



# Campus diary

August - September 2014

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INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

## 52<sup>nd</sup> Convocation held at IIT Bombay



Senate Members on the dias, (in Centre) Dr. R.A. Mashelkar, National Research Professor, CSIR - National Chemical Laboratory at the 52<sup>nd</sup> Convocation, IIT Bombay and the President of Global Research Alliance.

Indian Institute of Technology Bombay (IIT Bombay) held its 52<sup>nd</sup> Convocation on August 9, 2014. **Dr. R.A. Mashelkar, National Research Professor, CSIR-National Chemical Laboratory and the President of Global Research Alliance**, was the Chief Guest for the occasion and delivered the Convocation Address. The Institute awarded degrees to **2256** students on their successful completion of the academic programmes at the Convocation, this year.

In his address, Dr. Mashelkar posed a challenge to the graduating students. He said, "Making high technology work for the rich is easy. Making low technology

*work for the poor is easy. But making high technology work for the poor is difficult... Can you (IITians) help in harnessing truly sophisticated science or technology or truly creative non-technological innovations to achieve quality goods and services that are affordable to many, not just a privileged few?"*

Emphasizing on innovation, he further added, "The 'I' in India should not stand for imitation and inhibition, it should stand for innovation. The 'I' in IIT, the 'I' in industry must stand for innovation. The 'I' in every individual Indian must stand for innovation. It is only this innovative India that will signal to the

*rest of the world, that we are not a hesitant nation, unsure of our place in the new global order, but a confident one, that is raring to go, and occupy its rightful place in the comity of nations".*

The graduating students this year included **227** PhD students [including **216** PhDs, **6** Dual Degree (M.Tech.+ Ph.D.) and **5** Dual Degree (M.Sc.+ Ph.D.)], 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 **27** Research Scholars were selected for the 'Award of Excellence in Ph.D. Thesis' for the year 2014, as compared to 25 awards in the year 2013 and 20 awards



Raaz Dwivedi receiving President of India Medal from Dr. R.A.Mashelkar.

Washington University in St. Louis, in near future.

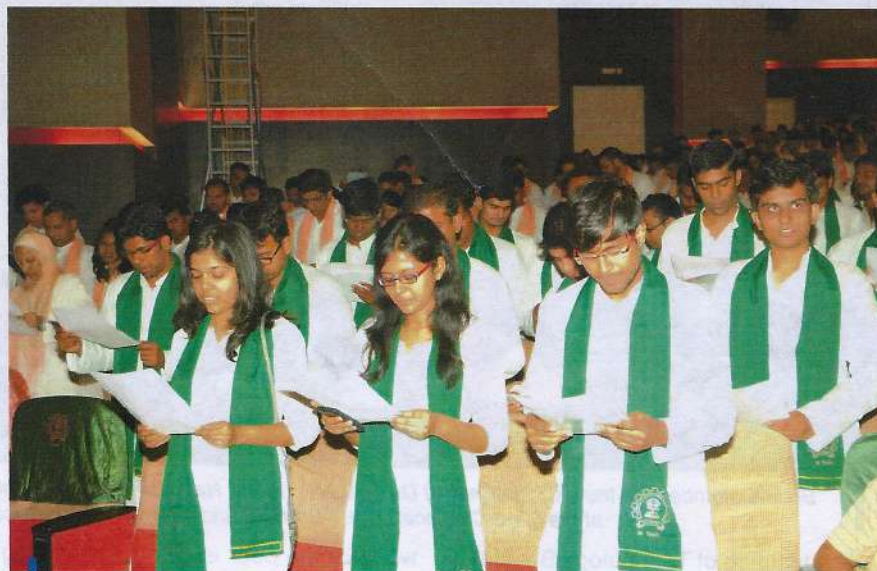
This year, eight students were presented Gold medals for their exemplary performance. The 'President of India Medal' was bestowed on Mr. Raaz Dwivedi from Department of Electrical Engg. The 'Institute Gold Medal' was awarded to Mr. Rahul Sharma, Department of Physics and the 'Dr. Shankar Dayal Sharma Gold Medal' was conferred on Ms. Ashima Mittal from Department of Civil Engineering. Additionally, five more students were presented Gold Medals sponsored by donors. This year, 43 students were presented Silver medals on the occasion.

The occasion was graced by the presence of Dr. Anil Kakodkar, Chairman, Board of Governors, IIT Bombay, Senior functionaries from Monash University, Australia, members of Board of Governors and several other distinguished guests from India and abroad, besides the graduating students and their proud parents.

in the year 2012. In addition, 8 joint Ph.D. degrees, in association with Monash University, were also conferred by the Chancellor of Monash University, Prof. Alan Finkel, present on the occasion. Besides these, 4 M.Sc by Research, 15 M.Phil., 619 M.Tech., 114 M. Mgmt., 57 M.Des., 227 five-year B.Tech.+M.Tech. Dual Degree, 15 PGDIIT, 14 five-year integrated M.Sc., 198 two-year M.Sc. and 528 B.Tech. Degrees, were awarded at the Convocation.

Reporting Institute's performance for the year 2013-14, Prof. Devang V. Khakar, Director of the Institute informed that IIT Bombay continues to be a sought-after destination for UG and PG studies. "Among 16 IITs in the country, 44 out of top 50 rank holders and 58 of top 100 rank holders in JEE 2014 have joined IIT Bombay and 9 of the top 10 All-India JEE rank holders chose the Institute. Similar trends are observed for the candidates qualifying in other entrance examinations as well," he said. Prof. Khakar also announced that the Institute has recently added a 'Centre

for Excellence in Steel Technology' and is in the process of establishing 'Tata Centre for Technology & Design' and 'Desai Sethi Centre for Entrepreneurship', besides offering a Joint Executive MBA program with



Graduating Students taking Oath

### List of Medals and Prizes

**President of India Medal  
(for the year 2013-14)**

Raaz Dwivedi  
Department of Electrical Engineering (B.Tech)

**Institute Gold Medal  
(for the year 2012-13)  
B.Tech (Dual Degree)**

Rahul Sharma  
Department of Engineering Physics

**Institute Silver Medal  
(for the year 2013-14)**

**Bachelor of Technology (B.Tech)**  
Department: Aerospace Engineering  
Akshay Shetty  
Department: Chemical Engineering  
Akanksha Thawani  
Department: Civil Engineering  
Singh Namrata AC

**Department of Computer Science & Engineering**

Vipul Singh

**Department: Electrical Engineering**

Raaz Dwivedi

**Department: Mechanical Engineering**

Mehta Malhar Saurabh

**Department: Metallurgical Engineering & Materials Science**

Mandaliya Aditya Manhar

**Department: Engineering Physics**

Chirag Modi

**Master of Science (M.Sc.) Programme:**

**Department: Earth Science**

Anima Mahanta (Applied Geology)

Vaibhav Jain (Applied Geophysics)

**Department: Chemistry**

Ashesh Ghosh (2 year M.Sc.)

Pritha Verma (5 year Int. M.Sc.)

**Department: Mathematics**

Jyoti Dasgupta (Mathematics)

Diby Ghosh (Applied Statistics and Informatics)

**Department: Physics**

Richa Mitra

**Department: Biosciences & Bioengineering**

Gadre Purna Sham (Biotechnology)

**Dual Degree Programme**

**(B.Tech + M.Tech)**

**Department: Aerospace Engineering**

Bendarkar Mayank Vasant

**Department: Chemical Engineering**

Patkar Shalmali Suresh

**Department of Civil Engineering**

Soumil Agrawal

**Department of Electrical Engineering**

Tejas Naphade

**Department of Mechanical Engineering**

Pinkesh Malhotra

**Department of Metallurgical Engineering & Materials Science**

Sheshank Kumar

**Department: Engineering Physics**

Rahul Sharma

**Department: Energy Science & Engineering**

Aakash R. Jhaveri

**Master of Technology (M.Tech)**

**Department: Aerospace Engineering**

Kadam Sudin Rajaram

**Department: Chemical Engineering**

Debirupa Mitra

**Department: Civil Engineering**

Alakananda Sen

**Department: Computer Science & Engineering**

Ankit Gupta

**Department: Electrical Engineering**

Shovan Maity

**Department: Mechanical Engineering**

Pradeep Vaijanath Biradar

**Department: Metallurgical Engineering & Materials Science**

Chandrashekhar Prakash Savant

**Department: Biosciences & Bioengineering**

Kapish Gupta (Biomedical)

**Department: Centre for Environmental Science & Engineering**

Nitish Prashant Kholgade

**Department: Earth Science**

Pangul Rajan Narayanrao (Geoinformatics and Natural Resources)

Anindya Nandi (Earth Science)

**Department: Energy Systems Engineering**

Kolhe Pushkar Sarang

**Department: Industrial Engineering & Operations Research**

J. Manish Punjabi

Pawar Swapnil Vinayak (Materials, Manufacturing & Modelling)

**Department: Systems & Control Engineering**

Rakhi R

Nishant Maloo (Technology & Development)

**Master of Design**

**Department: Industrial Design Centre**

Govind Janardhanan (Animation)

**Master of Philosophy**

**Department: Humanities and Social Sciences**

Chanini Lokho (Planning & Development)

**Master of Management**

**Department: SJM School of Management**

Bachani Hitendrakumar Ishwarlal

**Other Medals:**

**Miss Jayati Deshmukh Memorial Gold Medal**

Vipul Singh, Computer Science & Engineering

**Rajit Bhagwati Memorial Gold Medal**

Nitish P Kholgade, Centre for Environmental Science & Engg.

**Dr. Shankal Dayal Sharma Gold Medal**

Ashima Mittal, Civil Engineering

**Hindi Vidya Bhavan Gold Medal**

Bachani Hitendrakumar Ishwarlal, School of Management

**Vidyasagar Nehra Gold Medal**

Singh Namrata AC, Civil Engineering

**Prof. Madhav Kulkarni Lt. Col (R) Gold Medal**

Singh Namrata AC, Civil Engineering

**Prizes**

**Prof. K C Mukherji Award**

Raaz Dwivedi

**Tulsiram Devidayal, P.M. Natu, Damle Trust Prize**

Pradeep Vaijanath Biradar

**Prof. R.P. Singh Memorial Prize (B.Tech)**

Ishita Dasgupta

**Chandrashekhar Prize**

Akanksha Thawani

**Shri R Vembu Iyer Memorial Prize**

Anima Mahanta

**Dilip R Limaye Academic Excellence Award**

Raaz Dwivedi

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

Ashesh Ghosh

**Dr. Gargi Vishnoi Memorial Prize**

Hinge Vijaya Kumar

**Prof. Hiralal Memorial Award**

Ashesh Ghosh

Pritha Verma

**Shri Ashok Chaturvedi Memorial Prize (M.Tech)**

Pradeep Vaijanath Biradar

**Manjula Bagmal Parikh Memorial Foundation**

**Trust Prize (Silver Medalist)**

Singh Namrata AC

Vipul Singh

Raaz Dwivedi

Mehta Malhar Saurabh

**Prof. M.N Gopalan Prize (M.Sc.)**

Diby Ghosh

**Prabhulal Bhatnagar Memorial Prize**

Daisy Dahiya

Chandan Pal

**Mrs. Rama Mathur Memorial Prize**

Jyoti Dasgupta

**Ajit Shelt Award**

Shovan Maity

**Bhavesh Gandhi Memorial Prize**

Meghana Sreenivasan

Shinibali Bhtattacharyya

Nilaj Chakrabarty

**Prof. K.C. Khilar PhD Award**

Srinivasan N.R

**Prof. K.C. Khilar Prize (M.Tech)**

Uma K Shankar

**R.G. Manudhane M.Tech Student Excellence Award (Best M.Tech Thesis)**

Shanu Jain

**R.G. Manudhane PhD Excellence Award**

Priya Gambhire

**Akshay Dhoke Memorial Award**

Tejas Naphade

**Indira Manudhane Student Excellence Award**

Vibhore Jain

**Mr. Pranab Ranjan Sen Award**

Mehta Kunal Sunil

**Walchand Hirachand Gold Medal**

Mandaliya Aditya Manhar

The following students were awarded the Academic Prizes for the year 2013-14.

**II year B.Tech / Dual Degree**

Sr. No.	Name	Prize	Value of prize	Department
1	A Ravi Chandra	I	Rs.3000/-	Computer Sc. & Engg
2	K Krishna Harsha Reddy	II	Rs.2000/-	Computer Sc. & Engg
3	Patankar Aniket Sanjay	Additional	Rs.2000/-	Mechanical Engineering
4	Rana Ranvir Bharatsinh	Additional	Rs.2000/-	Electrical Engineering
5	Samarth Mishra	Additional	Rs.2000/-	Engineering Physics
6	Anchit Gupta	Additional	Rs.2000/-	Mechanical Engineering
7	Parth Shah	Additional	Rs.2000/-	Computer Sc. & Engg
8	Aman Goel	Additional	Rs.2000/-	Computer Sc. & Engg
9	Jay Mardia	Additional	Rs.2000/-	Electrical Engineering
10	Anmol Añora	Additional	Rs.2000/-	Computer Sc. & Engg
11	Shorya Consul	Additional	Rs.2000/-	Electrical Engineering

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

**B.Tech**

Sr. No.	Name	Prize	Value of prize	Department
1	Naveen Himthani	I	Rs.3000/-	Aerospace Engineering
2	Kunal Garg	II	Rs.2000/-	Aerospace Engineering
3	Maliekkal Vineet Jeco	I	Rs.3000/-	Chemical Engineering
4	Prafful Bhansali	II	Rs.2000/-	Chemical Engineering
5	Karan Gupta	I	Rs.3000/-	Civil Engineering
6	Rounaq Basu	II	Rs.2000/-	Civil Engineering
7	Bijoy Singh Kochar	I	Rs.3000/-	Computer Sc. & Engg

8	Devdeep Ujjal Ray	II	Rs.2000/-	Computer Sc. & Engg
9	Vadlamani Srikrishna	I	Rs.3000/-	Electrical Engineering
10	Pulkit Tandon	II	Rs.2000/-	Electrical Engineering
11	Deepak Dilipkumar	I	Rs.3000/-	Mechanical Engineering
12	Jivani Kartik Nagjibhai	II	Rs.2000/-	Mechanical Engineering
13	Rakshit Jain	I	Rs.3000/-	Met. Engg. & Mat. Sc
14	Vinay Subramanian	II	Rs.2000/-	Met. Engg. & Mat. Sc
15	Rushabh Kapasi	I	Rs.3000/-	Engineering Physics
16	Shiveshwarkar Charuhas Waman	II	Rs.2000/-	Engineering Physics

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

Sr. No.	Name	Prize	Value of prize	Department
1	Parth Sarthi Sharma	I	Rs.3000/-	Chemical Engineering
2	Aman Mantry	II	Rs.2000/-	Chemical Engineering
3	Ojas Apoorva Kanhere	I	Rs.3000/-	Electrical Engineering
4	Shubham Singhal	II	Rs.2000/-	Electrical Engineering
5	Lalwani Anand Pradeep	I	Rs.3000/-	Mechanical Engineering
6	Shah Sapan Kalpeshkumar	II	Rs.2000/-	Mechanical Engineering
7	Aniruddha Singh Lakhnot	I	Rs.3000/-	Met. Engg. & Mat. Sc
8	Hussain Motiwala	II	Rs.2000/-	Met. Engg. & Mat. Sc
9	Chintakindi Shravan Kumar Reddy	I	Rs.3000/-	Energy Science & Engineering
10	Manepalli Akhil	II	Rs.2000/-	Energy Science & Engineering
11	Himanshu Nigudkar	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

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

Sr. No.	Name	Prize	Value of prize	Department
1	Ashwin R	I	Rs.3000/-	Aerospace Engineering
2	Arkopal Dutt	II	Rs.2000/-	Aerospace Engineering
3	Darshan Vikram Shah	I	Rs.3000/-	Chemical Engineering
4	Jangareddy Sravya	II	Rs.2000/-	Chemical Engineering
5	Pratik Sharad Deogekar	I	Rs.3000/-	Civil Engineering
6	Sachin Garg	II	Rs.2000/-	Civil Engineering
7	Ayush Kanodia	I	Rs.3000/-	Computer Sc. & Engg
8	Mohit Gupta	II	Rs.2000/-	Computer Sc. & Engg
9	Pooniwala Gaurav Triveshkumar	I	Rs.3000/-	Electrical Engineering
10	Chilamkurthy Sasank	II	Rs.2000/-	Electrical Engineering
11	Lavish Ordia	I	Rs.3000/-	Mechanical Engineering
12	Tamhankar Mihir Subodh	II	Rs.2000/-	Mechanical Engineering
13	Devansh Ashish Sanghavi	I	Rs.3000/-	Met. Engg. & Mat. Sc
14	Jain Nishant Suresh Kevalchand	II	Rs.2000/-	Met. Engg. & Mat. Sc
15	Aditi Udupa	I	Rs.3000/-	Engineering Physics
16	Jash Banker	II	Rs.2000/-	Engineering Physics

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

Sr. No.	Name	Prize	Value of prize	Department
1	Monimoy Bujarbaruah	I	Rs.3000/-	Aerospace Engineering
2	Kshitij Jayakrishnan	I	Rs.3000/-	Chemical Engineering
3	Rohit Garg	II	Rs.2000/-	Chemical Engineering
4	Kameshwar Patel	I	Rs.3000/-	Civil Engineering
5	Patil Sukanya Vijaysing	I	Rs.3000/-	Electrical Engineering
6	Sarode Akshay Sanjay	II	Rs.2000/-	Electrical Engineering
7	Chhaya Bhavin Pravin	I	Rs.3000/-	Mechanical Engineering
8	Savla Nevil Bharat	II	Rs.2000/-	Mechanical Engineering
9	Avijit Singh	I	Rs.3000/-	Met. Engg. & Mat. Sc
10	Vishwas Goel	II	Rs.2000/-	Met. Engg. & Mat. Sc
11	Ankur Agrawal	I	Rs.3000/-	Engineering Physics
12	Iyengar Pranit Shrinivas	I	Rs.3000/-	Energy Science & Engineering
13	Anand Agarwalla	II	Rs.2000/-	Energy Science & Engineering

**5 yr. Int. M.Sc.**

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

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

Sr. No.	Name	Prize	Value of prize	Department
1	Awale Vaibhav Gundappa	I	Rs.3000/-	Aerospace Engineering
2	Apeksha Bandi	I	Rs.3000/-	Chemical Engineering
3	Pingle Gaurav Reddy	II	Rs.2000/-	Chemical Engineering
4	Suryakant Agrawal	I	Rs.3000/-	Civil Engineering
5	S Vignesh	I	Rs.3000/-	Electrical Engineering
6	Shibani Santurkar	II	Rs.2000/-	Electrical Engineering
7	Bharat Monga	I	Rs.3000/-	Mechanical Engineering
8	Shahane Shantanu Shashank	II	Rs.2000/-	Mechanical Engineering
9	Malav S Simaria	I	Rs.3000/-	Met. Engg. & Mat. Sc
10	Kavle Pravin Narendra	II	Rs.2000/-	Met. Engg. & Mat. Sc
11	Chatterji Niladri Upal	I	Rs.3000/-	Engineering Physics
12	Pranav Ajit Kumar Shetty	I	Rs.3000/-	Energy Science & Engineering
13	Abhimanyu Dhariwal	II	Rs.2000/-	Energy Science & Engineering

**5 yr. Int. M. Sc.**

Sr. No.	Name	Prize	Value of prize	Department
1	Srimukh Prasad V K	I	Rs.3000/-	Chemistry
2	Saaz Sakrikar	II	Rs.2000/-	Chemistry

**II year M. Sc. (2 year)**

Sr. No.	Name	Prize	Value of prize	Department
1	Sakshi Singhal	I	Rs.3000/-	Applied Geophysics
2	Kartik Verma	I	Rs.3000/-	Applied Statistics & Informatics
3	Mayank Jain	II	Rs.2000/-	Applied Statistics & Informatics

4	Ilina Bareja	I	Rs.3000/-	Biosciences & Bioengineering
5	Pooja Agarwal	I	Rs.3000/-	Chemistry
6	Santanu Singha	II	Rs.2000/-	Chemistry
7	Sabyasachi Bhowmick	I	Rs.3000/-	Earth Sciences
8	Samarpita Sarkar	II	Rs.2000/-	Earth Sciences
9	Roopayan Ghosh	I	Rs.3000/-	Physics
10	Heerak Banerjee	II	Rs.2000/-	Physics
11	Kriti Goel	I	Rs.3000/-	Mathematics
12	Iyer Venkitesh Srihari	II	Rs.2000/-	Mathematics

## OTHER PRIZES

Name of the Prize	Name of the Awardee	Total Amount
Shri Rakesh Mathur Excellence Award	Pooniwala Gaurav Triveshkumar	<b>Rs. 1,00,000/-</b> III yr. UG student.
Shri T.K. Subramanian Prize For Academic Excellence	Kulkarni Chinmay Sameer	<b>Rs.1000/-</b> III Yr. B.Tech., Mech.Engg.
Urvish Medh Memorial Prize (For Electrical Engg.)	Bavineni Eswar	<b>Rs.2000/-</b> I Yr. B.Tech., Electrical
	Rana Ranvir Bharatsinh	<b>Rs.2000/-</b> II Yr. B.Tech., Electrical
	Shubham Chandak	<b>Rs.2000/-</b> III Yr. B.Tech., Electrical
	Pooniwala Gaurav Triveshkumar	<b>Rs.2000/-</b> IV Yr. B.Tech., Electrical
Prof. M.N. Vartak Memorial Prize	Kartik Verma	<b>Rs.6000/-</b> II yr. M.Sc. Applied Statistics & Informatics
Mrs. Rama Mathur Memorial Prize	Kriti Goel	<b>Rs.2000/-</b> II yr. M.Sc., Mathematics
Aditya Choubey Memorial Prizes	Rana Ranvir Bharatsinh	<b>Rs. 4000/-</b> II yr. B.Tech., Electrical
S C Mehrotra Prize	Prajwal.K.A	<b>Rs.10000/-</b> II yr B.Tech., Civil
	Karan Gupta	<b>Rs. 10000/-</b> III yr B.Tech., Civil
	Pratik Sharad Deogekar	<b>Rs. 10000/-</b> IV yr B.Tech., Civil
Akshay Dhoke Memorial Award	M Sai Sumanth	<b>Rs. 5000/-</b> IV yr Dual Degree, Electrical
	Porandla Prudvi	<b>Rs.5000 /-</b> IV yr Dual Degree, Electrical
Prof. A.K. Mallik Award	Kamat Ugam Alias Vassudeo Pradeep	<b>Rs.5000/-</b> III yr. B.Tech, Met. Engg. & Mat. Sc.

## Lifetime Achievement Award 2013-14' bestowed on Prof. Deepak B. Phatak

IIT Bombay confers Lifetime Achievement Award on its faculty member who has served the Institute at least for 20 years with distinction for a major part of their career as a faculty member, and who has made outstanding contributions towards teaching, research, industrial interaction and institution building. This year Lifetime Achievement Award 2013-14' was conferred on **Padma Shri Prof. Deepak B. Phatak**, Department of Computer Science & Engineering, in recognition of his outstanding contributions as teacher, researcher and administrator. The award was presented by Dr. R.A. Mashelkar, National Research Professor, CSIR-National Chemical Laboratory and the President of Global Research Alliance, at the Institute's 52<sup>nd</sup> Convocation Day function on August 9, 2014.



Padma Shri. Prof. Deepak B. Phatak, receiving Lifetime Achievement Award from Dr. R.A. Mashelkar in presence of Dr. Anil Kakodkar and Prof. D.V. Khakhar

Accepting the award, Prof. Phatak said, "This Institute has given me everything that a teacher can ever hope to get in life. Academic freedom, willingness to experiment, to try new avenues of education and research, to conceive and execute large projects with possible

national impact; and a great support for all these, anytime, every time. That, my friends, is my IIT Bombay." He further added, "I have also held that being a teacher cannot just be one's profession, but has to be one's 'Dharma'. I have tried to live by my Dharma, I have honestly tried to walk the talk. I started my career with a few vows. One was that I shall never serve a foreign flag in my life; and the other was that I shall retire or die from IIT Bombay, whichever happens earlier. I am still alive, and by God's grace, I hope to continue to serve my Institution and my nation, till I breathe my last."

## Centenary Day Celebrated

IIT Bombay celebrated the birth centenary day of Prof. N. R. Kamath, on September 6, 2014. Professor Kamath was not only a great teacher and Guru but also a visionary administrator. As the first Deputy Director of the Institute (in its formative years), he was in charge of devising the Curriculum for all five branches of engineering, namely Chemical, Civil, Electrical, Mechanical and Metallurgy, which were then offered at IIT Bombay. As a tribute to the pioneering and visionary leadership of Professor N R Kamath, the establishment of a chair professorship in his memory at IIT Bombay was announced during the centenary function.

The celebrations included lecture session on "**Winds of Change in Chemical Engineering – NRK's vision and its relevance today**". This session focused on the winds of change in Chemical Engineering (in the academic and industrial scene) and Prof. Kamath's role in laying the foundation for such transformations to occur. Another session on "**Prof. N. R. Kamath – Reminiscences**" focused on providing a forum for those who have come under the influence of Prof. N. R. Kamath in some way or the other to express their reminiscences of him, was also organised.

Prof. M. M. Sharma, Shri Rajeev Pandia, Prof. A. P. Kudchadkar, Dr. A. N. David, Mr. Sharu Rangnekar, Mr. Pradeep Jaipuria, and Mr. R. Parthasarathy, were the invited speakers for the sessions.

## IIT Bombay ranked at 222<sup>nd</sup> in the World, and No.1 in India

Indian Institute of Technology Bombay has been ranked 222<sup>nd</sup> this year in the QS World University Rankings 2014-15. It has also emerged as India's leading university in the said Rankings. The Institute furthermore, ranked 160 for Academic Reputation and 60 for Employer Reputation. IIT Bombay was at 233<sup>rd</sup> position last year. The Institutes were assessed on four key areas viz. research, teaching, employability and internationalisation.



## IITB beckons students from Bangladesh

In an endeavour towards creating better awareness on educational opportunities available at the Indian Institute of Technology Bombay (IIT Bombay), for students at post-graduation and doctoral levels and forging collaborative relationships with higher educational institutions in Bangladesh, a team of senior officials from IIT Bombay including Director of the Institute, Prof. Devang V. Khakhar, Deputy Director (Academic and Infrastructural Affairs), Prof. Subhasis Chaudhuri and Dean (International Relations), Prof. Rajiv Dusane besides representatives from DAAD (German Academic Exchange Service) visited Bangladesh during September 17-21, 2014.

An interactive session to address the queries of students from Bangladesh, related to academic programmes, infrastructural facilities, accommodation and financial aid available for the students, was also organised by the The High Commission of India in Dhaka during the visit.

DAAD has introduced scholarships for Bangladeshi students, for pursuing M.Tech. in Engineering Systems, Biomedical Engineering, Environmental Science and Engineering, Water Resource Engineering and Technology and Development and Ph.D. in Renewable Energy, Climate Change, Health, Biodiversity and Good

Governance, at IIT Bombay. The scholarships will broadly cover cost of education, air fare, annual study and research subsidy and a monthly stipend. Moreover, students selected for the Ph.D. programme under DAAD scholarship will be able to undertake six months of their research course in Germany.

IIT Bombay in addition, will provide Teaching Assistantships (TA) to those selected for the Ph.D. programmes besides providing them campus accommodation and other facilities. *"IIT Bombay is internationally reputed for its academic programmes as well as research activities. Students from Bangladesh will not merely have excellent opportunities to pursue higher education and research in niche areas but also participate in plethora of co-curricular activities and be a part of vibrant campus life of the Institute,"* said Prof. Khakhar.

The team also visited Khulna University of Engineering and Technology, Khulna; Bangladesh University of Engineering and Technology, Dhaka and University of Dhaka and met the University functionaries to discuss areas of collaboration as well as interacted with the students.

## Human Resource Development Minister visits IIT Bombay



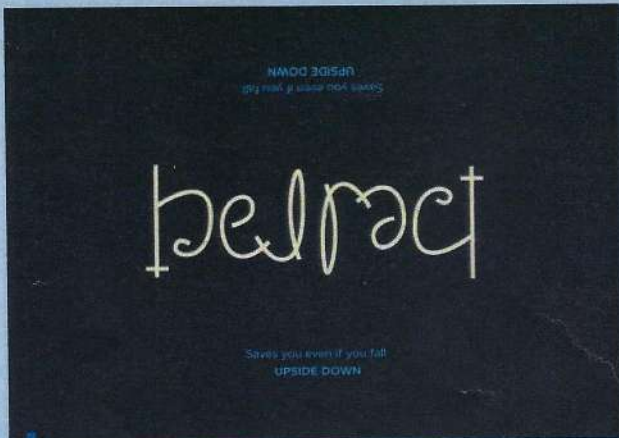
Smt. Smriti Z. Irani, Hon'ble Minister of HRD, addressing IIT Bombay students.



Smt. Irani, interacting with Prof. B.K. Chakravarthy, Head, IDC, Prof. H.S. Pandalai, Dy. Director (FEA) and Prof. D.V. Khakhar, Director, IIT Bombay,

Smt. Smriti Z. Irani, Hon'ble Minister of Human Resource Development, Government of India, visited IIT Bombay for the first time after presuming office, on September 29, 2014 and interacted with the students, faculty and Institute functionaries. During her visit to the Department of Computer Science and Engineering at the Institute, Prof. D.B. Phatak, made a presentation on Mission projects and ET- leading to MOOCs initiative at IIT Bombay. He also briefed on the activities for deploying 'Swayam' (Study Webs of Active-Learning for Young Aspiring Minds)- former's upcoming MOOC platform. She also visited the Affordable Solutions Lab (ASL) and estudio, Nano Lab in the Department of Electrical Engineering and Innovation studio at Industrial Design Centre. Furthermore, Smt. Irani had a lively interaction with the students of the Institute and assured to solve the genuine problems faced by them.

### IIT Bombay students win Kyoorious Design Competition



Typograph designed by IITB Students (Design that read Helmet both front - up & upside down)



(L-R) Mr. Paresh Raut, Mr. Chirag Gandir, and Mr. Parimal Chahande receiving Red Elephant at Kyoorious Design Competition

A students team from IIT Bombay recently secured First position at the Kyoorious Student Design Competition 2014, under the category of Typography. The team members Mr. Paresh Raut, from Department of Mechanical Engineering, Mr. Chirag Gander, from Department of Chemical Engineering and Mr. Parimal Chahande, from Engineering Physics of the Institute, are also pursuing minors and electives at the Industrial Design Centre of IIT Bombay. Their design for publicity through Typography, that would make “helmet wearing a cool act and remind people to do so, every time they ride a bike”, successfully acknowledged the issue of road safety and deaths by bike accidents — which was the task of the competition. The students also won a Red Elephant in the same category for their swirly ambigram that read Helmet both front-up and upside down. The award was presented in Goa on September 13, 2014.

### Independence Day



Independence Day was celebrated on August 15, 2014. The National Flag was unfurled by the Director at the Main Building in IIT Bombay Campus, who also spoke about recent developments at the Institute, on the occasion.

### Hindi Pakhawada



(R-L) Dr. R.Premkumar, Registrar, IIT Bombay, Prof. Satyadev Tripathi, Head of Hindi Department, SNDT Womens University, Mumbai and Shri.K.K.Bajre, DR. (Admn.), IIT Bombay

An annual event, "Hindi Pakhawada" was celebrated during September 14-30, 2014 at the Institute, where competitions in essay writing, shrut lekhan and Hindi translation were organized. *Kavi Sammalen* was held on September 25, 2014. The main function and Prize distribution took place on September 29, 2014. Prof. Satyadev Tripathi, HOD (Hindi Department), S.N.D.T, was the Chief Guest of the main function. He delivered a lecture on "Importance of Official Language Hindi". Dr. R. Premkumar, Registrar and Shri K.K Bajre, DR (Admn.) presented Certificates and Cash awards to the winners of the various competitions.

### Seminar on "Corporate Governance and Sustainable Performance"

To provide information and understanding related to corporate governance that lead to sustainable performance of any organization and to address the issues related to company/ Institute laws, tax benefits and corporate social responsibility a seminar on "Corporate Governance and Sustainable Performance" was recently organized by the Shailesh J Mehta School of Management (SJMSOM) jointly with the Central Depository Services (India) Limited, Mumbai. Prof. K. P. Kaliappan, Associate Dean (R&D), IIT Bombay inaugurated the Seminar. The inaugural address was delivered by Mr. Prashant Saran, Whole time Member, SEBI.

The seminar comprised of three lecture sessions on "Corporate Governance and Sustained Corporate Performance", "Issues of Interpreting Rules/regulations/procedures and Transparency", and "Board Management and Corporate Governance". Prof. S. Bhargava, Head, SJMSOM, Prof. Dinesh Sharma and Prof. Vinish Kathuria respectively, chaired the sessions.

Mr. Amit Tandon, Founder & MD, Institutional Investor Advisory Services gave the valedictory address.

### Visit of British students

Two batch of 100 British students each, under UK-India Education and Research Initiative (UKIERI) study India program visited IIT Bombay on September 5 and 12, 2014. The visit was organized by the British Council, an International organization for cultural relations and educational opportunities and the Office of Dean (International Relations), at IIT Bombay. A Question and Answer session, to address the queries of British students, with regard to various aspects of the Institute and student life on campus was attended by Ms. Shyamala Iyer, Executive Officer, Office of Dean (IR). An interactive session between the visiting students and student team of IIT Bombay lead by Mr Abhinav Garg, Institute Secretary of International Relations was also held on the occasion.

### Blood Donation Drive



The Security Section and SAMWAD - Student team of IIT Bombay in association with Tata Memorial Hospital organised a Blood Donation Drive at Convocation Hall foyer, of the Institute, on September 28, 2014. The drive witnessed blood donation from around 250 people including Faculty, Student and Staff community of the Institute. Resident of IIT Bombay campus also

participated in the camp and contributed towards this noble cause. The camp was held in the presence of Prof. Devang V. Khakhar, Director, Prof. Subhasis Chaudhuri, Deputy Director (AIA), Prof. Kishore Chatterjee, Asso. Dean (IPS-II), Dr. R. Premkumar, Registrar, Prof. T. Kundu, Chairman (SAC) and Mr. S.S. Jha, Chief Security Officer, IIT Bombay.



## Research in focus - Healing touch of gold



*In-situ decomposition of gold coated liposomes in a cancerous tissue*

How safe are gold nanostructures for treating cancer patients? Quite safe now says a research team at IITB. The team has engineered a new gold nanoparticle called Lipos Au NPs that has unprecedented potential to cure cancer in a biologically safe and noninvasive way.

In a breakthrough research effort, Dr. Rohit Srivastava and Dr. Rinti Banerjee at IIT Bombay collaboratively engineered a multifunctional gold NP called Lipos Au NPs that combines conventional drug delivery with photothermal therapy (PTT), and optical imaging. It is also the first reported instance of a NP that can degrade to a size of 5nm in the presence of heat energy – a behavior that makes it compatible with renal clearance. This research appears as a paper in the prestigious *Nanoscale* journal published by the Royal Society of Chemistry.

Drawing on their extensive experience of engineering gold NPs, the IITB research team implemented a core-shell structural effect for the Lipos Au NPs by placing a bio-degradable lipid core within a gold shell. The lipid core can carry a drug and release it when exposed to near infrared (NIR) light. However, “the novelty of the Lipos Au NPs” explains Dr. Aravind Kumar Rengan, who is also the first author on the paper, “does not lie in its drug delivery application though it could be one of its uses; it lies in its unprecedented potential for curing cancer in a biologically safe and noninvasive way.”

Dr. Aravind explains further, When NIR light is directed on the Lipos Au NPs, it interacts with the NPs releasing tremendous amount of heat energy. This heat energy is what causes the otherwise non-biodegradable gold to break down into particles of 5nm size, which can then be naturally eliminated by the body. This, as already discussed, has huge implication for healthcare. Additionally, the released heat energy can directly kill cancer cells, which could eventually eliminate the need for using any toxic drugs on patients. “A less obvious benefit of PTT,” he adds, “is that unlike surgical intervention, Lipos Au NPs can reach the remotest region of the body in a totally noninvasive way.” Overall, the synergy between the multiple functional aspects of the Lipos Au NPs could significantly enhance the quality of treatment for cancer patients.

For more information please visit: <http://www.iitb.ac.in/en/research-highlight/healing-touch-gold>

## Conference / Workshops

**Sammilan** - The First Annual Conference on *Urban Rural Divide-Bridging the Technology gap* was organised by MHRD-TEQIP-KIT in collaboration with ABHYUDAY, the social festival of IIT Bombay, during August 16-17, 2014. The conference provided an opportunity to students to interact with great Social Activists, Young social entrepreneurs and delegates from various NGOs.

**Prof. Ambarish Kunwar**, Department of BioSciences & Bioengineering presented a poster on "Modeling Catenation Removal by Topoisomerase II during Chromosome Segregation", in Advanced Workshop on *Interdisciplinary Views on Chromosome Structure & Function*, during September 15-19, 2014 at Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy.

## Institute Colloquium / Lectures & Seminars



Mr. Sajjan Jindal visited Treelab at IIT Bombay

**Mr. Sajjan Jindal**, Chairman and Managing Director, JSW Steel Limited, visited IIT Bombay and delivered Institute Colloquium and TechniGraphicS lecture on "JSW - The RISE of the PHOENIX" on September 24, 2014. During the visit Mr. Jindal met the Institute functionaries including Prof. Devang V. Khakhar, Director, IIT Bombay and Prof. Ravi Sinha, Dean (Alumni & Corporate Relations), to explore the possibilities of building a relationship with the Institute. He also visited the Tree Lab at IIT Bombay and was impressed with the research work carried out by the faculty and students.

### Department of Aerospace Engineering

**Dr. Mallesh Bommanahal**, Scientist, CSIR-National Aerospace, Laboratories delivered a talk on "Flight Mechanics on flight envelope boundaries" on August 13, 2014.

**Dr. Vidya Athreya**, Ecologist, delivered a talk on "Leopards in Our Backyards; What Do We Do With Them?" on August 19, 2014.

### Department of Physics

**Dr. Nabanita Saikia**, Computational and Theoretical Chemistry Unit, Department of Chemical Sciences, Tezpur University, delivered a talk on "Designing Carbon Nanotubes for Therapeutic Applications using Molecular Dynamics and Density Functional Methods" on August 13, 2014.

### Department of Computer Science and Engineering

**Mr. Kuldeep Meel**, Ph.D Student, Rice University, delivered a talk on "Approximating Probabilistic Inference Without Losing Guarantees: Combining Hashing and Feasibility" on August 20, 2014.

**Prof. Weisi Guo**, University of Warwick & CUSP, New York University, delivered a talk on "Recent work over the past year on Molecular Communications" on August 28, 2014.

### Department of Humanities and Social Science

**Dr. Shad Naved**, Assistant Professor, Ambedkar University, Delhi, delivered a seminar on "Ghazal, Men and Boys: An Alternative History" on August 6, 2014.

**Prof. P.V. Viswanath**, Professor, Lubin School of Business, New York, USA, delivered a talk on "Word Power: The Impact of Negative Media Coverage on Disciplining Corporate Pollution" on August 25, 2014.

**Dr. Mahesh Kalra**, Assistant Professor and Curator, Dinesh Mody Institute, University of Mumbai, delivered a seminar on "The Story of Indian Money - A Kaleidoscopic Journey" on September 3, 2014.

**Ms. Teesta Setalvad**, Indian civil rights activist and journalist, and **Mr. Javed Anand**, Indian journalist and civil rights activist delivered a seminar on "Religious Fundamentalism and Education" on September 14, 2014.

**Dr. Varsha Panjwani**, Lecturer, Department of Theater, Film and Television, University of York, UK, delivered a seminar on "Early Modern Theatre on Indian Screens" on September 17, 2014.

**Dr. Paramita Bahmachari** from Kolkata, delivered a seminar on "Bollywood's Untimely Bildungsromans: The Hard Path to Normativity" on September 19, 2014. Dr. Paramita Bahmachari works on mainstream Bombay Cinema of the period following the economic liberalization of India.

**Prof. Sasheej Hegde**, University of Hyderabad, delivered a seminar on "In - Quest of 'Indianness' in Indian Social Science Research: Some Intuitions and Other Preliminaries" on September 23, 2014 and "A New Science of Life? Thinking Through Human Genome Research" on September 24, 2014.

**Mr. Anand Shinde**, Trunk Call -The Wild Life Foundation, Mumbai, delivered a seminar on "Dialogue with Elephants" on September 26, 2014.

### Interdisciplinary Programme in Climate Studies

**Prof. Raghu Murtugudde**, Department of Atmospheric and Oceanic Science/ Earth System Science Interdisciplinary Center of University of Maryland & Visiting Faculty, IDP in Climate Studies, IIT Bombay, delivered a lecture on "Introduction to Climate Science: Circulation & Dynamics" during August 18 - 22 and August 26 - 28, 2014.

### Centre for Environmental Science & Engineering

**Dr. Jayanarayanan Kuttippurath**, Researcher, CNRS/LATMOS, University of Pierre and Marie Curie, Paris, France, gave a seminar on "Chemistry and Physics of Atmospheric Pollution" on August 26, 2014.

**Dr. Debdeep Dasgupta**, Postdoctoral fellow, St. John's Medical College, delivered a talk on "Biofilm and its Implication in Bioremediation" on September 3, 2014. The seminar was organized by Environmental Science and Engineering Association (ESEA).

**Dr. Prabhakar Celement**, IIT Bombay Alumni, delivered a talk on "Complexities in the groundwater models - when should we say enough is enough?" on September 22, 2014.

### Centre for Technology Alternatives in Rural Areas

**Ms. Ashwini Kulkarni**, Technical Committee advisor to Government of Maharashtra EGS Department delivered a seminar on "Need of social welfare programs (NREGA): Implementation, ground realities and our contribution" on September 30, 2014.

### Department of Mathematics

**Prof. S.G. Dani**, delivered a lecture on "Mathematics and its Applications" at IIT Jodhpur on August 19, 2014 to undergraduate students, on the theme "Sequences of numbers, distribution, randomness, and applications". He also delivered Colloquium talk on "Lattice points in regions of the plane and spaces of higher dimension", at NISER, Bhubaneswar, and a talk on "Numbers, shapes and civilization" at DST-INSPIRE, KIIT University Bhubaneswar, during August 22-23, 2014, respectively.

Prof. Dani, also, delivered an annual Somesh Bagchi Memorial Lecture on "Continued fractions and their application in geometry and Diophantine approximation" at Indian Statistical Institute, Kolkata, on September 11, 2014, and delivered keynote address on "Mensuration of quadrilaterals in Lilavati" at the *Bhaskara 900 at the International Conference on the 900th Birth Anniversary of Bhaskaracharya*, organized by the Vidya Prasarak Mandal, Thane, during September 19-21, 2014.

**Prof. K. B. Athreya**, Distinguished Professor, Department of Mathematics and Statistics, Iowa State University, USA, delivered a talk on "An introduction to Indian classical music" on August 28, 2014.

### Awards and Distinctions

**Prof. Soumen Chakrabarti**, Dept. of Computer Science and Engineering, has been selected for the Shanti Swarup Bhatnagar Award in Engineering Sciences for the year 2014.

**Prof. Rajneesh Bhardwaj**, Department of Mechanical Engineering, has been awarded "IEI Young Engineers Award 2014-15" for Mechanical Engineering.

**Prof. Anand Khanna**, Department of Metallurgical Engineering & Materials Science, has been awarded Lifetime Achievement Award from the National Corrosion Council of India (NCCI) for his achievements over last 25 years in the field of Corrosion and its prevention.

**Prof. Rinti Banerjee**, Department of Bioscience and Bioengineering, has been selected for the NASI - Reliance Industries Platinum Jubilee Award (2014) for application oriented innovations.

**Prof. Ramagopal Rao**, Department of Electrical Engineering has been selected for the NASI - Reliance Industries Platinum Jubilee Award (2014) for application oriented innovations.

**Prof. Pushpak Bhattacharya**, Department of Computer Science & Engineering has been awarded V.N.M.M. Award by IIT Roorkee for his innovative and creative work in the field of Engineering.

**Prof. C. Subramaniam**, Department of Chemistry has been awarded the Young Scientist Gold Award by the International Union of Materials Research Societies (IUMRS) in recognition of his work leading to the development of carbon nanobot-copper electrical conductors with exceptional current carrying capacity.

**Prof. S. G. Dani**, Department of Mathematics has been nominated by the International Mathematical Union (IMU) to the International Commission on the History of Mathematics (ICHM) for the period 2015-2018. He has also been elected as the President of the Indian Mathematical Society for the year 2014-2015.

**Prof. Tarun Kant**, Department of Civil Engineering, has been selected to receive the ICCES Lifetime Achievement Medal for his seminal contributions to composite materials and to the education of generations of students in India.

**Prof. Prabhu Ramachandran**, Department of Aerospace Engineering, has been selected for the Kenneth Gonsalves Award 2014, an annual award constituted by the Python Software Society of India for recognition of substantial and original community contribution towards Python programming by an Indian.

**Prof. Rohit Srivastava**, Department of Bio-Science and Bio-Engineering, has been selected for the 2013 VASVIK Award in the category of Biological Sciences & Technology.

He has also been selected for the Organisation of Pharmaceutical Producers of India (OPPI) Award for developing "simple and affordable technology for glucose estimation device and strips".

**Prof. Suryendu Dutta**, Department of Earth Sciences, has been selected for the NASI- SCOPUS Young Scientist Award 2014 in the category of "Earth, Oceanography & Environmental Sciences".

**Prof. Virendra Sethi**, Centre for Environmental Science and Engineering, has been selected for the VASVIK Award 2014 in the category of "Environmental Sciences & Technology".

### Publications / Presentations

#### Department of Mechanical Engineering

**Bhaskar, U., Mohanan, S., Srivastava, A. and Agrawal, A.**

"Interferometry Based Whole-Field Heat Transfer Measurements Of An Impinging Turbulent Synthetic Jet" in *International Communications in Heat and Mass Transfer*, Vol. 58, 118-124, 2014.

**Bhaskar, U., Srivastava, A. and Agrawal, A.**

"Acoustic and heat transfer characteristics of an impinging elliptical synthetic jet in *International Journal of Heat and Mass Transfer*, Vol. 79, pp, 12-23, 2014.

#### Department of Humanities and Social Sciences

**Prof. Sudha Shastri** presented a paper on "Graphic adaptation of the 9/11 Commission Report: Relevance, Risks, and Responsibilities" at the 3<sup>rd</sup> *Global conference on the Graphic Novel*, at Mansfield College, Oxford, during September 3-5, 2014.

### Appointments

**Dr. Kanchan Sinha**, Department of



Biosciences and Bioengineering; has been appointed as Post Doctoral Fellow on August 4, 2014.

**Dr. Bajarang V. Kumbhar**, Department



of Biosciences and Bioengineering, has been appointed as Post Doctoral Fellow on August 4, 2014.

**Dr. Santosh Kumar Sahoo**, Dept. of



Chemistry, has been appointed as Post Doctoral Fellow on August 4, 2014.

**Dr. Enamullah**, Department of Physics, has been appointed as Post Doctoral Fellow on August 6, 2014.



**Dr. Akanksha Singh**, Department of Electrical Engineering, has been appointed as Post Doctoral Fellow on September 1, 2014.



**Shri Damodar K. Kini**, Jr. Tech. Supdt., Industrial Design Centre, retired after 34 years of service.



**Dr. Shiv Prakash Patel**, Department of Mathematics, has been appointed as Post Doctoral Fellow on August 7, 2014.



**Ms. Vaishali S. Bahulkar**, has been appointed as Temp. Hindi Officer on September 9, 2014.



**Shri Gundu K. Bali**, Watchman (SG), Security Section, retired after 38 years of service.



**Dr. Arun Radhakrishnan**, Department of Aerospace Engg., has been appointed as Post Doctoral Fellow on August 8, 2014.



**Dr. Bakul Rao**, Centre for Technology Alternatives for Rural Areas has been appointed as Associate Professor on September 23, 2014.



**Shri Jalba G. Sonkamble**, Watchman (SG), Security Section, retired after 37 years of service.



**Mr. Anjan Gupta**, Department of Mathematics, has been appointed as Post Doctoral Fellow on August 18, 2014.



**Dr. Vinay Saini**, Department of Biosciences and Bioengineering has been appointed as Post Doctoral Fellow on September 25, 2015.



**Shri Vithal J. Bagave**, Sr. Helper, Estate Office, retired after 35 years of service.



**Prof. S.S Joshi**, Department of Mechanical Engineering, has been appointed as Head of the Department, on August 19, 2014.



**Dr. Chandra M. Rao**, Department of Chemistry has been appointed as Assistant Professor on Sept. 29, 2014.



**Ms. Kamu Ishwar Solanki**, Sr. Cleaner, Public Health Office, retired after 35 years of service.



**Dr. Kumar Appaiah**, Department of Electrical Engineering, has been appointed as Assistant Professor on August 20, 2014.



### Retirements on August 31, 2014

**Prof. S.A. Khaparde**, Professor, Department of Electrical Engineering, retired after 36 years of service.



**Prof. Dayadeep S. Monder**, Department of Energy Science & Engineering, has been appointed as Assistant Professor on September 1, 2014.



### Retirements on September 30, 2014

**Dr. S.N. Jha**, Sr. Sports Officer, Gymkhana, retired after 35 years of service.



**Ms. Rekha S. Oltikar**, Assistant Librarian, Central Library, retired after 35 years of service.



**Prof. Ruchi Anand**, Department of Chemistry has been appointed as Associate Professor on Sept. 1, 2014.



**Shri Ishwar M. Solanki**, Sr. Cleaner, Hospital, retired after 34 years of service.



**Shri Pradip V. Pattekar**, Sr. Tech. Supdt., Department of Aerospace Engineering, retired after 42 years of service.



**Shri Purushottam M. Purani**, Sr. Cleaner, Public Health Office, retired after 34 years of service.



**CEP courses scheduled during November 2014**

No.	Course Title	Course Coordinator / Department	Duration
1	3D Printing & Allied Technologies	Prof. K.P. Karunakaran Mechanical Engineering	November 17-19, 2014 (3 days)
2	Training Programme on Road Works for MIDC Engineers	Prof. Dharamveer Singh Civil Engineering	November 17-21, 2014 (5 days)
3	Expo Info Design	Prof. Ravi B. A. Poovaiah Industrial Design Centre	November 20-22, 2014 (3 days)
4	Energy Management	Prof. Rangan Banerjee Energy Systems Engineering	November 24-28, 2014 (5 days)
5	Solar PV Modules and Systems Testing and Characterization	Prof. Pratibha Sharma Energy Systems Engineering	November 26-28, 2014 (3 days)

In the Wilderness



**Photo Credit :**  
**by Mr. Krishnajith Jayamani,**  
**Student, Aerospace Engineering**

**SAT'N PEPPER**

by Dr. Arun Inamdar

**Celebrating the success of Mangalyaan !**



**..Somewhere in ISRO HQ !!**