

# Connections

IIT Gandhinagar



2016-2017, Volume IX, Issue I  
July - September 2016

Connections is the quarterly newsletter for friends of IIT Gandhinagar

## Institute Activities

### THE 5<sup>TH</sup> CONVOCATION CEREMONY

The 5<sup>th</sup> Convocation of IIT Gandhinagar was held on the August 6, 2016 at the Palaj campus. A total of 114 BTech students, 79 MTech students, 23 PhD students, 30 MSc students, 12 MA students and 4 PGDIIT students were awarded degrees on the occasion.



**Shri Senapathy "Kris" Gopalakrishnan**, co-founder Infosys and the Chief Guest for this occasion encouraged students to serve the nation with sincerity and dedication. He welcomed the graduates to the legend called IITs. Director **Prof Sudhir K Jain** in his speech for the graduating batches appreciated the great support and maturity of the students in helping build a new campus. He spoke about the great opportunities that IIT Gandhinagar provides to its students.

**Radhika Pramod Patil** was awarded the President's Gold Medal for BTech, **Nanditha J S** received the President's Gold Medal for MTech, and **Sini Varghese** received the President's Gold Medal for MSc and MA batches. The Director's Gold Medal for PhD went to **Dr Payel C Mukherjee**, Directors Gold Medal for BTech went to **Yash**



**Pratap Singh**, and Director's Gold Medal for MSc and MA went to **Ratna Bharti**. Institute Medals and awards in several categories were conferred upon the meritorious students.



### FOUNDATION PROGRAMME

The Foundation programme (FP) is a unique academic programme that the first year BTech students undergo at IIT Gandhinagar. The programme is designed to enhance the abilities of the target group of students in five aspects: (i) Social awareness (ii) Communication, Teamwork and Leadership (iii) Values and ethics (iv) Creativity (v) Physical fitness and sports.

The five-week long Foundation Programme this year was held during July 24 - Aug 26, 2016. The programme was inaugurated by **Shri Maheshwar S Sahu**, former IAS officer, along with IITGN alumni **Kislay Pankaj**, Senior Electrical Engineer at Ather Energy and **Nisarg Shah**, Technology Analyst, Goldman Sachs.

The program included sessions on photography, caricature, origami, warli painting, music, painting, model making, metal sculpture, mean mechanics, juggling, Lego, toys from trash, creative thinking, yoga, sports, heritage walk, theatre activities, railway station cleaning and tree-planting. Several engaging talks on leadership, team spirit, gender sensitivity, ethics and value education were also organized to encourage the students to open up their minds. The programme concluded with Eureka, a cultural evening organized by freshers' where they showcase their talent and potential to the rest of the IITGN community with performances of dance, drama, music, poetry recitation, and other activities.

The program was coordinated by **Prof Atul Dixit**, **Prof Arnab Dutta**, **Prof Ketki Sharma**, **Prof Umashankar Singh** and **Prof Dilip Sundaram**.



### ARMY-ACADEMIA INTERACTION

IIT Gandhinagar hosted **Lt Gen Subrata Saha**, Deputy Chief of Army Staff, on July 22, 2016, for an army-academia interactive session. The aim of the session was to promote and nurture partnership between our forces and IITGN in areas of mutual interest. Lt General Saha and officers from the armed forces shared with students and faculty numerous research problems that are of value to the army.

## Support for the Institute

### FINANCIAL AID FROM TATA MOTORS LTD

A Memorandum of Understanding was signed between the **Indian Institute of Technology Gandhinagar, Tata Motors Ltd**, and the **Indian Institute of Technology Bombay Alumni Association** to support undergraduate students at IITGN who need financial support. Tata Motors Limited will provide significant seed funding to take care of tuition and other fees of students needing financial support over a period of four years. IIT Bombay Alumni Association facilitated the arrangement.



## Faculty News

### AWARDS AND RECOGNITION

- **Prof Virupakshi Soppina** has been selected for the DBT Ramalingaswami Re-entry Fellowship.
- **Prof Pratik Mutha, Dr Neeraj Kumar and Nishant Rao's** work has won the **Best Poster Award** at the Motor Control 2016 conference in Wisla, Poland.

### PROFESSIONAL ACTIVITIES

- A report on "District Human Development Report- Ahmedabad: 2016" by **Prof Tannistha Samanta, Prof Shivakumar Jolad, Prof Malavika Subramanyam and Ms Mukta Gundi** has been published and released by Gujarat Social Infrastructure Development Society (GSIDS), Government of Gujarat.
- Patent on **Detection of Organophosphorus Herbicides**, Application No. 201621013049, Indian Patent Office, was filed by Sanjay Kumar; Pramila Sharma, and Bhaskar Datta.

### SPONSORED PROJECTS

- **Reusable and Field-Deployable Nanobiocatalysts for Detection of Pesticides and Herbicides** sponsored by IMPRINT Principal Investigator: **Prof Bhaskar Datta**.
- **Advanced nanotracers for product life cycle assessment and product monitoring** sponsored by IMPRINT Principal Investigator: **Prof Superb Misra**
- **Scale-up of Diesel Autothermal Reformer from 5kWe to 30kWe for Naval Applications** sponsored by IMPRINT Principal Investigator: **Prof Atul Bhargav**

- **Molecular Mechanisms of Kinesin-3 Autoregulation and Their Biophysical Measurements** sponsored by Science & Engineering Research Board Principal Investigator: **Prof Virupakshi Soppina**.
- **Targeting IMPDH (Inosine Monophosphate Dehydrogenase): Developing Novel therapeutics for H pylori Infection** sponsored by Science & Engineering Research Board Principal Investigator: **Prof Sivapriya Kirubakaran**.
- **Structural investigation of tetraspanin CD151 and laminin-binding integrin 3-1: A possible target for cancer therapy** sponsored by Science & Engineering Research Board Principal Investigator: **Prof Vijay Thiruvengadam**.
- **Reconnoitering Digital Image and Video History (Origin and Tampering) using Intrinsic Signatures** sponsored by Department of Science & Technology Principal Investigator: **Prof Nitin Khanna**.
- **Anti-CGGBP1 adjunct cancer therapy: Regional advantage in Gujarat** sponsored by Gujarat State Biotechnology Mission (GSBTM) Principal Investigator: **Prof Umashankar Singh**.
- **Study of Lunar Geomorphological and impact cratering processes through Chandrayaan-1 Data sets** sponsored by Indian Space Research Organisation (ISRO). Principal Investigator: **Prof Vikrant Jain**
- **CMIP5 Statistical Downscaling for hydro-climatic projections with CMIP5 Simulations to assess Impact of Climate Change** sponsored by the Ministry of Water Resources (MoWR). Principal Investigator: **Prof Vimal Mishra**.
- **Impact of Climate Change on Water Resources of Sabarmati Basin Change** sponsored by the Ministry of Water Resources

(MoWR). Principal Investigator: **Prof Vimal Mishra**.

- **Effective constraint handling for single and multi-objective optimization in Cuckoo Search Algorithm: Application to optimal control problems** sponsored by Science and Engineering Research Board (SERB). Principal Investigator: **Prof Nitin Padhiyar**.
- **Towards Predictive Modeling of Oxidation of Nanoaluminum Particles - A Multiscale Approach** sponsored by Science and Engineering Research Board (SERB). Principal Investigator: **Prof Dilipsrinivas Sundaram**.
- **Strong Electromagnetic fields produced in heavy ion collisions and hot and dense QCD matter Approach** sponsored by Science and Engineering Research Board (SERB). Principal Investigator: **Prof Vinod Chandra**.

### CONSULTANCY PROJECTS

- **Verification of design of LPG Bottling Shed** at IOCL for Projects and Development India Limited Principal Investigator: **Prof Gaurav Srivastava**.
- **Verification of gantry girder and hoist** for Techno Industries Principal Investigator: **Prof Gaurav Srivastava**.
- **Construction of Railway Over Bridge in Lieu of LC-105-B** on Surendranagar Gate – Joravarnagar Railway Station of Bhavnagar Division of W. Rly. Area of Surendranagar Nagarpalika for Principal Investigator: **Prof Dhiman Basu**.
- **GPU accelerated Computer Vision Tools** for the Smart Kitchen for Principal Investigator: **Prof Ravi Hegde**.
- **Research Advisory Services** for Providing Technical support to TCS for Principal Investigator: **Prof Uttama Lahiri**.

### NEW FACULTY

The following faculty members joined IITGN during this quarter:

Name	Designation	Discipline	PhD/Last degree	Date of joining
A Ramanathan	Visiting Professor	Social Sciences	Bombay University	08.07.16
Kaustubh Sunil Rane	Assistant Professor	Chemical Engineering	University of Buffalo	15.07.16
Ambika Aiyadurai	Assistant Professor	Social Sciences	National University of Singapore	17.08.16
Krishna Kanti Dey	Assistant Professor	Physics	IIT Guwahati	22.08.16
C N Pandey	Visiting Professor	Earth Sciences	North Gujarat University	02.09.16
Xiao Dong	Visiting Faculty	Chinese Language	Yunnan University	02.09.16
Hamida Banu Chopra	Visiting Faculty	Humanities	Urdu Jamia Aligarh University	20.10.16
Manu Awasthi	Assistant Professor	Computer Science and Engineering	University of Utah	03.11.16



## SCHOLAR-IN-RESIDENCE

Name	Affiliation	Date of joining
Lyndsay Baines	Director, Global Military Veteran & Family Studies, Cambridge, United Kingdom	13.08.16
Surya Pratap Vanka	Professor Emeritus of Mechanical Engineering at the University of Illinois at Urbana-Champaign, Champaign, USA	13.08.16
Shungo Kawanishi	Head, Department of Global Communication Education and Department of Advanced Liberal Arts Education, Japan Advanced Institute of Science and Technology, Japan	24.08.16

## Activities at IITGN

### INDUSTRY-ACADEMIA CONCLAVE: CONNECTIONS 2016

IITGN hosted an **Industry Conclave** on Sept 30 - Oct 1, 2016. The event provided an opportunity for the academic community at IITGN to interact with several top functionaries from different groups of industries. Apart from talks and panel sessions, the event also included a campus tour and a "Walk by the Wall" poster session.



### SERC PREPARATORY SCHOOL IN THEORETICAL HIGH ENERGY PHYSICS (THEP)

The High Energy Physics community in India organizes SERC Schools in Theoretical High Energy Physics (THEP) since 1985. The Preparatory



School 2016 was organized at IIT Gandhinagar from September 5 to October 1, 2016. The school was attended by 50 participants. The objective of these schools is to train PhD students in subjects one needs to learn to do research in THEP and to expose them to recent developments in the field.

### 70<sup>TH</sup> INDEPENDENCE DAY CELEBRATIONS

IIT Gandhinagar celebrated the 70<sup>th</sup> Independence Day on its new campus on August 15, 2016. The celebrations began with flag hoisting, singing of the national anthem, and distribution of faculty excellence awards. The following faculty members received the faculty excellence awards for their outstanding contribution: **Dr K Ragavan**, Excellence in Teaching Award for the year 2013-2014; **Dr Chinmay Ghoroi**,

Excellence in Institution Building Award for the year 2013-2014; **Dr Kabeer Jasuja**, Excellence in Teaching Award for the year 2014-15; **Dr Vimal Mishra**, Excellence in Research Award for the year 2014-2015; **Dr Pratyush Dayal**, Excellence in Institution Building Award for the year 2014-2015; **Dr Amit Prashant**, Excellence in Outreach Award for the year 2014-2015. The **Dean's List** for students of all the Undergraduate batches who have excelled in academics were also announced during this event.

### REFLECTIONS ON SIX YEARS OF RIGHT TO EDUCATION ACT – 2009

A two-day long workshop on **Reflections on Six Years of Right to Education Act- 2009**, organized by IIT Gandhinagar and sponsored by Sarva Shiksha Abhiyan, was held on July 22, 2016. Eminent academics, government officials, NGO's, school teachers, and students discussed the challenges of Right To Education (RTE) and ways of addressing them in this national workshop.

### SHORT COURSES/ WORKSHOPS/ PANELS

- Short course on **International Health & Community Development** by **Dr Sonia Gulati**, University of Ottawa, Aug 9-10 & 13, 2016.
- Short course on **Geosynthetics Applications in Infrastructure Development**, by **Prof G V Rao**, IIT Gandhinagar, **Shri M Venkataraman**, Former Vice President of Garware-Wall Ropes Ltd., **Prof Ajanta Sachan**, IIT Gandhinagar, and **Prof Amit Prashant**, IIT Gandhinagar, July 14 – 15, 2016.
- Short course on **Introduction to Computer Networking** by **Mr Amit Saha**, OpenStack group in Cisco, Sept 7-11, 2016.
- Short course on **Promoting Evidence-Based Policy to Reduce Poverty** by **Mr Gautam Patel**, J-PAL South Asia, Aug 27 & 28, Sept 3 & 4, 2016.
- Short course on **An Introduction to the Kautiliya Arthashastra** by **Dr Vikas Kumar**, Azim Premji University Bangalore, Sept 8, 9, 12, 14 & 16, 2016.
- Short course on **Development Studies** by **Dr Sandeep Pandey**, IIT Gandhinagar, Aug 13-14.

### LECTURES

- **Dr R A Mashelkar**, Padma Vibhushan, Former Director General CSIR, the Founder Chairman of Board of Governor of our Institute delivered the Nani Palkhivala Lecture titled **From Incremental to Disruptive Innovation: The Vision and Strategy** on Sept 17, 2016.



- **Shri A S Kiran Kumar**, Chairman, Space Commission and ISRO delivered the fifth Roddam Narasimha Lecture titled **Space Technology – Contribution to India's Development** on Aug 10, 2016.
- **Prof B B Lal**, Padma Bhushan, former Director General of the Archaeological Survey of India, delivered a public talk titled **How Deep are the Roots of Indian Culture? An Archaeologist Inquires** on Sept 6, 2016.



### OTHER LECTURES

- **Black holes in String theory** by **Prof Gautam Mandal**, Tata Institute for Fundamental Research (TIFR), July 4, 2016.
- **Using Zotero (Reference Management Software) for managing references- a hands-on session for beginners** by **Dr TS Kumbhar**,

Librarian, IIT Gandhinagar, July 11, 2016.

- **Talk on The use of polymeric materials in the chemical industry and current research challenges** by **Mr Pradip Khaladkar**, Head, Plastics, Elastomers and Composites Technology (PECT) at DuPont Engineering Technologies (DuET), United States, July 19, 2016.

- **My Story Session** by **Mr Faisal Farooqui**, Founder of Mouthshut.com, July 22, 2016.
- **Integration of Research, Education and Outreach- A perspective of a Materials Scientist and Engineer** by **Dr B L Ramakrishna**, Arizona State University, July 23, 2016.
- **Performance of Free-Space Optical Systems**

- and Some PHY-Layer Security Issues by **Dr Imran Shafique Ansari**, July 27, 2016.
- **Fundamentals of Optical Communication Systems** by **Dr Imran Shafique Ansari**, Postdoctoral Research Associate (PRA), Texas A&M University at Qatar (TAMUQ), July 27, 2016. **Skilled Reading in Indian Writing System: Case of Hindi/Devangari** by **Dr Anurag Rimzhim**, Assistant Professor at Central Connecticut State University, August 1, 2016.
- **Development of multifunctional lightweight Mg based alloys and their microstructural engineering to optimize the property profile for lightweight**, bio-implant and aerospace applications by **Dr Saurabh Nene**, IIT Bombay, August 3, 2016.
- **The capabilities of COMSOL Multiphysics® 5.2a and Application Builder** by **Garima Singh**, COMSOL, August 4, 2016.
- **Cell Death** by **Dr Chandrima Shaha**, Director of National Institute of Immunology, New Delhi, August 5, 2016.
- **Computational Biomedicine, Leveraging the Window of Opportunity** by **Dr Tavpritish Sethi**, Wellcome Trust/DBT India Alliance Fellow at the All India Institute of Medical Sciences, August 8, 2016.
- **Speeding Innovations** by **Dr Vikram Rao**,

- Executive Director, Research Triangle Energy Consortium, August 9, 2016.
- **On Aerospace Systems Engineering: The Way Forward?** by **Prof A Anilkumar**, Professor of the practice of Aerospace Engineering, Professor of the practice of Mechanical Engineering, Vanderbilt University, Tennessee, USA, Aug 9, 2016.
- **Defeating Gender Discrimination** by **Prof Madhu Purnima Kishwar**, Centre for the Study of Developing Societies, August 10, 2016.
- **Disruptive Innovations and Pitching for Funding** by **Mr Shekhar Chandra**, YouLEAD, August 12, 2016.
- A public lecture by **Dr Arvind Panagariya**, Vice Chairman, NITI Aayog at IIM Ahmedabad, August 17, 2016.
- **Clean Water Using Advanced Materials: Science, Incubation and Industry** by **Prof T Pradeep**, August 24, 2016.
- **Global stability analysis of spatially developing boundary layers** by **Ramesh Bhoraniya**, PhD candidate, Mechanical Engineering, IIT Gandhinagar, August 29, 2016.
- **Frantz Fanon and Mahatma Gandhi** by **Prof P C Kar**, former Professor of English with MSU Baroda, August 31, 2016.
- Talk on **Frantz Fanon and Mahatma Gandhi** by **Prof P C Kar**, Director of Center for

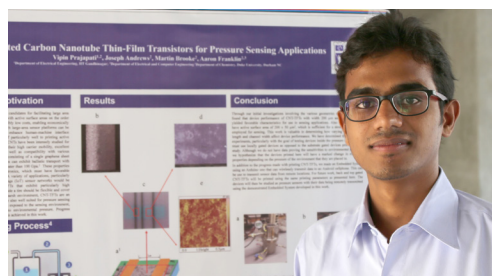
- Contemporary Theory, Baroda, Aug 31, 2016.
- **Viscoelastic Properties of Colloidal particles in Liquid Crystals Composites and Liquid Crystal Anchoring Transitions at Interfaces** by **Siddharth Kulkarni**, PhD candidate, Department of Chemical Engineering, IIT Gandhinagar, Sept 5, 2016.
- **Linking science to practice: Tools to assess river status and guide rehabilitation to optimize river basin management** by **Prof Brierley**, Chair of Physical Geography, University of Auckland, New Zealand, September 8, 2016.
- **Innovative Teaching for the Global Era** by **Prof Shungo Kawanishi**, Director of Institute of General Education, Sep 9, 2016.
- **Electrical conductivity and Charge Diffusion in hot QCD Medium** by **Dr Sukanya Mitra**, Postdoctoral Fellow in Physics at IIT Gandhinagar, September 16, 2016.
- **Generic Dynamics on the Cantor Space** by **Prof Dario Darji**, Professor of Mathematics, University of Louisville, September 16, 2016.
- **Band structure and electronic properties of semiconductors** by **Dr Avishek Saha**, Chemistry, University of Erlangen-Nuremberg, September 20, 2016.
- **Human race facing an inevitable apocalypse?** By **Dr Arnab Dutta**, September 21 2016.

## Student and Staff Activities

### AWARDS AND RECOGNITION

- **Pratik Chimane**, an MTEch student, received the first prize in the category **Best Poster Award** at the 7<sup>th</sup> World Renewable Energy Technology Congress - 2016 (WRETC-2016), conducted at Manekshaw Centre, New Delhi, Aug 21-23, 2016
- **Vaishnavi Patil, Sai Krishna, and Sai Vootla** won the third prize at the **Intel Cup Embedded** systems design contest held in China from July 26 - 29, 2016 for the project titled **Smart Medical Network**, 164 teams from 74 universities and 8 countries participated in the 2016 Intel Cup Undergraduate Design Conference.
- **Mukta Gundi** (PhD student in Social Sciences) has been selected as a top finalist in the **Dance Your PhD** contest 2016 (PhD students depict their PhD thesis through a dance) organized by the Science Magazine.
- A team of IITGN PhD students (**Sanjay Kumar, Pallavi Chilka**) and project students (**Vinod Maurya, Nakshi Desai**) placed 1<sup>st</sup> in the Vibrant Gujarat Start-Up Grand Challenge 2016, a part of the Vibrant Gujarat Global Summit, for their plan for: **Efficient and Reusable Nano-Biocatalyst for Extracting Valuable Bioactive Compounds from Agro/Food Waste**
- Three students received **Best Paper Awards** at the International Geotechnical Engineering Conference on Sustainability

in Geotechnical Engineering Practices and Related Urban Issues organised by Indian Geotechnical Society (IGS), IGS Mumbai Chapter and International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE) from Sept 23 - 24, 2016 in Mumbai. **Saloni Prashant Pandya** and **Debayan Bhattacharya** received the first prize and **Seethalakshmi P** received the second prize.



### THE FIRST UNDERGRADUATE RESEARCH CONCLAVE

The First Undergraduate Research Conclave (UGRC) was held at IIT Gandhinagar on September 3, 2016. The Conclave saw the participation of 17 undergraduate students from IITGN, who did their summer internships at prestigious institutions within or outside the country (including Caltech, Duke, IIT Gandhinagar and ISRO). The Conclave was organized by **Prof Manish Kumar, Prof Shanmuganathan Raman, and Prof Vineet Vashista**. The winning poster was by **Mr Vipin Prajapati** and was titled **Fully printed carbon nanotube - thin film transistors for pressure and**

**sensing applications**. The students who were selected for the oral presentations were **Srinivasan A., Suraj Bhosale, Garima Chaudhary, Deepak Dhariwal, Amber Kothari** and **Vipin Prajapati**.



### SWACCH BHARAT DRIVE

The first-year students of IIT Gandhinagar went on a **Swachh Bharat Drive** on August 14, 2016, Sunday to clean Kalupur (Ahmedabad) railway station. All 180 students joined the cleaning initiative as a part of institute's **Foundation Programme**. This activity was planned in collaboration with Western Railways. The aim was to involve students in generating respect for the cleaning staff working under adverse conditions and to spread the message of keeping our environment clean.

### Sports News

#### IIM SHOURYA INTER-COLLEGIATE SPORTS FEST

The IITGN's Boys Table Tennis team (Nikhil Sharma (c), Sowill Dave, Amber Kothari, Bharg Mehta) won a Gold medal. They defeated IIM-A by 3-1 in the finals.