



Campus diary

November 2015

Link : www.iitb.ac.in/en/activities/campus-diary

INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

IIT Bombay emerges as a big winner in the latest Rankings *Ranked among top 30 in the Times Higher Education BRICS and Emerging Economies Rankings 2016* **Second most employable Institute in India : QS Survey**



IIT Bombay is ranked 29th in the Times Higher Education BRICS (Brazil, Russia, India, China and South Africa) and Emerging Economies Rankings, up from its last year's position of 37.

The inclusion of IIT Bombay in the BRICS and Emerging Economies rankings is a significant achievement proving yet again that the Institute is among the best institutions.

Congratulating IIT Bombay on its achievement, Phil Baty, Editor, The World University Rankings said, *"The 2016 BRICS and Emerging Economies Rankings use the same 13 rigorous and demanding performance indicators as the overall World University Rankings, so institutions have to demonstrate high standards of performance across teaching, research, international outlook*

and industry links. We also only rank the very best universities from a highly competitive field of 48 emerging economy countries- so to make the top 200 list is a great achievement in itself and Indian Institute of Technology should be congratulated."

IIT Bombay ranked 93 in the first edition of Quacquarelli Symonds (QS) Graduate Employability Rankings. The criteria on which the Institute was ranked were : the reputation of a university has among employers (weighted at 30%), alumni outcome (20%), employer partnerships (25%), employer presence on campus (15%) and graduate employment rate (10%). The only Institute in India which is ranked higher than IIT Bombay in the rankings is IIT Kharagpur which stands at 77.

Prof. Devang V Khakhar, Director, IIT Bombay expressed his happiness with the Institute doing exceedingly well in the rankings and said, *"We are extremely happy with the continuous progress that we are making in the World Rankings. In the past, we have reaffirmed our dominance in the country as a leading institute in the field of engineering and now we are proving that we are one of the best in the world as well. The recent rankings are a testament to the successful, ongoing evolution of our Institute as a global education center in the field of engineering education and research."*

In its maiden project, the QS Graduate Employability Rankings survey analyzed over 44,000 responses from 1,239 universities. Experts took a year to conduct thorough investigations before reaching their conclusions.

Announcement of Essay Competition Winners

As part of the Vigilance Awareness Week the Vigilance Cell had organized an Essay Competition. They received 35 entries from students, staff and faculty. The essays were evaluated by Prof. Dipan Ghosh, Emeritus Professor of Department of Physics (Former Deputy Director, Former Dean of Students Affairs, Former Dean of Resource Mobilization, Recipient of Excellence in Teaching Award and Life Time Achievement Award and the winners were announced.

The winners are as follows :

Students

- First Prize, (Rs. 10,000)
Mr. Anuragh Nagaich
(M. Tech., CSRE)
- Second Prize, (Rs. 7,000)
Mr. Atharva S Kelkar (DD, CE)
- Third Prize, (Rs. 4,000)
Mr. Dileesh P V (PhD, ME)

Honorable Mention Prize
(Rs. 2,000 each)

- Mr. Sagat Shaunik (M. Phil, HSS)
- Mr. Karan Taneja (DD, EE)
- Mr. Devanand (PhD, IEOR)

Employees

- First Prize, (Rs. 10,000)
Mrs. Lathika Das (Jr. Supdt, MEMS)
- Second Prize, (Rs. 7,000)
Mrs. Madhu (Executive Officer,
Publications and Public Relations)
- Third Prize, (Rs. 4,000)
Prof. R S Pant (Professor, AE)

Observance of National Constitution Day at IIT Campus School & Jr. College



National Constitution Day at IIT Campus School & Jr.College

National Constitution Day was observed at IIT Campus School & Jr. College on November 26, 2015. Shri. Shamrao. D. Wakode from IIT Bombay was the Special Guest for the event. The programme started with the hoisting of the National Flag and was soon followed by floral tributes to the father of the Constitution, Dr. B. R. Ambedkar. The Main attraction of the event was reading of the preamble of our Constitution by the students, teachers and non-teaching staff together.

The programme also witnessed a 'Procession' being carried out by the students of Std I to XII, along with the teaching & non-teaching staff inside the campus. Students held placards, banners, posters about the importance of Constitution and shouted slogans like



'Procession' by the students of Std 1 to XII, teaching & non-teaching staff

"Baba Saheb Ambedkarancha Vijay Aso" and **"Long live Constitution"**. The programme concluded with a quiz contest on the National Constitution which saw participation from students of Std V to XII.

IIT Campus School Exhibition



Exhibits of the Science and Maths Projects by the students of IIT Campus School

IIT Campus School and Jr. College organized an Exhibition of the Science and Maths Projects prepared solely by the students to show case their talent, on November 24, 2015.

The exhibition was inaugurated by Prof. P. P. Date, Convener-Academic Policy Committee and was announced 'open' by Prof. Satish Vitta, Associate Chairman who was the Chief Guest for the occasion.

The students of each class were grouped into teams of 3 to 4 members and were asked to prepare the projects. There were altogether 90 Projects exhibited; 35 from Std I to IV (Primary Section), 28 from Std V to VII (Middle School), 22 from Std VIII to X (Secondary Section) and 5 from Std XI (Jr. College).

Prof. Deepanshu Choudhary, Convener Administrative Policy Committee, Dr. Prem Kumar, Registrar, Mr. K.V. Reghuthaman, DR (Admn.II), Mr. Yogesh Patil, A R (Admn.II), other staff, family of students and eminent persons from IIT Bombay came to see the exhibition and encourage the students.

Prof. Anindya Dutta (Chemical Dept.), Prof. Ruchi Anand (Chemical Dept), Prof. Nina Sabnani (IDC) and Mr. Shanmukha Rao (Post Doc fellow from Physics Dept.) were the judges for the event. The prize winners were announced at the end of the event.



Students demonstrating their project work in the exhibition

How to measure sustainable progress

In September, The United Nations General Assembly adopted Sustainable Development Goals (SDGs), to be met by the year 2030. These important goals range from poverty eradication and improvements in education and health to the protection of global assets, including the oceans and a stable climate. Unfortunately, neither the SDGs nor their background documents explain how governments should judge whether the development programs they undertake to meet the goals are sustainable.

The system of national accounts (SNA) that is in common use today records resource flows such as consumption, investment, employment, and government expenditure. The SNA is designed to measure gross domestic product (GDP), which is a flow of income (so many international dollars per year). However, because GDP can increase despite the depletion of natural resources, the SNA is ill-equipped to judge the sustainability of the SDGs.

Governments will need a measurement tool that records wealth, comprehensively, including reproducible capital (roads, buildings, and machines), human capital (education and health), and natural capital (land, fisheries, forests, and sub-soil resources). GDP does not record the depreciation of capital assets. Although the SNA does account for depreciation of reproducible capital, it arrives at figures for Net Domestic

Product (NDP), not wealth. Economic growth should reflect growth in wealth, not growth in GDP or NDP (1). If the average wealth per person (adjusted for distribution of wealth) increases as governments attempt to meet the SDGs, the SDGs will be sustainable; if it declines, the SDGs will be unsustainable.

Economic statisticians have begun estimating past movements of wealth over time. The authors of the Inclusive Wealth Report 2014 (IWR2014) (2), for example, measured movements in the wealth of 140 nations over the period 1990 to 2010. They used official statistics to arrive at the value of reproducible capital, and they estimated human capital by using data on educational attainment. Owing to severe limitations of data, items of natural capital that were included were limited to agricultural land, forests as stocks of timber, subsoil resources, and fisheries. The national costs of global climate change, although only partially covered, increased during the period. Similarly, the ecological services that are provided routinely by, for example, forests and coastal waters, though incomplete, have decreased. Estimates of wealth changes between 1990 and 2010 were therefore, in all probability, biased upward.

The authors reported that wealth grew at a positive rate in 92% of the countries in the sample, but that the proportion of countries where growth in wealth per person was

positive was only 60%. The UN ignored population growth in framing the SDGs, which should be a point of public concern. Moreover, a reliance on growth in world income to finance the SDGs would be a mistake. IWR2014 reported that GDP per capita grew in 90% of the countries in their sample, even as wealth in many of those countries declined.

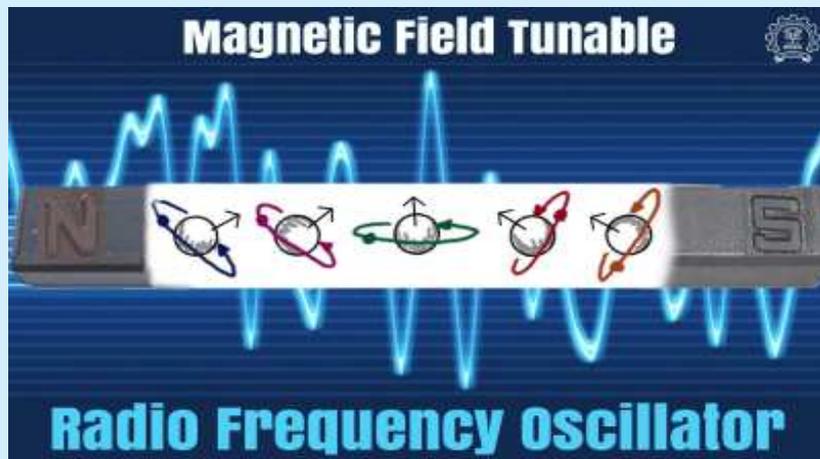
As nations work to meet the SDGs, their Statistical Offices should begin to prepare wealth accounts and track movements in wealth through time. Just as firms create annual balance sheets, governments should prepare annual wealth accounts. Limiting data to GDP will hinder our ability to evaluate development programs.



(The article is taken from the Science Magazine and is co-authored by Prof. Haripriya Gundimeda, Department of Humanities and Social Sciences, IIT Bombay, along with A. Duraiappah, S. Managi, E. Barbier, R. Collins, B. Fraumeni, P. Dasgupta, G. Liu, and K. J. Mumford)

Research in Focus

When a Magnet Plays “Ping Pong”



A novel theoretical framework for a magnetic field tunable radio frequency oscillator has been developed. The proposed device, when realised, would play a major role in the nanoelectronics field, specifically as integrable clocks in futuristic logic circuits.

With every second instrument incorporating a logic circuit, smart devices occupy an indispensable position in our day to day life. There are smartphones, ACs, refrigerators, calculators, and recently smart automobiles, and the list doesn't end here. At the heart of each of these devices is a logic circuit, which is composed of thousands of individual components or building blocks. An oscillator is one such building block of a logic circuit. The newly proposed nanoelectronic oscillator based on spintronics, if realized would make our smart instruments smarter, faster, and more efficient. The proposal has been put forth by Prof. Bhaskaran Muralidharan, Prof. Ashwin Tulapurkar and Mr. Sanchar Sharma at the Department of Electrical Engineering, IIT Bombay.

An oscillator can be understood as a circuit which generates periodic oscillating signals. For example, an oscillator on a motherboard of a 2 GHz PC generates electric pulses after every 0.5 nanoseconds. In the proposed framework, the oscillations would come from the motion of a magnetic domain wall.

A domain wall is a thin interface separating group of atoms having different magnetic alignments.

Under suitable conditions oscillations could be induced to the domain walls. Prof. Muralidharan and Prof. Tulapurkar explain that this wall moves periodically between two unstable positions, like a table tennis ball. Similar to the motion caused by two players, a push by spin current plus a magnetic field on one side and only magnetic field on the other side of the wall. These oscillations may be read out via electrical currents and then be used as timers or clocks.

An electron has three characteristics: charge, mass, and spin. The spin can be thought of as how much the electrons turn on their own axis. Just as any system with moving electrons has an electric current due to the moving charges, it will also have “spin current” due to moving spins. This spin current is exploited in the current work for producing oscillations.

The team now intends to realize this concept by building an actual logic circuit. The applications of the oscillators could be an important step toward realizing an all spin nanoscale logics driven exclusively by spin currents. The probable advantages of the device would be higher efficiency, speed, accuracy and lesser power consumption.

For more details visit: <http://www.iitb.ac.in/en/research-highlight/when-magnet-plays-%E2%80%9Cping-pong%E2%80%9D>

Institute Colloquium /
Lectures & Seminars



Dr. V. V. N. Kishore, Former Professor and Head, Department of Energy and Environment, TERI University delivered the Prof. C.V. Seshadri Memorial Lecture entitled “Experiments with Sustainable Technologies - A personal account” on November 5, 2015

Departmental
Lectures

**Department of Humanities and
Social Sciences**

Dr. Anurekha Chari- Wagh, Savitribai Phule, Pune University, gave a talk in a seminar on “The Challenge of Gendering Social Security: Agrarian Crisis, Precarious Livelihoods and Widow Farmers on November 4, 2015.

Dr. Anupama Mohan, Presidency University, Kolkata, gave a talk in a seminar on “Adaptive Modernities: Literature and the Other Arts” on November 5, 2015.

Prof. Rahul Krishna Gairola, English & Comparative Literature, IIT Roorkee, gave a talk on the topic “South Asian Digital Humanities, Online Advertising Critique, & Rural Literacy” on November 9, 2015.

Dr. Suddhaseel Sen, Presidency University, Kolkata, gave a talk in a seminar on “Narrative Technique and the ‘Russian Character’ in Joseph Conrad’s Under Western Eyes” on November 18, 2015.

Dr. Suryakant Waghmore, Associate Professor and Chairperson, Centre for Social Justice and Governance, Tata Institute of Social Sciences, Mumbai, gave a talk on the topic “From Hierarchy to Hindu Politeness: Why Civility Matters in the Study of Dalit Politics” on November 24, 2015.

**Department of Metallurgical
Engineering & Materials
Science**

Dr. Sudeshna Ray, AISECT University, Bhopal, delivered a seminar talk on “Exploration of New Phosphors for Phosphor converted Light Emitting Diode using a Mineral- inspired approach’ and design of rare-earth based phosphors as spectral converters for Solar Cell” on November 24, 2015.

Climate Studies

Prof. Dilip Ganguly, Centre for Atmospheric Sciences, IIT Delhi, delivered a talk on “How proper representation of aerosol life cycle in global climate models can help reduce the uncertainties about aerosol impacts on monsoon” on November 4, 2015

**Center For Technology
Alternative in Rural Areas
(CTARA)**

Prof. Haribandhu Panda, Pro-Vice Chancellor, School of Management, Centurion University of Technology and Management, Bhubaneswar University, delivered a talk in a seminar on “Technology Based Market linked Sustainable Livelihood Security for Under Privileged Sections of the Society in Left-wing Extremist Affected Areas of Odisha” on November 30, 2015.

Conference /
Workshops

**Seminar on “Social and Political
Philosophy”**

The Department of Humanities and Social Sciences, IIT Bombay and Indian Council of Philosophical Research jointly organized a seminar on “Social and Political Philosophy” on the occasion of the “World Philosophy Day” on November 23, 2015. Many eminent and renowned speakers participated in the event and spoke on different topics making the seminar a great success. Speaking in the seminar were, Ms. Kanchana Mahadevan, Professor and Chair, Department of Philosophy, University of Mumbai, on the topic of “*Discourse Ethics: Feminist Anxieties*”; Prof. A. Raghuramaraju, Department of Philosophy, University of Hyderabad on “*The colonized self’s climb towards Svaraj: Revisiting the debate between M.K. Gandhi and Rabindranath Tagore*”, Prof. Amrita Banerjee, Department of Humanities and Social Sciences on “*The Concept of ‘Solidarity’: Philosophical Reflections on Feminist Ethics across Difference*” to name a few. The event also witnessed a Interdisciplinary Roundtable with speakers from the Department of Humanities and Social Sciences, IIT Bombay.

**UNESCO Regional Capacity
Development Workshop**

Centre for Environmental Science and Engineering (CESE) at Indian Institute of Technology Bombay organized a two-day UNESCO Regional Capacity Development Workshop on ‘Ensuring Water Security in Changing Environment Scenario for Water Professional of South Asian Countries’ during November 26-27, 2015. The inaugural address was delivered by Prof. Daniel P. Loucks, Emeritus Professor, School of Civil and Environmental Engineering, Cornell University, USA on “Water Security in US Context”

Awards and Distinctions

Prof. Pulla Rao, Department of Chemistry and Prof. Ramgopal Rao, Department of Electrical Engineering have been appointed as JC Bose Fellows.

Prof. K. Narayanan, Department of Humanities and Social Sciences, authored two books titled "*Innovation and Global Competitiveness : Case of India's Manufacturing Sector*" and "*Globilization of Indian Industries : Productivity, Exports and Investments*" respectively.

Appointments

Dr. Sudha M. Srinivasan, Department of Industrial Design Centre, has been appointed as Post Doctoral Fellow on November 2, 2015.



Dr. Arnab Ghosh, Department of Metallurgical Engineering and Materials Science, has been appointed as Post Doctoral Fellow on November 2, 2015



NOTIFICATION

- (i) **Prof. P.V. Balaji**, Department of Bioscience and Bioengineering has been appointed as Dean (R&D) w.e.f. 20.11.2015
- (ii) **Prof. Harish Pillai**, Department of Electrical Engineering has been appointed as Associate Dean (SA) w.e.f 4.11.2015
- (iii) **Prof. Shiva Prasad**, Department of Physics, has been appointed as Professor-in-charge of the "New IIT Mentoring Cell" for IIT Karnataka.

Shri Govind S Kalambate, Sr. Mechanic, Electrical Maintenance Division, retired after 35 years of service.



Shri Vijay G. Shinde, Sr. Attendant, Telephone Exchange, retired after 33 years of service.

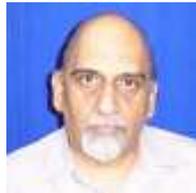


Shri Namdeo G. Lahane, Watchman (SG), Security Section, retired after 39 years of service.



Retirements in November 2015

Prof. V.P. Bapat, Industrial Design Centre, retired after 40 years of service.



Dr. P.G. Ramesh, Dy. Registrar, Accounts Section, retired after 30 years of service.



Shri M. K. Balakrishnan, Superintendent, Department of Humanities & Social Sciences, retired after 34 years of service.



Shri Madhusudhanan R, Jr. Superintendent, IEOR, retired after 36 years of service.



CEP courses scheduled during January 2016

No.	Course Title	Course Coordinator / Department	Duration
1	Building Global Cio Competencies	Prof. S. Bhargava, SJM School of Management	January 3 -5, 2016 (3 days)
2	Simulation Tools In Electronics And Digital Systems	Prof. Mahesh B. Patil, Department of Electrical Engineering	January 4 – 8, 2016 (5days)
3	Strategies For Organisations' Growth	Prof. Atanu Ghosh, SJM School of Management	January 13 – 16, 2016 (4 days)
4	Data Analytics For Process Monitoring, Soft Sensing Controller Performance Assessment	Prof. Ravindra D. Gudi, Department of Chemical Engineering	January 18 – 20,2016 (3 days)
5	Exploring Self and Enhancing Entrepreneurial Leadership	Prof. S. Bhargava, SJM School of Management	January 28, 2016 (1 day)

 In the Wilderness



Photo Credit :
Mr. C.P. Joglekar,
IIT Bombay

Salt'n Pepper
by Dr. Arun Inamdar