

59 Years Of Pursuit Of Excellence : IIT Bombay Celebrates Foundation Day

Institute releases special commemorative postal stamp,
Diamond Jubilee logo and unveils plaque of the new guest house 'Padmavihar'



Dignitaries along with the recipients of awards on Foundation Day

IIT Bombay celebrated its 59th Foundation Day. The foundation stone for the internationally-recognized Institute was laid by Pandit Jawaharlal Nehru, then Prime Minister of India on March 10, 1959. IIT Bombay was the second IIT to be established in the country and the first one to be established with a foreign aid received from UNESCO. Since then, the Institute has grown from strength to strength and is now counted amongst the best engineering institutions across the globe.

The ceremony commenced with a welcome address by the Director of IIT Bombay Prof. Devang Khakhar highlighting key milestones achieved by the Institute in

59 years and announcing the beginning of Institute's Diamond Jubilee year (March 10, 2018 to March 10, 2019). Welcoming the guests, he said, *"The biggest change in the Institute is the trend of faculty from different Departments collaborating to form large multidisciplinary centres to address particular areas. I am happy to announce that we have placed an order for a new supercomputer 'Space Time' that will provide a visible leap forward in our computer capabilities"*.

He also spoke about increased industry interactions, international engagements, entrepreneurship and increased alumni engagements.

On the occasion, the Chief Guest for the function, Honourable Governor of Maharashtra Shri CH. Vidyasagar Rao unveiled the plaque for new Guest House Padmavihar in the presence of the Guest of Honour Dr. Anil Kakodkar, Ex-Chairman, Board of Governors, IIT Bombay.

The fitting epitaph to (kick start) the Diamond Jubilee year was the release of Institute postal stamp and the Diamond Jubilee logo by the Chief Guest Shri CH. Vidyasagar Rao during the function. In his inaugural address, Shri CH. Vidyasagar Rao said, *"Like the 'Make In India', we must implement 'Teach In India' programme to associate best faculty with our institutions"*.

Calling IIT Bombay the real diamond in the crown of India, the Chief Guest urged the Institute to prepare a road map for itself. A Nobel price for India is long over-due, and if any institution can deliver it for India, it is IIT Bombay. It is necessary that research funding and student funding are enhanced substantially. Let

IIT Bombay be the nucleus to facilitate a vibrant start-up ecosystem," he said.

The Institute celebrated 59th anniversary of its inception today by honouring its select alumni for their achievements in diverse fields ranging from academics, research and entrepreneurship. The 'Prof. S.C. Bhattacharya Award for Excellence in Research in Pure Sciences' and 'Prof. H.H. Mathur Award for Excellence in Research in Applied Sciences' were given away by Shri CH. Vidyasagar Rao. Dr. Anil Kakodkar, Ex-Chairman, Board of Governors, IIT Bombay and the Guest of Honour for the function gave away the Distinguished Alumnus Awards and Young Alumnus Achiever Awards.

The Institute had long felt the need to recognize the alumni of IIT Bombay, who have excelled in their field of work and made the Institute proud. With this intention, the Distinguished Alumnus Awards (DAA) have been instituted.

Distinguished Alumnus Awards - 2018



Mr. Rameshwar Kumar Maini,
(BTech, 1967, Civil Engineering)
President, CEO and Chairman of the Board of Zentech Technical Services Inc. of Houston, Texas, USA



Mr. Jayant Damodar Patil
(MTech, 1978, Mechanical Engineering)
Director and Senior Executive Vice President (Defence Business), Larsen and Toubro Limited (L&T)



Prof. Subodh G. Mhaisalkar
(BTech, 1984, Metallurgical Engineering and Materials Science)
Tan Chin Tuan Centennial Professor in the School of Materials Science and Engineering and Executive Director, Energy Research Institute Nanyang Technological University (NTU)



Prof. Praveen Kumar
(BTech, 1987, Civil Engineering)
Lovell Professor of Civil and Environmental Engineering, University of Illinois, Urbana, Illinois, USA



Dr. T. V. Raman
(MSc, 1989, Mathematics)
Research Scientist at Google



Ms. Shalini Govil Pai
(BTech, 1990, Computer Science and Engineering)
General Manager for Android TV at Google



Dr. Kishore Seendripu
(BTech, 1990, Metallurgical Engineering and Materials Science)
CEO, President and Chairman of the Board of Maxlinear, Inc.



Prof. Geeta Narlikar
(MSc, 1992, Chemistry)
Professor at Department of Biochemistry and Biophysics in the
Lewis and Ruth Cozen Chair I at the University of California,
San Francisco



Prof. Viral V. Acharya
(BTech, 1995, Computer Science & Engineering)
C V Starr Professor of Economics at the Department of Finance at
New York University Stern School of Business. He has assumed
charge of Deputy Governor, Reserve Bank of India



Mr. Nitesh Tiwari
(BTech, 1996, Metallurgical Engineering)
Film writer and director

Prof. S.C. Bhattacharya Award for Excellence in Pure Sciences 2017



Prof. Krishna P. Kaliappan, Department of Chemistry

Prof. H.H. Mathur Award for Excellence in Applied Sciences 2017



Prof. Amit Agrawal, Department of Mechanical Engineering



Prof. B. Ravi, Department of Mechanical Engineering

Young Alumnus Achiever Awards – 2018

The Young Alumni Achiever Awards (YAAA) are for alumni who have made outstanding achievements in their chosen field of work and are below 40 years of age. These awards were instituted in the year 2011.



Mr. Vibhore Goyal
(Dual Degree (BTech + MTech), 2005,
Electrical Engineering)
Director & Co-Founder of CoCubes
Technologies Pvt. Ltd.



Mr. Harpreet Singh Grover
(Dual Degree (BTech + MTech), 2005,
Electrical Engineering)
Director & Co-Founder of CoCubes
Technologies Pvt. Ltd.



Mr. Nishant Patni
(BTech, 2007, Electrical Engineering)
Founder of Hello English

Congratulating the awardees, Ex- Chairman of Board of Governors, IIT Bombay Dr. Kakodkar said, "IIT Bombay must play a leadership role in terms of research, technology development and innovation."

IIT Bombay students had organised a pre-event “Raagadarshan” to start the Diamond Jubilee celebrations of IIT Bombay on a high note on March 9, 2018. “Raagadarshan” - An evening of musical dialogue included eminent Hindustani vocal maestro Padmashri Pt. Ajoy Chakrabarty and his able disciples Mr. Purbayan Chatterjee (on sitar), Mr. Kaustuv Kanti Ganguli (vocal), Pt. Yogesh Samsi (on tabla) and Mr. Ajay Joglekar (on harmonium).

About New Guest House Padmavihar

Padmavihar is a new addition of guest house facilities to IIT Bombay. It has 88 twin rooms and 48 suite rooms. It has a large dining hall for about 280 guests, kitchen with modern equipments, mini dining hall and alumni lounge. As one of the green initiatives, it is equipped with a grey water tank for recycling water and solar water heating system.



About Institute Postal Stamp:

‘MY STAMP’ is the brand name for personalized sheets of postage stamp of India Post. The postal stamp sheet consists of 12 stamps. It has two images of the Institute’s Main building, a historical landmark of the Institute. The backdrop of the stamp sheet is an ariel view of the Institute with the Powai lake.

About Diamond Jubilee Logo:

- To represent the epitome of knowledge and to exude a sense of sophistication, a very subtle and effective perceptual shift ambigram is used for the Diamond Jubilee Celebrations logo. The characters in the circle indicates ‘60’ while the consolidated word interprets ‘bombay’. Though the second letter ‘o’ is incomplete, closure occurs and viewers’ perception completes the shape, making it memorable.

- The circular element at the beginning and the “emerging circles” indicate technological advancement and gives an impression of celebration.

- Colour ‘Orange’ is used to represent sunshine, creativity, determination while Grey is used to represent sophistication.

- Putting practical use of the understandings acquired at the university is reflected through the tagline_ ‘Achieving Excellence Together’.



The logo is designed by Mr. Shashidhar Reddy, alumnus of Industrial Design Centre, IIT Bombay and the tag line ‘Achieving Excellence Together’ is by Mr. Vikrant Raj, alumnus of Chemical Engineering, IIT Bombay.

Targeted Proteomics Workshop And International Symposium 2018

Targeted Proteomics Workshop and International Symposium (TPWIS-2018), comprising of series of parallel workshops was conducted from February 24-28 2018 at IIT Bombay. Prof. Sanjeeva Srivastava, Department of Biosciences and Bioengineering co-ordinated the event triumphantly.

Eminent scientists and researchers from India and abroad shared their knowledge and expertise to train the participants and familiarized them to the vast applications of proteomics. Following series of workshops were conducted during TPWIPS 2018.

Targeted Proteomics Workshop 2018: The course was conducted by four instructors - Mr. Brendan MacLean, Dr. Cristina Chiva, Dr. Eva Borrás and Dr. Nathalie Selevsek and included a series of lectures, hands-on sessions and tutorials.



Prof. Sanjeeva Srivastava along with the Proteomics team

The Mass Spectrometry Workshop 2018 held at the TPWIS-2018 was scheduled from February 23- 28. The participants were acquainted with the basics of mass spectrometry sample run and analysis.

Interactomics workshop: The Interactomics course held at IIT Bombay was approved by the Global Initiative of Academic Networks (GIAN). The course was conducted from February 24 -28, 2018 by Dr. Sanjeeva Srivastava from IIT Bombay and Dr. Joshua LaBaer from Arizona State University as the course co-ordinators.

International symposium: The Targeted Proteomics International Symposium was held on February 25, 2018 at IIT Bombay. At the end, there was a stimulating cultural event.

SoULS, IIT Bombay Wins National Level Solar Chulha Challenge

SoULS team of IIT Bombay has won first prize in national level Solar Chulha Challenge conducted by ONGC. The prize money included Rs. 10 lakh with additional support to make 1000 solar chulhas.

Hon'ble Prime Minister Shri Narendra Modi, on the occasion of Pd. Deendayal Upadhyay's birth anniversary on September 25, 2017, urged ONGC to take up a challenge to work towards making an 'efficient electric chulha (stove)'. The challenge was hosted online at <https://startup.ongc.co.in> and more than 1500 entries were received in the campaign duration.



Minister of Petroleum and Natural Gas, Mr. Dharmendra Pradhan felicitating the SoULS team

Based on the abstract submitted by the participants, and after two rounds of screening and discussion, 20 teams were shortlisted by the expert panel chaired by Dr. Anil Kakodkar, Former Chairman, Atomic Energy Commission. They advised the participants to proceed with the development of the prototype/model.

The 6 shortlisted teams were then invited to New Delhi to demonstrate live cooking on their solar chulhas. After thorough evaluation on the parameters like technology used, readiness of solutions, ability to cook all types of Indian cuisine dishes, adaptability in kitchen, time required for cooking, etc. the team from IIT Bombay was awarded the first prize on April 24, 2018 by Minister of Petroleum and Natural Gas, Mr. Dharmendra Pradhan.

MedPrime Technologies, CareNX Innovations And Bleetech Innovations Bag The Award For The Best Three Start-Ups In Maharashtra



Hon'ble Chief Minister of Maharashtra Mr. Devendra Fadnavis with winners of Start-up awards

The Maharashtra state government, in its initiative to encourage start-ups in the state awarded **MedPrime Technologies, CareNX Innovations and Bleetech Innovations** as the best three start-ups in the state on February 20, 2018. Out of the top three winners the **MedPrime Technologies CareNX Innovations** are SINE, IIT Bombay incubated companies. The award was given away by Chief Minister Mr. Devendra Fadnavis and Industries Minister Mr. Subhash Desai at the session – 'Celebrating Innovators in Maharashtra', held on the second day of the Magnetic Maharashtra Convergence 2018 in Mumbai.

The three start-ups were selected from the six finalists shortlisted out of 600 entries received for the 'Best start-ups awards'. The first winner Binil Jacob, co-founder of MedPrime Technologies received a cash prize of Rs. 50 lakhs, while the second winner Shantanu Pathak of CareNX Innovations and the third winner Janhavi Joshi of Bleetech Innovations received a cash prize of Rs. 30 lakhs and Rs. 20 lakhs respectively.

Speaking on the occasion, Chief Minister Mr. Devendra Fadnavis highlighted the importance of start-ups for the state and assured full support to encourage 10,000 start-ups in Maharashtra.

MedPrime Technologies specializes in biomedical engineering and has developed portable digital microscope called Cilika. CareNX Innovations manufactures foetal heart monitors for rural areas, while Bleetech Innovations manufactures special wristwatches for hearing impaired, which converts sounds into colours and vibrations.

The renowned panellists were Mr. K.R.S. Jamwal, Executive Director of Tata Industries, Rajan Navani, MD and CEO of Jet Synthesys, **Prof. Milind Atrey**, Professor In-charge, Society for Innovation and Entrepreneurship (SINE), IIT Bombay, Mr. V. Ganapathy, CEO of Axillor ventures, Mr. Ashish

Hemrajani Founder of Bookmyshow, Mr. Luis Miranda, CEO of IDFC Equity and Mr. Sandeep Tandon, Founder, Freecharge.

On this occasion, IIT Bombay participated in an R&D exhibition. The Department of Bioscience and BioEngineering, Department of Energy Science and Engineering and Department of Mechanical Engineering of IIT Bombay exhibited few working models, products and general posters giving a glimpse of the R&D activities at IIT Bombay, academic programmes, industry interactions, tech transfers etc. Posters and videos on technologies developed in the Institute were showcased. Brochures like 'R&D Highlights', 'Partner with US', 'Academic Programmes', 'Glimpses of Research' and 'Research Facilities' were also distributed to visitors for information dissemination. The stall attracted an overwhelming response and the exhibits / posters / brochures were very well received. About 15 students and staff from four departments including IRCC interacted with visitors on all six days giving information about the exhibits, potential applications and other queries.

IIT Bombay's exhibition was co-ordinated by Dr. V. Arumugam, IRCC and his team.



Stalls of IIT Bombay in R&D exhibition

e-Yantra Robotics Competition (eYRC-2017), e-Yantra Ideas Competition (eYIC-2018) and e-Yantra Symposium (eYS-2018)

e-Yantra is a robotics outreach project that emerged out of the Embedded Systems course at the Department of Computer Science and Engineering at IIT Bombay. This year's e-Yantra Symposium achieves a six-year track record of running a massive (MHRD-funded) National Robotics outreach program. On display were the finals of two of its major student-facing initiatives: the e-Yantra Robotics Competition (eYRC-2017) and e-Yantra Ideas Competition (eYIC-2018).

One of MHRD's flagship projects, e-Yantra has established 280 e-Yantra labs throughout the country over the past three years. It has now been given a three-year extension with a challenge to increase the number to 1,000 labs. e-Yantra Robotics Competition (eYRC) presents a real-world problem in the form of a game with a rulebook and scoring criteria. What makes this competition unique is that selected candidates were given all the material to compete along with guidance, supervision and an all-expense paid visit to IIT Bombay for the finals held on March 22-23, 2018.

Every year, e-Yantra strives to increase the number of teams selected for participation in the competition. The organizers had introduced three 'tracks' with one or more themes in each track. All three tracks were conducted in parallel and differed slightly in the format, subject matter and platforms used. This year, e-Yantra introduced seven exciting themes in agriculture. Automation of various processes in a farm - from sowing a seedling to harvesting the crops and transporting the produce to the market were abstracted into themes.

This year's competition featured five finalist teams for each of the seven themes. Whereas every year there are some themes for first-time participants, there are also more difficult themes for students who have participated before. For instance, the "Spotter Snake" theme in which over a period of three months, the teams had to design and build a robotic snake using 3-D printed parts designed and simulated using open-source software. e-Yantra arranged to have the teams 3D print the final versions of the snake which was then made to catch "rodents" in an arena designed by e-Yantra. Similarly this year there was a drone-based theme where a drone acted as a warden to catch an animal that had strayed into a field by landing a small palm-sized drone on the animal modeled by another robot.

e-Yantra Ideas Competition (eYIC) is different in that it seeks to identify and nurture potential entrepreneurs in the e-Yantra Labs that the project has set up throughout the country. Students are invited to submit a proposal to solve a local problem using their e-Yantra lab and after an intense process of selection and vetting, are permitted to build the proposed system using their e-Yantra labs. Following a pre-selection in regional finals this year in Coimbatore, Ernakulam, Bangalore, Pune, Mumbai, Ahmedabad and Noida, the 18 finalists presented their implemented ideas in IIT Bombay during March 23-24, 2018.

For the past six years, e-Yantra's National Robotics Competition has been growing exponentially from 4,500



Prof. Kavi Arya along with winners of Feeder Weeder competition

registrations in 2012 to 23,500 registrations (5,932 teams) last year despite falling engineering college seats (30% YoY). This competition teaches hardcore engineering skills through a scalable competition paradigm. Most importantly, it needs no expense on the part of selected participants – e-Yantra provides the kit, training and guidance and even a travel allowance and boarding/ lodging at IIT Bombay for the duration of the finals at IIT Bombay.

Whereas the competition engages annually with students, e-Yantra has extended its contact with students and teachers by setting up robotics lab in colleges throughout the country. A college invests Rs. 2 lakh in basic equipment and nominates four teachers who are trained by e-Yantra over a period of 6 months. Training involves a two-day face-to-face workshop followed by a online Task Based Training (TBT).

Following the panel discussion, there were talks in an inspirational vein for the finalists and teachers hosted at IIT Bombay. The speakers included Prof. Dinesh Singh (ex-VC, Delhi University), P V Subramanyam (financial consultant) and Rashmi Bansal (author).

Visitors also had a chance to browse the finalists of the e-Yantra Ideas Competition exhibits where students from regional e-Yantra labs turned problems into opportunities to solve local problems using the resources of the e-Yantra lab in their college. Prof. Kavi Arya (Principal Investigator, e-Yantra) believes this to be an important beginning to the startup model being proposed.

More than 40 IIT Bombay faculty across departments have volunteered to help evaluate the finalists of the two competitions. Dr. Krishna Lala, Sr. Project manager of e-Yantra said, "This just shows that technology is a passion all around for IIT teachers". Dr. Saraswathi Krithivasan, Sr. Project Manager suggested, "The students who have worked hard to reach the finals have the envied privilege of being grilled in depth about their work by IIT faculty".

Color Run 2018 - Color Me Crazy



Glimpses
of Color
Run 2018



IIT Bombay awoke to a spectacle of hues, music and mirth on March 10, 2017. The streets came alive with the festive spirit of over 300 participants, who had turned up for the third edition of the Color Run. The revelry began at 7 am at the SAC, with the merrymakers grooving to the beats of the music truck that led the way. With 5 color zones in their path, the crowd soon turned into a vibrant sea of red, blue, pink, yellow and green. GoCane's SugarCane Juice Bar kept the enthusiasm soaring with

their complimentary cups of sugarcane juice and thandai for all participants. By the time the crowd made their way back to SAC, having completed a circuit that spanned the entire path from Hostel 12 to Hostel 15, the fever had engulfed the entire campus. SAC itself became a water zone, complete with sprinklers, music and rain-dancing. With the tag-line 'Color Me Crazy', Color Run 2018 was indeed a huge success.

Sangeet Sadhak Baithak

Roots, the classical and folk arts club of IIT Bombay, conducted Sangeet Sadhak Baithak on March 3, 2018. This concert was a unique classical music experience, held at the natural lakeside landscape of Jalvihar guest house.

The concert lasted almost 12 hours, from 9 am to 9 pm with over 50 artists performing 11 concerts through the day. The young artists in their 20s have made their mark as very talented musicians from Mumbai and Pune region. All these musicians are part of a trust called Sangeet Sadhak and they meet regularly for such baithaks to perform and watch each other perform. Indeed, the concert was a very beautiful experience. Those who attended the whole day were totally mesmerized by the amount of beautiful music they were treated to in a day. Almost 200 people attended the concert. The best part was that all the classical music enthusiasts got to watch the artists very closely and interact with them personally and get inspired by them.



National Institutional Ranking Framework (NIRF) 2018

IIT Bombay has secured third position in 'Overall' category, second position in 'Engineering' category and fifth position in 'Management' category of the National Institutional Ranking Framework (NIRF), declared by the Ministry of Human Resource Development, Government of India on April 3, 2018

Last year, all the IITs had participated only in the Engineering category. The remaining three categories were Pharmacy, Management and University.



IIT Bombay Alumnus Wins National Award

"MAACHER JHOL-THE FISH CURRY", directed by IIT Bombay alumnus Mr. Abhishek Verma from 2014 batch of MDes (animation), IDC School of Design won the National Award for Best Animation Film in the 65th National Film Awards of India.



IIT Bombay Celebrates Holi

Holi was celebrated in its colourful fervour at IIT Bombay on March 2, 2018. The Hostel Affairs Council of IIT Bombay and Zoomcar conducted some events to bring awareness about the cycle-pooling project of the Institute.

Cycle-pooling project is an environment-friendly and techno-economic solution for the transportation purpose. This project is helping the residents of IIT Bombay to travel throughout the Institute campus very comfortably without causing any pollution. Two contests were conducted in which students and staff of IIT Bombay participated:

Slow Cycle Race

A cycling track was created with the help of cones. The participants had to take maximum time to complete the track. During the attempt, if the participant's feet touched the ground, they got a 10 seconds penalty. If they hit a cone, they got a 5 seconds penalty.

Every hour, the participant having the highest score got a PEDL T-shirt and Rs. 500 worth Zoomcar driving credits.

Crazy Holi Picture

Participants had to click images with PEDL and post on Instagram, Twitter or Facebook

Every hour, the participant who posted the craziest and most creative image on Instagram or Facebook got Rs. 300 worth Zoomcar driving credits and a PEDL T-shirt.



Inauguration Of New SAC Gym

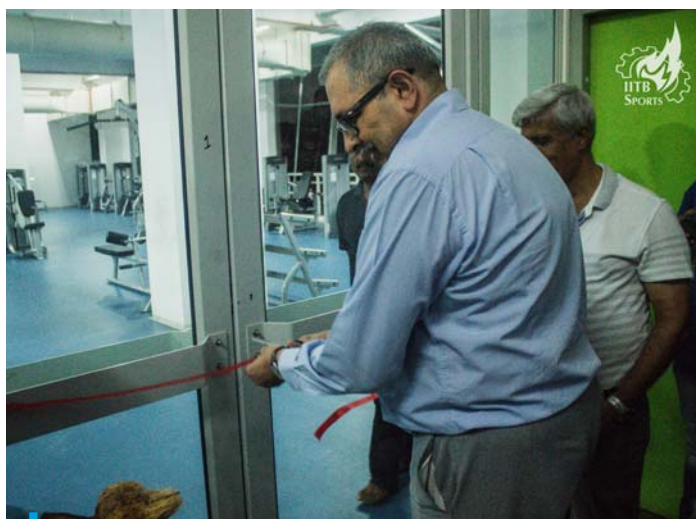
The much-anticipated, new SAC gym was inaugurated on April 5, 2018 by the Director of IIT Bombay Prof. Devang Khakhar. Prof. P.M. Mujumdar, Deputy Director (Finance and External Affairs), Prof. Soumyo Mukherji, Dean (Student Affairs) and Prof. B.V.S. Vishwanatham, Dean (Infrastructure Planning and Support).

It is one of the largest and most expensive projects the Institute Sports Council has ever undertaken. The second floor of the New Gymkhana building hosts the extravagant gym, well stacked with world-class equipment and facilities.

The gym houses amenities like a rowing machine, chest press, treadmills, four stack multi gym, elliptical cross trainer and an array of dumbbells.

The well-equipped, air-conditioned gym is spread over 5000 sq. ft. The facility has over 50 types of equipment in order to cater to every possible aspect of fitness. Users have access to professional gym trainers here. Personalised advice and tips are available in a customised fitness app.

The gym is equipped with bio-metric entries for improved access. The bio-metric access will also be linked to the 'pay per class' fitness initiative of the sports council, as well as with the other sports facilities in the Institute. The gym is a big step towards improving the fitness scenario for campus residents.



Director Prof. Devang Khakhar inaugurating the new SAC gym

IIT Bombay Students Win The Gandhian Young Technological Innovation Award

The Gandhian Young Technological Innovation (GYTI) Award/ Appreciation 2018 function was held at Rashtrapati Bhavan on March 19, 2018. Dr. R.A. Mashelkar, Chairperson of the Research Advisory Committee, SRISTI and NIF felicitated the awardees in the presence of the Hon'ble President of India Shri Ram Nath Kovind during the Festival of Innovation and Entrepreneurship 2018.

During this function, former students **Mr. Trivikram A.** and **Mr. Avinash Prabhune** of IDC School of Design won the Gandhian Young Technological Innovation (GYTI) Award/ Appreciation 2018.

While Mr. Trivikram was felicitated for the project '**Vein Detector**' completed under the guidance of Prof. Girish Dalvi, Prof. Purba Joshi and Prof. B.K. Chakravarthy, Mr. Prabhune was felicitated for the project '**Window-mounted Solar Cooker**' completed under the guidance of Prof. B K Chakravarthy.

Ms. Debasmita Mondal and **Mr. Sourabh Agrawal**, students of Department of Biosciences and Bioengineering who have developed a "**Smartphone-based impedimetric disposable biosensor for detection of cardiac biomarkers**" under the guidance of Prof. Soumyo Mukherji have also won the coveted award. The award carries a trophy, certificate and a research award of Rs. 15 lakhs from Biotechnology Industry Research Assistance Council (BIRAC).



Mr. Trivikram A., Mr. Avinash Prabhune, Ms. Debasmita Mondal and Mr. Sourabh Agrawal receiving award from Shri Ram Nath Kovind

AAKAAR Technical Festival Sees Huge Participation

AAKAAR, the annual technical festival of the Department of Civil Engineering in IIT Bombay, was held on March 17-18, 2018. AAKAAR lays foundation for the emerging technological advancements, provides a much-needed lift to ideas and innovations and creates a platform for budding engineers across the country to create, innovate and learn various aspects of civil engineering. In the previous year, AAKAAR had witnessed a footfall of 15,000+ students representing their colleges and showcasing their talent. In its tenth edition, AAKAAR achieved new mileages.

Symposium: International Civil Engineering Symposium (ICES)

is a platform for young and budding researchers of the nation to

present their work before the most experienced professors of IIT Bombay and the best civil engineering dignitaries of the country. The 10th edition of the Symposium booklet was launched in the inauguration



ceremony.

Competitions: AAKAAR gives students the opportunity to interact and compete with the brightest minds of the country. The organizing team tries to initiate innovative competitions every year to develop a keen interest among participants for civil structures. Competitions lined up for this year were Bridge-IT, Conquer-IT, Seismic, Technical Poster Presentation and the new interactive on-spot competition MSE wall. Civiq, the national level civil engineering quiz competition was also held and successfully organised. This year's AAKAAR saw a huge participation in the competitions from all over India.

Events: AAKAAR also provided students a fine opportunity to try their hands at professional softwares and get insight from eminent industrialists and academicians. This year's events included CENEx (Civil Engineering national Exhibition), workshops on civil engineering softwares like Microstation, Context Capture, STAAD-PRO and ETABS and lectures on the advanced and needful topics by:

- Mr. R. Ramana, Executive Director (Planning), Mumbai Metro Rail Corporation Ltd.
- Mr. Soma Vijaykumar, Chief General Manager (Transportation and Airport), CIDCO
- Mr. S J Vijay, Chairman hoMMission India and Salmon Leap India
- Mr. Suresh Kumar, Regional Manager, RWDI Consulting Engineering (India) Pvt. Ltd.

Other than these, a panel discussion was organised on the topic of Disaster Management of "Mumbai Floods 2005". The panelists shared their views on the prevention and solutions of Mumbai Floods. The panelists were:

- Prof. Chandan Ghosh, Professor and Head, National Institute of Disaster Management.
- Prof. Madhav Madhira R, Visiting Professor, IITH, Former Vice President ISSMGE
- Mr. Stalin Dayanand, Environmental Activist and Director, Vanashakti NGO

- Mr. VH Khandakar, Chief Engineer, Storm Water Drains, BMC

Aakaar is a great platform for students across the country to showcase and enhance their skills at the highest level. Since its inception in 2009, the main purpose of the festival is to promote cross cultural miscellany and provide a joint platform for students of the civil engineering fraternity from all strata of society to interact and assist the flow of knowledge. Various informal events are held to connect the participants with each other and expand their social group.



Open Triathlon 2018 Sees Overwhelming Response



Open Triathlon 2018



Open Triathlon 2018, an endurance sport in which one has to perform the tasks of swimming, cycling and running over various distances, was organized by IIT Bombay Swimming Club on March 21, 2018. The event saw a huge participation from both students, staff and faculty. The competition was held in two categories viz. individual and mixed.

As many as 40 people participated in individual Triathlon. The distances to be covered by the participants in Triathlon were 300m of swimming, 3 rounds of SAC of cycling and 1 round of SAC of running. The event saw equal participation from both staff and students. The first position was bagged by Kedar, the second position by Kuldeep Singh, an IIT

Bombay alumni and the third position was bagged by Utkarsh Yadav, a third year student.

12 teams competed in mixed triathlon, out of which six were formed by students and other six by staff and faculty members. The distances were 500m swimming, 6 rounds of SAC of cycling and 2 rounds of running.

The first position was bagged by Mansi Khedekar (swimmer), Vipin Kumar (cyclist), Abebe Mekonnen (runner). The second position by Apeksha Fernandes (swimmer), Arvind Mallela (cyclist), Pratik Patil (Runner). Amit Sachan (swimmer), Pariichay Limbodia (cyclist), Ashi Gupta (runner) were in third place. The over-whelming response encourages IIT Bombay Sports to conduct more such events.

Surbahaar - A Voyage Mesmerizes Audience



Surbahaar, the Institute's annual musical night held on March 21, 2018, was held in spectacular fashion. This edition of Surbahaar had a theme to it, "A Voyage", through which the audience was taken on a journey through the vast expanse of music and the different genres, styles and ideas it encompasses. The show involved 15 performances spamming



various genres such as fusion rock, Sufi, Bollywood and jazz/ blues. Famous performances included 'Pehla Nasha', a rock cover of the title track 'Dangal' and the very recently famous 'Tera Wo Pyaar'. There was also a special appearance by the Guest of Honour Bhoomi Trivedi who spoke about her journey and sang her famous tunes to get the audience's feet tapping.

IIT Bombay Gets Best Poster Award At The World Resources Forum (WRF) 2017 Geneva

A poster was presented by IIT Bombay team at the World Resources Forum 2017 Geneva during October 24-25, 2017. The title of Presentation was *"ICT for SDG 2 and 3 – Reincarnating processes for a healthier world: Case of India."* The poster was awarded the best scientific contribution among the state-of-the-art presentations at the Forum in the "Policies and Governance" session. Over 220 abstracts from 39 countries were submitted to the WRF, 196, of which were finally accepted by the Scientific Committee for presentation during one of the scientific sessions and poster sessions organized in Geneva. Scientific presentations were clustered in 11 sessions with dedicated themes.

The paper proposed an effectively-executable, ICT based "system process re-engineering" model to strategically complement existing processes for robust management of regional resources. The foundation of this system rests on building capability to provide for accommodating emergencies and cater to local needs of any region. This model shall set a precedent by utilizing an ICT system for efficacious process revamping of current solutions addressing a complex multi-dimensional problem — malnutrition.

The ideation of the research was done by Mr. Harshal Kate, Ministry of Rural Development Fellow (CTARA) working in the area of ICT for rural development under Prof. Ganesh Ramakrishnan (CSE, IIT Bombay). Currently he is Research Associate at the Department of Public Enterprises' Corporate Social Responsibility (CSR) Study Unit for Indian CPSEs, IIT Bombay under Prof. Satish B. Agnihotri (CPS and CTARA, IIT Bombay). Ms. Harini Swaminathan, PhD scholar at IIT Bombay-Monash Research Academy: CTARA, IIT Bombay, presented the paper. She is working in the area of malnutrition and Human Development Index (HDI) under Prof. Narendra G Shah (CTARA, IIT Bombay).



World Resources Forum (WRF) 2017 organized at Geneva, Switzerland

TechConnect 2017

Mr. Manohar Parrikar, Hon'ble Chief Minister of Goa, inaugurated TechConnect 2017, an event showcasing IIT Bombay's R&D activities organised by Office of the Dean (R&D) during December 29-31, 2017 as part of TechFest 2017.

The event showcased about 125 exhibits (working models, demonstrations, products) from various 15 academic units. In addition, Industrial Research and Consultancy Centre (IRCC) and the Academic Office had set up stalls to disseminate information about the R&D activities of the Institute in general and academic programs offered by IIT Bombay.

Close to 50 faculty members, 275 students and project staff from different academic units interacted with visitors on all three days giving information about the exhibits, potential applications and other queries. The event attracted very large footfall of students and general public. Main organisers of this event were Prof. V. Jothiprakash (Faculty Coordinator), Mr. Divyanshu Prasad (Overall Student Coordinator) and Dr. V. Arumugam (IRCC Coordinator).



Mr. Manohar Parrikar, Hon'ble Chief Minister of Goa, inaugurating the event

International Women's Day Celebrations

As part of the International Women's day celebrations, the Women Cell of IIT Bombay organized series of events in March 2018 to celebrate International Women's Day. The grand culmination event was celebrated on March 19, 2018 with the theme 'Be the Change'. Prof. Devang Khakhar, Director, IIT Bombay was the chief guest for the function. The programme was a combination of informative sessions by following distinguished speakers, other events and cultural programme:

- Ms. Suhani Mohan, alumna IIT Bombay and co-founder of Saral Designs, a start-up developing high-quality, affordable sanitary napkins.
- Mr. Vasudevan Srinivasan, Director CETC (an organization for Prevention of Sexual Harassment training by Ministry of Women and Child Development), and film director. His movie 'Boys cannot be boys' was screened in the campus on March 7, 2018.
- Ms. Aditi Deodhar, founder of Brownleaf, an organization that composts dry leaves shed by trees.

Other events included:

Street play '**Gender Bender**' was performed by college students associated with MAVA on March 7, 2018. Gender Bender is a 20 minute gripping play on gender and diversity, evolved collectively by the student leaders through an intensive 5-day workshop. It covered the traditional notions of masculinity and femininity and the newer ideas about being a man and a woman that suggest gender diversity and inclusion.

A talk on **Entrepreneurship** by Ms. Uppma Virdi, CEO of Chai Walli and Australian Businesswoman of the Year 2016, co-organized by Office of Dean of International Relations on March 9, 2018. Women's cell, as part Women's Day celebrations in the Diamond Jubilee year of the Institute, organised **Bring-Your-Daughter-To-Work Day** on March 16, 2018. The faculty, staff and students brought their daughter(s) to the work place on that day. The participants took selfies and photos and tweeted them with IIT Bombay. Ten lucky tweeters were given exciting prizes.



Street play 'Gender Bender' being performed by college students associated with MAVA



Bring-Your-Daughter-To-Work Day



Cultural programmes being performed

Asian Universities Alliance Summit 2018

Prof. Devang Khakhar, Director, IIT Bombay and Prof. P. M. Mujumdar, Deputy Director (Finance and External Affairs), attended the second Asian Universities Alliance Summit at Hainan, China on April 9, 2018.

The Asian Universities Alliance (AUA) is a regional organization established in 2017 with the aim of jointly addressing regional and global challenges, specifically related to higher education and economic, scientific and technological development, by strengthening collaboration among member institutions. AUA acknowledges and promotes shared identity and values in working towards this mission.



Prof. Khakhar also attended the Boao Forum For Asia (BFA) Annual Conference 2018 held from April 8 to 11 in Boao, Hainan Province. Chinese President Xi Jinping delivered a keynote speech at the opening ceremony. The theme of this year's BFA Annual Conference was "An Open and Innovative Asia for a World of Greater Prosperity". The Presidents of the AUA universities participated in the round-table discussion entitled 'The Rise of Asian Universities'. The participants discussed issues such as the responsibilities and missions of Asian universities, the impact of Asian universities in the Fourth Industrial Revolution, innovation and the transfer of technology.

Member Universities (15):

Chulalongkorn University, Thailand
Hong Kong University of Science and Technology, Hong Kong
Indian Institute of Technology Bombay, India
King Saud University, Saudi Arabia
National University of Singapore, Singapore
Nazarbayev University, Kazakhstan
Peking University, China

Seoul National University, Republic of Korea
Tsinghua University, China
United Arab Emirates University, United Arab Emirates
Universitas Indonesia, Indonesia
University of Colombo, Sri Lanka
University of Malaya, Malaysia
The University of Tokyo, Japan
University of Yangon, Myanmar

Compendium On Rural Water Supply And Sanitation In Maharashtra

A compendium of training materials for the capacity building of the engineering colleges on improving the performance of rural water supply and sanitation sector in Maharashtra prepared by the Technology and Development Solutions Cell of Centre for Technology Development for Rural Areas and its partners was recently released by the Chief Minister of Maharashtra Mr. Devendra Fadnavis.

The compendium was used to conduct a two day workshop for 15 colleges associated with the Unnat Maharashtra Abhiyan (UMA).



Chief Minister of Maharashtra Mr. Devendra Fadnavis releasing the compendium

Performing Arts Festival (PAF) Brings Skills And Interests Together

Come March every year, it is only a matter of time before one gets bombarded by indications of the Performing Arts Festival (PAF) through the ubiquitous chants of 'PAF God Hota Hai'. PAF is, undoubtedly, the biggest annual cultural extravaganza held in IIT Bombay every March, where a multitude of students with diverse skills and interests come together and play their part in helping unfold the grandeur of the festival. Whether it be coming up with scripts, music composition, the late-night hours put into practice, or even the demanding prod work needed for the setups and ambiance, everyone involved in PAF works with great dedication and fervor. The inception of PAF actually occurred in the 1970's, and it was called the Entertainment Platform then. However, it was not until 1991, that PAF assumed its current name and form. Growing continuously since then, PAF has had an illustrious history.

This year's PAF did not fail to match up to the expectations of the audience. **"Sandarsh"**, performed on March 28, 2018 by hostels 1, 3, 8, 10, 12 and 16B, showed the importance of perspective in human lives. It also emphasized upon the importance of Ram and Ravana in the current society. In the end, everything boiled down to one fact that there is no absolute evil or absolute good. Everything is just a matter of perspective. PAF very intricately bonded politics, mythology and general notions of the society.



The modern day Yamraj (right) tries to explain the intricacies of life

based on the Pakistani prisoners of war in the year 1965. What war does to countries and how people suffer from it was very artistically portrayed. It showed the conditions of the prisoners of war and the story revolved around a murder mystery in the jail. It also showed the pathetic conditions in which the prisoners were kept and how they were treated by the authorities.

The production work that went into this year's PAF surpassed its predecessors. A lot of new elements like the Pushpak Vimaan of Raavana, holographic projections etc were made by the students. Everything from scratch was built by the students themselves.



The welcome dance

"Khaled" was performed on April 2, 2018 by hostels 2, 7, 9, 14, 15B and 15C. It was based on the infinite loop of creation and destruction. It delivered a strong message that destruction is the father of all the creation. Some things need to be destroyed before a new thing can be created. It showed how human lives were created and how the inevitable cycle of destruction and inception of new and better life forms came into action. Everything in this world has a lifespan. This was very beautifully portrayed in this PAF. **"Aseer-E-Hayat"** was performed on April 7, 2018 by hostels 4, 5, 6, 11, 13 and Tansa. It was



The role and ideology of Raavana was taken to a whole new perspective

Blood Donation Camp By Sthaniya Lokadhikar Samiti And Abhyuday

Sthaniya Lokadhikar Samiti, IIT Bombay in collaboration with Abhyuday, organized a blood donation camp in IIT Bombay on April 7, 2018. It was organized with the Association of Blood Bank of KEM Hospital, Mumbai. Students, faculty, staff and their families participated in the event and a total of 290 donors donated blood for this noble cause. Dedicated efforts by the team of KEM Hospital, along with Sthaniya Lokadhikar Samiti Abhyuday and Institute authorities, made it a successful drive. The Sthaniya Lokadhikar Samiti has been organizing such blood camps for more than a decade. The Government of Maharashtra has also felicitated the Samiti twice for this social work.



Blood donation camp organized at IIT Bombay

Student Gymkhana Award Ceremony Ends On A High Note

The Student Gymkhana Award Ceremony 2017-18 was held on April 7, 2018 to felicitate the exemplary contribution of students in organizational, cultural, sports and technical categories. The event was graced by the presence of Prof. Soumyo Mukherji, Dean (Student Affairs) and Prof. Harish Pillai, Associate Dean (Student Affairs). Awards were first given out to URA (Undergraduate Research Award) winners followed by Organizational awards and then Cultural and Sports in that order. Although the awards were numerous, the audience's enthusiasm never went down as each recipient was lauded with a thunderous applause.



Students cheering during Gymkhana Award ceremony

Institute Valedictory Function For Class Of 2018

IIT Bombay celebrated Valedictory Function for Class of 2018 on April 13, 2018. Prof. Devang Khakhar, Director, IIT Bombay presided over the function. Prof. Suhas S. Joshi, Dean (Alumni & Corporate Relations) and Prof. Soumyo Mukherji, Dean (Student Affairs) attended the function. Two eminent alumni Mr. Shantanu Rastogi, MD of General Atlantic and Ms. Roli Gupta, CEO of Oorjan also graced the event as Chief Guests.

The Outstanding Contribution Awards were also given out to felicitate the members of the Student Alumni Aelations Cell (SARC), who have contributed substantially to the Institute. The awardees were Mr. Deepankar Varshney, Mr. Gaurav Sinha, Mr. Harsh Sethi and Mr. Pranay Nahar.



Dignitaries on dais during Institute Valedictory Function

Kaladarshan 2018: An Underwater Odyssey

Kaladarshan is the annual photography and fine arts exhibition of IIT Bombay, which provides a platform to the entire IIT Bombay artist community to showcase their talent.

This year's edition was organized during March 17-18, 2018. It was themed **underwater** inspired from a celtic folklore, Amhrán na Mara depicting water in form of ocean as the creator of life and various ways in which water directly or indirectly determines our existence. This artistic bond between water and life provoked all ideas behind branding, installations etc of this year's Kaladarshan.

A theme revelation video was created to stop motion involving lots of crafts and green screen photography. This edition also featured first ever themed merchandise, Kaladarshan t-shirts and badges.

The second publicity installation, an Oceanscape depicted different layers of sea, stages of life. It depicted that all the animals exist in the same ocean yet they live in different parts and layers. Similarly every human is unique and have their unique circumstances and situations. Life in the deepest and darkest corners of the ocean says that life must go on.



Oceanscape, a depiction of different layers of sea



The road painting, a drop of water explaining it's own history



Nymph, a boat synonymous to living beings

Then there was Aqua Aura, KD's blue room booth. It included a Facebook display picture campaign involving photoshoots in and around the campus to publicize the cause and featured various Facebook DP frames as well. The third publicity installation was Nymph, a boat synonymous to living beings.

The fourth installation was an attempt at 3D mural involving painting layers of glass panels to compile as an underwater scene. The fifth installation was a collaboration with Surbahar to revamp broken guitars into a beautiful piece of art.

This year's road painting turned out to be a very successful event, attracting almost all tiers of campus residents from small kids to aged people.

This year, around 200 artworks, 100 photographs and 20 craftworks including artworks from students of NGO Muskaan, Aman day care centre and Kendriya Vidyalaya were exhibited, which attracted a footfall of around 10,000 visitors.



Installation in AIDS, a homage to sea monster Akkorokamui

Aavhan 2018 Gets Bigger And Better



The second edition of Aavhan, IIT Bombay's premier sports festival was organized during March 29 to April 1, 2018. The four - day extravaganza brought together participants from all over India, to combine the thrill of competition with the joy of sports. Day three saw the most amazing of all matches across different sports. The level of excitement and enthusiasm amongst the audience and the expectations from the supporters built up the pressure on the teams. The ones who could deliver their best performance then emerged as the champions.

The legacy of Inter - IIT was carried forward as the host team won several tournaments. The tale of victory began when IIT Bombay Girls' Volleyball team bagged gold with an easy win. The glory continued as the Boys' Team easily earned their victory over the opponent team. The cricket team was led to victory by its hardworking and dedicated players. Football team

of IIT Bombay Sanatakk added another gold by their spectacular performance against the opponent. Kho-Kho teams had their share of victory as the girls' team won the tournament. The boys' team, only by a very small difference, ended up as the runners-up in the tournament. And similar was the case with the boys in table tennis. Several players grabbed the top positions in the individual tournaments.

With this, the enthralling extravaganza of great sportsmanship came to an end. The efforts of the home contingent led them to the much-deserved victory. They proved their mettle yet again, by defeating one of the finest talents from across the country.

Aavhan is a journey that has just begun. With only two editions, it has earned its position among the top Sports Fests in the nation. It is only going to get bigger and better with time.

Research in focus

An Affordable In-House Developed System For Precise Irrigation



- Solar powered system
- Completely automated system
- System will sustain for 3-4 days without solar energy
- Modular design
- Ease for use
- Designed according to Indian farmer's condition
- Low power, signal processing unit
- Wireless communication
- Data displayed on mobile
- Soil moisture sensor
- Soil temperature sensor
- Ambient humidity sensor
- Ambient temperature sensor

Soil monitoring system developed at IIT Bombay

It is increasingly becoming apparent that technology can enhance the productivity of resource-challenged agricultural practices in developing countries. In India, the agriculture uses 80% of available water and out of which 40% water is wasted. Over irrigation causes the leaching of micro and macro nutrients from the soil contaminating the ground water and reduced crop yield. The efficiency of water usage in the agricultural fields needs to be improved. With this motivation, we have developed a low cost soil monitoring system. The system is equipped with soil moisture sensor,

soil temperature sensor, ambient humidity sensor and ambient temperature sensor. Based on these parameters, farmers are advised irrigation control. The developed system finds application in open forms, green houses, gardening and research/ agricultural labs.

Key features of the system is shown in the figure. The system is powered by a solar panel and is capable of working for 3-4 days without solar energy. Entire system is made modular, where each components of the system like solar panel, signal processing unit and sensors can be replaced individually. The system is designed according to the Indian farmer's condition. The height of the system is adjustable and it can vary from 1m to 3m based on the crop types. Data from all the sensors are logged into a mobile phone using GSM.

Technical specifications of sensors:

Sensors	Measurement range	Accuracy	Response time
Soil moisture	0 - 100%	$\pm 3\%$	10 seconds
Soil temperature	0 0 5 C - 80 C	$\pm 1\%$	5 seconds
Ambient humidity	0 - 100% RH	$\pm 1\%$	5 seconds
Ambient temperature	0 0 5 C - 80 C	$\pm 1\%$	5 seconds

Field Deployments:

The prototypes of the soil monitoring system are developed and tested successfully in our laboratory environment. The developed system can measure soil moisture content, soil temperature, relative humidity, and ambient temperature. Fig. 2 shows the pilot studies across various regions in India. We had tested the prototype in an agricultural university, Hyderabad for close to 2 months. The prototypes were also tested at agricultural fields in Wardha, Maharashtra with the help of farmers. The developed system is being improvised based on the feedback from the agricultural labs and farmers. Currently our systems are being piloted at different states in the country.



Fig2 (a). Deployment at Hyderabad

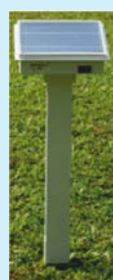


Fig2 (b). Deployment at Mumbai



Fig2 (c). Deployment at Delhi

Prof. Maryam Shojaei Baghini, Department of Electrical Engineering, mshojaei@ee.iitb.ac.in

PG Drama Night - Pageant Of Acting



PG Culturals Drama Night was organized in IIT Bombay on March 16, 2018. It was a beautiful pageant of acting, voice-over, lights and direction led by the team of post graduate students of IIT Bombay. A theatrical competition with over 24 different departments participated in a group of four departments per pool. PG Drama night was blessed with the presence of some famous personalities of the field such as Mr. Shiv Kunal Verma (author of 'Indo-Pak war 1962'), and Mr. Abahamad Mohimun (renowned script writer). Apart from these personalities, the plays in PG Drama Night were judged by theatre artists Ms. Sonali Bhardwaj, Ms. Vandana Bhushan, Mr. Errol Rodrigues, Ms. Preeta Mathur, and Mr. Aman Gupta. The Drama Night was appreciated and applauded by an audience of more than 500 and the quality of theatre has improved with every passing year.

PG Night And Kaleidoscope



A unique event, held on March 18, 2018 at Convocation hall, had a reception of over 1400 people. The PG Night comprised band competition, group dance competition and the most awe-inspiring, breathtaking, magnificent and spectacular showcase event - Kaleidoscope - The Fashion show. Many famous personalities such as Mr. Meet Jain, Mr. Vaibhav Kumar, Ms. Anchal Trivedi from Boogie-Woogie Dance group witnessed this heart-throbbing 4-hour-long event performed and organised by post graduate students of IIT Bombay. Hundreds of students practiced for over two months to compete in the "Best Event of IIT Bombay Culturals". PG Night has often received appreciative one-liners such as 'The best night they have been to', 'I didn't know IITians are so talented in culturals too' etc. from some of the best in their field.

National Yoga Championship 2018

The first ever “**National Level Yoga Championship**” conducted by IIT Bombay was held on March 30, 2018. It witnessed a participation of 140 yoga enthusiasts competing against each other for prizes worth Rs. 30,000 which included yoga mats, belts, certificates and medals for both male and female categories. The event had participants coming from Bengaluru, Hyderabad, Raipur, Rajkot, Pune and Nashik. The competition held from 8:30 am to 6:00 pm had two sessions. The competitors were divided into four age groups namely 17-21, 22-25, 26-35 and 36-55 with the last age group registering the maximum participation. Some of the important asanas performed were Setu Bandha Sarvangasana, Padma Bakasana, Poorna Matsyendrasana and Baddha Padmasana among others. There were a total of eight judges from Maharashtra State Yoga Federation to evaluate the participants. The evaluation was based on four asanas which were picked from a lot and another asana of their own choice. Dr. Deepak Bagadia, Devang C. Shah and Shammi Gupta presided over the event as the chief guests. They were felicitated by Prof. E.P. Rao and Prof. Neeraj Kumbhakarna. The main attraction of the event was a group of specially abled children who performed the same asanas alongside others. A 62-year-old lady from Rajkot performed a somersault at the end, much to the awe of the audience.

The entire event was organized by the “Yogastha- Wellness Club” of IIT Bombay headed by Mr. Chandra Pratap Singh. He was assisted by the four event heads Ms. Priyanka Jena, Mr. Ashutosh Khare, Mr. Nirmal R. Krishnan and Ms. Athira Pushpakaran.



Participants of National Yoga Championship (Age 26-35 Group)

Talk On ‘Yoga: The Science And Biomedical Research’

Prof. Satbir Singh Khalsa, Director of Research for the Yoga Alliance and the Kundalini Research Institute, gave talk on ‘Yoga: The Science and Biomedical Research’ on March 6, 2018. Prof. Satbir Singh Khalsa is also a Research Associate at the Benson Henry Institute for Mind Body Medicine, Research Affiliate of the Osher Center for Integrative Medicine and an Assistant Professor of Medicine at Harvard Medical School at Brigham and Women’s Hospital in Boston.

The talk was about the practice of yoga and yoga therapy. Prof. Khalsa explained the four broad divisions of yoga - physical postures, breathing techniques,

deep relaxation and meditation. He pointed out that the worldwide popularity of yoga was increasing in last couple of decades. In the US alone, 36.7 million people do yoga regularly and about 83 million are eager to take up yoga. He shared other positive trends in promotion of yogic science such as the celebration of the International Day of Yoga in June and the popularization of yoga through various print and visual media. The psycho-physiological impact of yoga was later explained based on a series of medical trials conducted. Different field experiments that compared regular yoga practitioners with the non-practitioners was discussed.



Prof. Satbir Singh Khalsa being felicitated by Dean (Student Affairs) Prof. Soumyo Mukherji

IIT Bombay Participates In Gulf Education And Training Exhibition (GETEX)

IIT Bombay, for the first time, participated in the Gulf Education And Training Exhibition (GETEX) in Dubai, UAE organised by EdCIL (Educational Consultants of India) under the 'Study in India' initiative by Ministry of Human Resource Development (MHRD), Government of India during April 12-14, 2018. The 'Study in India' initiative aims to make India a preferred education hub for students from across the globe, by elevating its position in the global educational landscape.

Along with IIT Bombay, other IITs including IIT Madras, IIT Roorkee and IIT Ropar participated. The exhibition attracted around 35,000 local and expatriate students who are at the threshold of college life

and actively looking for higher education, professional development and training options. Around 30-35 leading foreign universities participated including Curtin University, Wollongong University, Birmingham University and many more from UAE, Saudi Arabia and neighbouring countries.

Prof. P. Sunthar from the Department of Chemical Engineering and Mr. Arnab Das, Executive Officer (International Relations) represented IIT Bombay in the GETEX.



Study in India' stall at Gulf Education And Training Exhibition (GETEX)

Celebration Of Chatrapati Shivaji Maharaj Jayanti

IIT Bombay Sthaniya Lokahdikar Samiti organized series of events on the occasion of Chatrapati Shivaji Maharaj Jayanti held on March 18, 2018. The celebration started with a procession witnessing participation of campus residents along with their family members, in traditional dresses. A drawing competition organized for the students on the occasion received an overwhelming response.

Sthaniya Lokahdikar Samiti also organised a free medical camp with the help of Fortis hospital on March 19, 2018. Around 250 campus residents visited and were greatly benefited by this camp. A lecture by medical experts was held to create awareness about breast cancer. A lecture by Mr. Susen Naikwade on "Shivaji Maharaj and his time management" was well appreciated by large audience. Mr. Arun Manjrekar (Secretary) and Mr. Pramod Bhatade expressed their gratitude for the active participation and co-operation of the campus residents during this event.

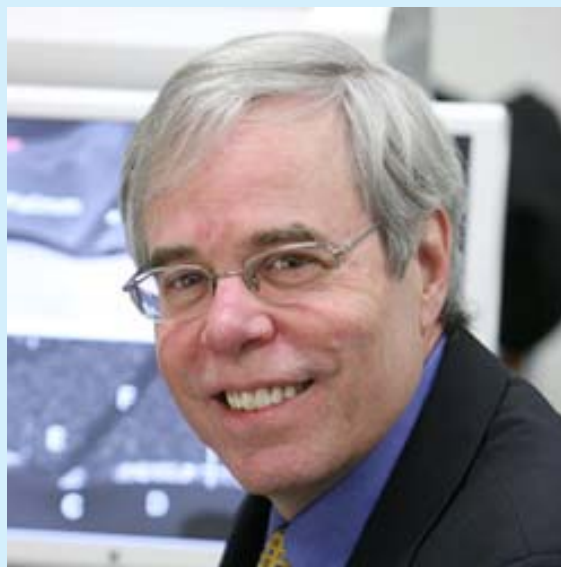


Drawing competition organized during the event

Institute Colloquium /
Lectures



Prof. Ajit Kembhavi, Emeritus Professor and Fellow, Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune, delivered an Institute Colloquium on *"Space Astronomy in India - Great Collaborative Opportunities for Scientists and Technologists"* on March 22, 2018



Prof. Peter Voorhees, Frank C. Engelhart Professor of Materials Science and Engineering, Northwestern University, USA delivered an Institute lecture on *"Solidification in 4D: From Dendrites to Eutectics"* on March 23, 2018



Mr. Amitava Bhattacharya, CEO of NGO banglanatak.com, delivered an Institute lecture on *"Culture as a tool for Inclusion/ Economics of Culture/ Road to Peace/Social Entrepreneurship - a Cultural Way Forward"* on April 6, 2018



(Retd.) Ambassador Deepak Bhojwani, Indian Foreign Service (Retd) - Ministry of External Affairs (MEA), Former Ambassador – Latin America, Consultant for Latin America and the Caribbean – LATINDIA, delivered an Institute Distinguished lecture on *"India and Latin America: The way forward"* on April 10, 2018



Prof. V. Balakrishnan, Professor Emeritus, IIT Madras delivered an Institute Lecture on “*Scaling behaviour, scale invariance, and power laws in the natural sciences*” on April 11, 2018



Dr. Guruswamy Kumaraswamy, Polymer Science and Engineering Division, CSIR-National Chemical Laboratory, Pune delivered Prof. K. C. Khilar Memorial Lecture on “*Controlling the Assembly of Lipid Molecules*” on April 12, 2018



Mr. Arun Goyal, Special Secretary in the Goods and Services Tax (GST) Council delivered an Institute lecture on “*Challenges of implementing GST in Indian Federation*” on April 13, 2018

Invited Talk / Lectures / Visits

Prof. Ambarish Kunwar, Department of Biosciences and Bioengineering gave a seminar “*Cargo Transport by a Team of Motor Proteins: Effect of Temperature and Effect of Intersections*” at Physics Department of New York University Abu Dhabi, Abu Dhabi on March 7, 2018.

Prof. Rajkumar S. Pant, Department of Aerospace Engineering, conducted a four-day field trial of a tethered aerostat system recently for providing last-mile communication in remote areas in Uttarakhand. This is part of an ongoing project sponsored by Information Technology Development Agency (ITDA), Government of Uttarakhand to develop a proof-of-concept of such a system. A video report of this trial is available at the following link on YouTube: <https://www.youtube.com/watch?v=Hb9IKWhgsNU&t=2s>

Prof. Rajkumar S. Pant, Department of Aerospace Engineering, conducted a one-day workshop March 15, 2018 on “*Morphing UAVs*” conducted by Uttarakhand Science Education and Research Center (USERC) at UPES Dehradun

Departmental Lectures

Department of Aerospace Engineering

Dr. S. Sampath, Director, Cranfield University, U.K. gave a presentation on "*Emerging Propulsion Technologies*" on March 7, 2018

Dr. Florin Mingireanu, Distinguished Research Scientist, Romanian Space Agency delivered a talk in a seminar on "*Aerospace Research Projects in Romania: Microlauncher Development within ESA Framework*" on March 26, 2018

Adm. (retd.) Dilip Deshpande, delivered a lecture on "*Perspective on Naval Aviation*" on April 24, 2018

Department of Biosciences and Bioengineering

Dr. Namit Ranjan, Max Planck Institute for Biophysical Chemistry, Germany delivered a talk on "*RNA Epitranscriptome in Translation Regulation*" on April 5, 2018

Prof. Daniel Huster, Institute for Medical Physics and Biophysics, Leipzig University, Germany, gave a talk on "*Structural Dynamics of Peptide Ligand G Protein-Coupled Receptors in Lipid Membranes*" on April 9, 2018

Dr. Subhabrata Majumder, Pfizer Inc, USA, delivered a lecture on "*Impacting discovery and development of novel therapeutics with NMR Spectroscopy*" on April 19, 2018

Dr. Shyam Diwakar, Amrita Vishwa Vidyapeetham, Kerala delivered a talk on "*Cerebellum, motor learning and neurological conditions: biophysics of single neurons to microcircuits abstractions*" on April 16, 2018

Dr. Subhabrata Majumder, Biotherapeutics Research and Development Pfizer Inc, Chesterfield, Missouri, USA, delivered a talk on "*Impacting discovery and development of novel therapeutics with NMR Spectroscopy*" on April 19, 2018

Prof. Siddhartha S. Jana, Indian Association for the Cultivation of Science, Kolkata, delivered a talk

on "*Nonmuscle Myosin II Activity Controls Membrane Protrusive Activities*" on April 25, 2018

Department of Chemical Engineering

Prof. Raj Ganesh S. Pala, IIT Kanpur, gave a talk on "*Steering selectivity in Crystal Reaction Engineering, Electrocatalysis and Heterogeneous Catalysis*" on March 22, 2018

Department of Civil Engineering

Prof. Debadatta Swain, IIT Bhubaneswar, gave a talk in a seminar on "*Is our energetic ocean leading us into climate extremes: An investigation of the North Indian Ocean and its role in modulating theregional climate?*" On March 14, 2018

Dr. Sreekanth J Kartha, Senior research scientist, CSIRO, Australia, delivered a seminar in a talk on "*Tailoring groundwater models as practical environmental decision support tools*" on April 4, 2018

Prof. Chittaranjan Ray, University of Nebraska, delivered a lecture on "*Managing water for food security*" on April 9, 2018

Ms. Savitri Kumari, University of Oxford, delivered a talk on "*1.5°C & 2°C of warming: Investigating the Change in Return Period of Extreme Precipitation Events and Associated Disaster Risk in Uttarakhand, India*" on April 17, 2018

Department of Chemistry

Dr. Shachi Gosavi, National Center of Biological Sciences, Bangalore, delivered a talk on "*Understanding the effect of protein function on protein folding*" on April 26, 2018

Department of Computer Science and Engineering

Prof. Alain Finkel, Ecole Normale Supérieure Paris-Saclay, gave a talk on "*Well Structured Transitions Systems (WSTS): The New Class of WSTS Without WQO*" on March 5, 2018

Prof. Anand Srivastav, Kiel University, Germany, gave a talk in a seminar on "*Finding Euler Tours*

in One Pass in the W-Streaming Model with $O(n \log n)$ Memory" on March 13, 2018

Prof. Vivek Sarkar, Georgia Institute of Technology, gave a talk in a seminar on "*Software Challenges for Extreme Heterogeneity*" on March 23, 2018

Dr. Luiz DeRose, Cray Inc., gave a talk on "*Performance and Programmability Challenges in Current and*

Future Supercomputer" on April 19, 2018

Department of Electrical Engineering

Dr. P T Akhil, Post doctoral researcher, IISc, Bangalore delivered a talk on "*Topics in Network Utility Maximization: Interior point and Finite-step Methods*" on March 27, 2018

Ms. Kanchan Bahirat, University of Texas at Dallas, delivered a lecture on "*Towards Efficient 3D Content Generation for Mixed Reality*" on April 2, 2018

Prof. Neetu Joshi, delivered a talk on "*Graphene based plasmonic integrated circuits for Terahertz Applications*" on April 3, 2018

Mr. Srinath Sridharan, Co-Founder and CEO, Aura Semiconductor, delivered a talk on "*Bluetooth Smart Radio Architecture and Design*" on April 11, 2018

Mr. Prateek Verma, Research Associate, Stanford University CCRMA, delivered a talk on "*Supervised and Unsupervised Audio Transforms*" on April 19, 2018

Department of Energy Science and Engineering

Dr. H. N. Sharan, Director of Fichtner Consulting Engineers in India, delivered a talk on "*Beyond electrification for sustainable village development*" on April 11, 2018

Department of Humanities and Social Sciences

Prof. William Edelglass, Director of Environmental Studies at Marlboro College in Vermont, USA delivered a talk in a seminar on "*The history of the concept of race*"

on March 19 & 20, 2018 in the form of Part I and Part II

Dr. Sandali Thakur, Research Co-ordinator, TISS, Mumbai gave a talk in a seminar on *"Imag(in)ing Traditions: The Contested Canvas of Mithila Paintings"* on March 28, 2018

Prof. Suresh M, TISS, Mumbai gave a talk in a seminar on *"Predicament of Postcoloniality: Governmentality and Adivasi Question"* on April 4, 2018

Dr. George, NMIMS deemed University, Mumbai, gave a talk on *"Hawakhaana in Vasai-Virar – Urban Housing in Mumbai's Periphery"* on April 18, 2018

Department of Mathematics

Dr. Debayan Maity, Affiliation: Postdoc, Institut de Mathématiques de Bordeaux, France, delivered a talk on *"Mathematical Analysis of a Rigid Body in a Viscous Gas"* on April 26, 2018

Department of Mechanical Engineering

Dr. Niranjana Ghaisas, Stanford University, delivered a talk on *"Large-eddy simulation study of combined configuration and stability effects in wind farms and development of geometry-based models for layout evaluation"* on April 4, 2018

Mr. Dan Woodman, Associate Director in Core R&D for MEC at Dow Chemical, MI, USA, delivered a talk on *"Customer Centered Advance Product Development"* on May 9, 2018

Department of Metallurgical Engineering and Materials Science

Dr. Simon Hutton, Sr. Application Engg., Kratos Analytical, UK, delivered a talk on *"Applications of ESCA"* on April 26, 2018

Department of Physics

Prof. Amitabha Nandi, gave a talk on *"Shaping the wing of a fruit-fly: Active mechanics and dynamics of epithelia during morphogenesis"* on March 14, 2018

Prof. Sylke Blumstengel, Humboldt University, Germany delivered a talk on *"Hybrid*

inorganic/organic semiconductor systems for optoelectronics and photonics" on March 26, 2018

Dr. Basant Chitara, Ben Gurion University, Israel, delivered a talk on *"Optoelectronics and Electromechanics of Two Dimensional Materials"* on March 28, 2018

Dr. Reetanjali Moharana, Racah Institute of Physics, Israel, delivered a talk on *"High energy astrophysics during the multi-messenger era"* on April 2, 2018

Dr. Nirmal Punetha, MPIPKS, Dresden, delivered a talk on *"Synchronization properties of delay-coupled electronic oscillators: effects of heterogeneity"* on April 4, 2018

Dr. Vaibhav Tiwari, Cardiff University, delivered a talk on *"Constraining black-hole spins with gravitational wave observations"* on April 5, 2018

Prof. Michele Heurs, Centre for Quantum Engineering and Space-Time Research (QUEST), Germany, delivered a talk on *"Gravitational wave detection using laser interferometry beyond the standard quantum limit"* on April 6, 2018

Dr. Pabitra Das, Université Paris-Sud, delivered a talk on *"Surface plasmon nano-optics: beyond traditional understanding"* on April 6, 2018

Dr. Udai Raj Singh, University of Hamburg, delivered a talk on *"Spectroscopic-Imaging and Spin-Polarized STM Studies of Superconductivity, Nematicity and Magnetism in 11-Iron Chalcogenide Superconductors"* on April 10, 2018

Prof. V. Balakrishnan, IIT Madras, delivered a lecture on *"Scaling behaviour of first passage times for mortal random walks on hierarchical graphs"* on April 10, 2018

Prof. Radha Balkrishnan, IMSc Chennai, delivered a talk on *"Solitons in Bose-Einstein Condensates"* on April 12, 2018

Mr. Aveek Chandra, Laboratoire Kastler Brossel UPMC, Paris, gave a talk on *"Coupling 1D Atom Arrays*

to an Optical Nanofiber: Platform for Waveguide QED experiments" on April 16, 2018

Prof. Bhabani Prasad Mandal, BHU, delivered a talk on *"Complex extension of quantum theories"* on April 19, 2018

Centre for Policy Studies

Mr. Subrat Das, Executive Director, Centre for Budget and Governance Accountability (CBGA), New Delhi, delivered a talk in a seminar on *"Union Budget 2018-19 – what adds up and what does not?"* on March 6, 2018

Prof. Wandana Sonalkar, Tata Institute of Social Sciences (TISS), delivered a talk on *"Do schemes for the poor address gendered poverty?"* on April 24, 2018

Centre for Urban Science & Engineering (CUSE)

Prof. Hideki Yaginuma, Tokyo University of Science, Japan gave a talk in a seminar on *"Time series analysis of land use change by Shinkansen development in Japan"* on March 6, 2018

Prof. Makoto Chikaraishi, Professor at Hiroshima University, Japan gave a talk on *"New mobility services in rural areas of Japan: Some theoretical and empirical investigations"* on March 6, 2018

SJM School of Management

Dr. Satchidanand Shevde, a phenomenal orator on the lives of Indian national freedom fighters and spiritual seekers, delivered a talk on *"Chhatrapati Shivaji and Young India"* on March 5, 2018

Dr. Ashok Modak, Indian Council for Cultural Relations (ICCR), delivered a talk on *"Dr. Ambedkar's Vision on Economy, Society and Governance"* on April 13, 2018

Industrial Engineering and Operations Research

Dr. Pratyush Chakraborty, University of California, Berkeley, delivered a talk on *"Renewable Energy Aggregation: A Coalitional Game Theory Approach"* on April 12, 2018

Interdisciplinary Programme (IDP) in Climate Studies

Prof. Yuan Xu, Department of Geography and Resource Management & Institute of Environment, Energy and Sustainability, The Chinese University of Hong Kong gave a talk in a seminar on *"Climate Change, Renewables and Industries in China: Puzzles, Strategies and Policies"* on March 21, 2018

Dr. R Krishnan, Executive Director, Centre for Climate Change Research, IITM Pune, delivered a talk on *"Climate Change and its impacts on the Indian summer monsoon"* precipitation on April 2, 2018

Mr. Rahul Chopra, Coordinator, TROPICUS, International Council of Science, Indian Institute of Science Education and Research (IISER), Pune gave a talk in a seminar on *"Climate Across the Curriculum: Integrating Climate and Science Education"* on April 4, 2018

'Yogastha' - Wellness Club of IIT Bombay

Mr. Matthijs Cornelissen, Sri Aurobindo Ashram in Pondicherry, delivered a talk on *"Could reality be totally different from what we think?"* on April 15, 2018

Prof. Suneet Varma, University of Delhi, delivered a talk on *"Psychic Transformation in Integral Yoga: Music, healing, and beyond"* on April 16, 2018

Mr. Joshua Pollock, a Heartfulness trainer and practitioner from the United States and an accomplished western classical violinist delivered a lecture on *"Learn Meditation The Heartfulness Way"* and Book reading followed by live demonstration on March 24, 2018

Awards and Distinctions

Prof. Parinda Vasa, Department of Physics, has been awarded Young Career Award in Nano Science and Technology - 2018,

by the Department of Science and Technology (DST)

Prof. Shripad Mahulikar, Department of Aerospace Engineering has been nominated on the Academic Council of the Solapur University, Solapur

Prof. Anand B. Rao, Centre for Technology Alternatives for Rural Areas, has been selected as a Lead Author for the Intergovernmental Panel on Climate Change (IPCC) Assessment Report 6 (AR6) for the Working Group-III

Prof. Jayesh Bellare, Department of Chemical Engineering, was conferred the Lifetime Achievement award by the Vice President of India. The Young Scientist award was conferred on Mr. Prashant Chikramane (PhD-2013). Their research group includes Prof. A .K Suresh, Department of Chemical Engineering, Dr. S.G. Kane, IIT Bombay alumnus, Dr. Mayur Temgire (PostDoc), Mr. Abhirup Basu (MTech-2017), Ms. Neha, Ms. Neelakshi and others. The event organized by Ministry of AYUSH CCRH-WHD Conference was held during April 10-11, 2018 at Delhi. The awards recognized their path-breaking research on the structure of homeopathic remedies in the realm of nanotechnology, and extensive studies on the hormetic biological effects of nanoparticles

Prof. Raghwan B. Sunoj, Department of Chemistry, has joined as an Associate Editor of WIREs: Computational Molecular Science for a term of three years

Prof V Jothiprakash, Department of Civil Engineering, has received Indian Society of Technical Education (ISTE)'s *"U.P. Government National Award for Outstanding Work Done in Specific Areas of Engineering and Technology for the year 2017"* in recognition of work done in the area of Interaction with Industry in Hydrology and Water Resources Engineering

Publications

Prof. R. S. Pant and M. Irfan Alam, Department of Aerospace Engineering, published a paper titled *"Multidisciplinary approach for solar area optimization of high altitude airships"*, in Elsevier Energy Conversion and Management, 2018, Vol.164, pp.301-310

Prof. R. S. Pant and M. Irfan Alam, Department of Aerospace Engineering, published a paper titled *"A multi-node model for transient heat transfer analysis of stratospheric airships"*, Elsevier *Advances in Space Research*, Vol. 59, pp. 3023-3035

Students Category

Mr. Mohd. Irfan Alam, Research Scholar, Department of Aerospace Engineering, under the supervision of **Prof. R. Pant**, Department of Aerospace Engineering, presented a paper entitled *"Multi-objective multidisciplinary design optimization of high altitude airships"* at the National Conference on Multi-disciplinary Analysis and Optimization, organized by IISc, IIT Madras and Design Division of The Aeronautical Society of India, at Bengaluru during March 24-25, 2018

Mr. Manideep Desham Reddy, M. Tech Student, Department of Aerospace Engineering, presented a paper *"Multi-Disciplinary Shape Optimization of Stratospheric Airships"*, co-authored by **Prof. R. S. Pant** at 31st National Convention of Aerospace Engineers held at Chennai during February 9-10, 2018

Notifications

Prof. Prita Pant, Department of Metallurgical Engineering and Materials Science has been appointed as the Associate Dean (Academic Programmes) w.e.f. March 7, 2018

Prof. Santanu Bandyopadhyay, Department of Energy Science and Engineering has been appointed as the Associate Dean (IPS-II) w.e.f. March 15, 2018

Appointment

Prof. Rahul Maitra, Department of Chemistry, has been appointed as Assistant Professor w.e.f. March 19, 2018



Mr. Raj Kumar Mishra has been appointed as Chief Security Officer w.e.f. March 19, 2018



Prof. Amber Jain, Department of Chemistry, has been appointed as an Assistant Professor w.e.f. March 26, 2018



Prof. Pennan Chinnasamy, Centre for Technology Alternatives for Rural Areas, has been appointed as an Assistant Professor w.e.f. March 27, 2018



Prof. Avradeep Pal, Department of Metallurgical Engineering and Materials Science, has been appointed as an Assistant Professor w.e.f. April 2, 2018



Mr. Naresh Ambati has been appointed as Senior Technical Officer w.e.f. April 4, 2018



Dr. Prabhakaran Ramasamy has been appointed as Senior Sports Officer w.e.f. April 6, 2018



Retirements on March 31, 2018

Prof. B.L. Tembe, Department of Chemistry, has retired after 31 years of service



Prof. Supratim Biswas, Computer Science and Engineering, has retired after 38 years of service



Mr. Ajit Kumar Jena, Chief Technology Officer, Computer Centre, has retired after 26 years of service



Mr. Sheshgiri T. Jambigi, Sr. Technical Supdt., Mechanical Engineering, has retired after 39 years of service



Mr. H. S. Ganeshkumar, Superintendent, Hospital, has retired after 37 years of service



Mr. Jaikaran Yadav, Sr. Driver (Selection Grade), Administration, retired after 34 years of service



Retirements on April 30, 2018

Mr. Dilip D. Dey, Assistant Technical Officer, CSRE, has retired after 36 years of service



Ms. A. Nirmala Raghavan, Sr. Administrative Officer, Dean R & D office, has retired after 39 years of service



In the Wilderness

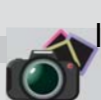


Photo Credit :
by Mr. Raghav Khandelwal
Department of Chemical Engineering

Salt'n Pepper

by Prof. Arun Inamdar

'Don't think its easy for just anyone to be a part of IIT...one has to survive the 'out-of-the-box' aesthetic sense and phobias of the residents there, besides a constant urge to 'discipline' everything around them!'



CEP courses scheduled during May - June 2018				
Starting Date	Duration	Course Name	Faculty	Department
Open Programmes : May				
20-5-2018	6 Days	Orienting To Lead Organization FOR COMPETITIVE GROWTH	Prof. S. Bhargava	School Of Management
21-5-2018	5 Days	Finite Element Method and Applications In Civil Engineering	Prof. Eldho T. I.	Civil Engineering
24-5-2018	3 Days	Learning And Organization Development: Science And Innovative Practices	Prof. Ashish Pandey	School Of Management
30-5-2018	11 Days	Monsoon Course On Hci 2018	Prof. Anirudha N. Joshi	Industrial Design Centre
30-5-2018	11 Days	Certificate Course On Piping Engineering	Prof. Arun S. Moharir	Chemical Engineering
Open Programmes : June				
4-6-2018	5 Days	Biology For Engineers	Prof. Ambarish Kunwar	Bioscience And Bioengineering
7-6-2018	3 Days	Research Approaches And Methods In Management And Social Sciences	Prof. Ashish Pandey	School Of Management
11-6-2018	5 Days	Laboratory And Ergonomic Safety For Engineers	Prof. Ambarish Kunwar	Bioscience And Bioengineering

