introductory talk was addressed by Prof. Kannan M. Moudgalya, Project Investigator - Spoken Tutorial Project.

Appointments

Dr. Sai Vinjanampathy,

Department of Physics, has been appointed as Assistant Professor w.e.f. July 4, 2016.

Prof. Nandita Madhavan,

Department of Chemistry, has been appointed as Associate Professor w.e.f July 27, 2016.

Dr. Sharmistha Saha,

Department of Humanities & Social Sciences, has been appointed as Assistant Professor w.e.f. July 1, 2016.

Dr. Santosh N. Jagtap, Centre for Technology in Rural Areas (CTARA), has been appointed as Assistant Professor w.e.f. August 12, 2016.


Retirements on July 31, 2016

Prof. Milind S. Malshe,

Department of Humanities and Social Sciences, retired after 35 years of service.

Prof. Bhaskar Roy, Department of Aerospace Engineering, retired after 31 years of service.


Prof. Vishwakarma Singh,

Department of Chemistry, retired after 27 years of service.

Shri Arun Kalwankar, Producer Cum designer, CDEEP, retired after 24 years of service.


Retirements on August 31, 2016

Dr. P. Mohan Reddy, Sport Officer (SG), Gymkhana, retired after 33 years of service.

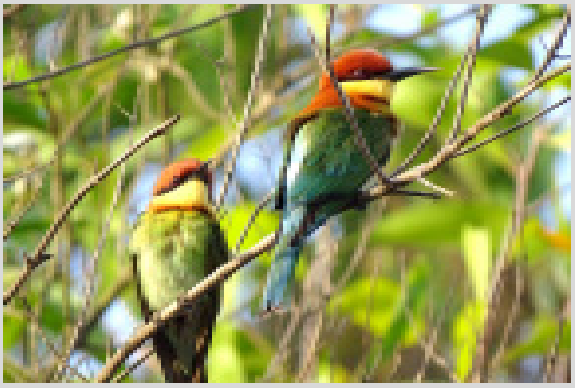

Ms. Rosy Jose, Jr. Superintendent, Hostels, retired after 34 years of service.


Shri Manubhai B. Solanki, Helper (SG), Computer Science & Engineering, retired after 38 years of service.


Shri Babu S. Waghela, Cleaner, Public Health Office, retired after 37 years of service.


Ms. Manjula K. Solanki, Cleaner, Public Health Office, retired after 11 years of service.


In the Wilderness



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IIT Hospital

salt'n pepper

by Dr. Arun Inamdar

CEP courses scheduled during September and October 2016

No.	Course Title	Course Coordinator / Department	Duration
1	Strategies For Developing Effective E-Learning Course Content	Prof. Sahana V. Murthy Education Technology	September 2 – 3, 2016 (2 days)
2	Continuous Flow Processes	Prof. Anil Kumar Dept. of Chemistry	September 8 - 13, 2016 (6 days)
3	Elements Of Chemical Engineering	Prof. R.K. Malik Dept. of Chemical Engineering	September 8 – 15, 2016 (8 days)
4	Advanced Digital Signal Processing for Engineers.	Prof. V.M. Gadre Dept. of Chemical Engineering	September 12 – 14, 2016 (3 days)
5	Urban Drainage Management: State-of-the Art 2016	Prof. Kapil Gupta Dept. of Civil Engineering	September 15 - 17, 2016 (3 days)
6	User Studies By Contextual Inquiry	Prof. Anirudha Joshi Dept. of Industrial Design Centre	September 16 – 19, 2016 (4 days)
7	Expo Info Design	Prof. Ravi Poovaiah Dept. of Industrial Design Centre	September 22 – 24, 2016 (3 days)
8	Biology For Engineers	Prof. Ambarish Kunwar Dept. of Biosciences & Bioengineering	September 25 – 27, 2016 (3 days)
9	Corrosion And Its Control Issues For Steels And Stainless Steels	Prof. V.S. Raja Dept. of Metallurgical Engineering & Materials Science	October 3 – 4, 2016 (2 days)
10	Advances in Control Systems	Prof. Ravindra D. Gudi Dept. of Chemical Engineering	October 17 – 21, 2016 (5 days)

campus diary

July - August 2016

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(email : campusdiary@iitb.ac.in)

BOOK POST