

# Connections

IIT Gandhinagar



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Connections is the quarterly newsletter for friends of IIT Gandhinagar

## Institute Activities



### DEDICATION OF THE CAMPUS TO THE NATION

Prime Minister of India **Shri Narendra Modi** visited the institute on October 7 and dedicated its campus to the nation. He also launched the Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDSA) from the institute. Present on the occasion were Chief Minister of Gujarat **Shri Vijaybhai Rupani**, Union Minister of Human Resource Development **Shri Prakash Javadekar**, Union Minister of Electronics & IT and Law & Justice **Shri Ravi Shankar Prasad** and other dignitaries.

### FIRE ENGINEERING LABORATORY

The William Henry Merrill Fire Engineering Laboratory was inaugurated by **Prof Sudhir K Jain**, Director, IITGN and **Mr Suresh Sugavanam**, VP & MD, Underwriters Laboratories South Asia on December 7. The laboratory reinforces the strong commitment of IITGN and Underwriters Laboratories towards enhancing fire

safety within and outside India. The Centre for Safety Engineering conducted its fifth, full-scale fire test on a three-storey building with glass facade on the occasion.



## Support for the Institute

### MAULANA ABUL KALAM AZAD CHAIR



**Mrs Hamida Banu Chopra** has established a generous endowment to create the **Maulana Abul Kalam Azad Chair** at IITGN for the teaching of Urdu. Maulana Azad, a visionary and a scholar, was the first education minister of independent India and played a critical role in the creation of the IIT system.

Mrs Chopra, who holds a MA in Philosophy from Udaipur University (1961) and Adeeb Kamil from Jamia Urdu Aligarh University (1971), has taught Urdu at the University of California at Berkeley and IIT Gandhinagar. She has published several English translations and lectured extensively on seminal Urdu poets, such as Sahir Ludhanvi, Ghalib, Faiz Ahmad Faiz, etc.

The Institute invites other well-wishers to contribute to this endowment and is seeking support to create similar endowments for the teaching of Sanskrit, Classical Indian Music, and Indian Performing Arts.

### BHALODIA FUND AT CALTECH



**Dr Mohan A Bhalodia** and **Mrs Rasila M Bhalodia** have set up a Fund to support two IITGN students per year for the next ten years to conduct summer research at the California Institute of Technology (Caltech). Since 2011, between 6 to 8 IITGN students have participated every year in the **Summer Undergraduate Research Fellowship (SURF)** at Caltech and this Fund will serve to strengthen this exchange. Dr Bhalodia is a veteran professional of refinery operations and control, and retired from ExxonMobil. He obtained a BE in Chemical Engineering (1968) from M S University, Baroda, and a PhD (1973) from the State University of New York.

## OUTREACH

**Prof Sudhir K Jain**, Director, visited United States in November 2017 and reached out to potential faculty candidates, well-wishers and donors. He also delivered a talk titled **The IIT Gandhinagar Story: Opportunities and Challenges in Building a World Class Institution** at Massachusetts Institute of Technology, University of Maryland, California Institute of Technology, the

University of California San Diego, University of California, Los Angeles and University of California, Berkeley. **Prof Pratik Mutha** reached out to potential faculty candidates at the University of Houston, University of Texas at Austin, and Georgia Tech University and **Prof Amit Arora** interacted with several potential faculty candidates at the Pennsylvania State University with the help of Office of Postdoctoral Affairs.

## Faculty News

### SPONSORED PROJECTS

- Detection of partial blockage in a pipe, sponsored by Science and Engineering Research Board (SERB) – Principal Investigator: **Prof Pranab Kumar Mohapatra**, Civil Engineering.
- River health analysis of Ramganga River Basin – A Geomorphologic Approach, sponsored by Centre for Ganga River Basin Management, IIT Kanpur – Principal Investigator: **Prof Pranab Kumar Mohapatra**, Civil Engineering.
- Dynamic Properties of Confined Masonry Buildings through Ambient and Forced Vibration Testing, sponsored by Council of Scientific & Industrial Research (CSIR) – Principal Investigator: **Prof Dhiman Basu**, Civil Engineering.
- Enhancing Shelf Life of Liquid Foods by Ultrasound

- Assisted High Pressure Carbon, sponsored by CSIR – Principal Investigator: **Prof Sameer Vishvanath Dalvi**, Chemical Engineering.
- Immobilisation of Co-Salen complexes on electro-active surfaces and exploring their H<sub>2</sub> production reactivity, sponsored by Shastri Institutional Collaborative Research Grant (SICRG) – Principal Investigator: **Prof Arnab Dutta**, Chemistry.
- Effect of oxidation on the magnetic properties of Sm-Co based permanent magnets, sponsored by Defence Research and Development Organisation (DRDO) – Principal Investigator: **Prof Emila Panda**, Materials Science Engineering.
- Extremal Partial VC-Dimension and Fine-Grained Fold-Cut Problems, sponsored by SERB – Principal Investigator: **Prof Neeldhara Misra**, Computer Science

Engineering.

- Topology and Evolution of Black Holes in Higher Curvature Gravity, sponsored by SERB – Principal Investigator: **Prof Sudipta Sarkar**, Physics.

### CONSULTANCY PROJECTS

- Intra-household empowerment, self-care and wellbeing for EMERGE (Evidence-based Measures of Empowerment for Research on Gender Equity) initiative from the Centre for Gender Equity & Health, University of California, San Diego – Principal Investigator: **Prof Tannistha Samanta**.
- Development of Child Friendly Group Hand Washing Facilities for Schools by United Nations Children Fund – Principal Investigator: **Mr Franklin Kristi**.

## NEW FACULTY

The following faculty members joined the institute during this quarter:

Name	Designation	Discipline	PhD/Last degree	Date of joining
Arka Chattopadhyay	Assistant Professor	Humanities & Social Sciences	Western Sydney University	08.11.17
Madhu Vadali	Assistant Professor	Mechanical Engineering	University of Wisconsin - Madison	04.12.17
Chandra Sekhar Tiwary	Assistant Professor	Materials Science & Engineering	Indian Institute of Science	11.12.17
Uddipta Ghosh	Assistant Professor	Mechanical Engineering	University of Rennes	15.12.17
Atul Singh	Visiting Professor	Humanities & Social Sciences	Wharton School	23.12.17
Antonio Fonseca	Visiting Professor	Humanities	ISCTE Lisbon	26.12.17
Svetlana Brzev	Visiting Professor	Civil Engineering	IIT Roorkee	28.12.17

### SCHOLAR-IN-RESIDENCE

Rosa Maria Perez	ISCTE, Lisbon			24.10.17
Maria Amante	University of Alcalá, Spain			24.10.17
Frederick Coolidge	University of Colorado			28.12.17

## Activities at IITGN

### INTERNATIONAL CONFERENCE ON DIALOGUE OF CIVILISATION

The Fourth International Conference on **Dialogue of Civilisation** was conducted in India during October 8-14. The conference was inaugurated in New Delhi and was hosted at IITGN during October 9-11. It was organised by **Prof Michel Danino** in collaboration with Archaeological Survey of India and National Geographic.

### INT'L CONFERENCE ON HISTORY OF INDIAN MATHEMATICS

An International Conference on **Exploring the History of Mathematics in India** was held at the institute during December 4-6. Conducted in collaboration with the Indian Society for History of Mathematics, it hosted several prominent scholars in the field from India and overseas. The conference was coordinated by **Prof Indranath Sengupta** and **Prof Michel Danino**.

### NEEV ENTREPRENEURSHIP DEVELOPMENT WORKSHOP

Nurture and Empower Entrepreneurial Ventures (NEEV) - the institute's community outreach programme - conducted a six-day

Entrepreneurship Development Workshop from October 30 to November 4 at IITGN campus. The workshop was attended by third-year BBA students of Gujarat Law Society (GLS) University, Ahmedabad.

### NEW IIT DIRECTORS' VISIT

Directors of third-generation IITs (setup in 2015) visited the campus with their colleagues to review campus development at IITGN. **Prof Manoj Gaur** from IIT Jammu visited the campus on July 1, **Prof P Seshu** from IIT Dharwad visited on October 5 and **Prof P B Sunil Kumar** from IIT Palakkad visited on Dec 22.

### PRESIDENT OF UNIVERSITY AT BUFFALO VISIT

**Prof Satish Tripathi**, President of University at Buffalo, **Prof Liesl Folks**, Dean of the School of Engineering and Applied Sciences and **Dr Stephen C Dunnett**, Vice Provost, International Education visited the Institute on October 30 to explore potential to expand collaborations with IITGN.



## INDIA KI KHOJ

The sixth edition of India Ki Khoj was organised during December 11-18. Six students from California Institute of Technology (CalTech), seven from JAIST and 17 from IITGN participated in the eight-day programme. The event featured lectures on diverse topics, field visits to heritage sites in and around the city of Ahmedabad and cultural performances. The lectures dealt with the topics of culture, economics, art, music and sociology. The themes central to discussions ranged from Indian architectural heritage and museology to the Harappan civilisation and the uniqueness of Indian Islam, among various others.

## SHORT COURSES/WORKSHOPS

- **Building Early-stage Startups and Valuations** by **Mr B V Jagadeesh**, Managing Director, KAAJ Ventures, October 9-13
- **Scientific Writing for Beginners** by **Dr Maria João Amante**, Director, ISCTE Lisbon, Portugal, October 26-31
- **Vehicle Navigation: Principles & Practices** by **Prof Ashok Joshi**, Department of Aerospace Engineering, IIT Bombay, December 28-31
- Short course on **Cells and Biomaterials: Part 2** by **Prof Ketul Popat**, Colorado State University, USA, December 28-31
- **Scientific Writing for Research Scholars** by **Dr Maria João Amante**, Director, ISCTE, Lisbon, Portugal, October 31 to November 7
- **Memory Storage Systems** by **Prof Preeti Ranjan Panda** from IIT Delhi, **Prof R Govindarajan** from IISc, **Mr Vivek Seshadri** from Microsoft Research India, **Mr Saravanan Sethuraman** from IBM India, **Mr Manish Gupta** from NVIDIA, **Mr Arpit Joshi** from University of Edinburgh, **Prof Biswabandan Panda** from IIT Kanpur and **Prof Manu Awasthi** from IITGN, December 9-10
- GIAN course on **Computational Social Choice** by **Prof Edith Elkind**, Department of Computer Science, Oxford University, December 5-8
- **Design and Cognitive Interventions for Large-Scale Social Concerns** in collaboration with Japan advance Institute of Technology (JAIST) by **Prof Krishna Prasad**, IITGN, December 6-8

## LECTURES

- **A National Geographic Society Grant Workshop** by **Dr Christopher Thornton** and **Prof Monica L Smith**, National Geographic Society, October 11
- **The Clause for Free and Compulsory Education in India: Why Deleted From Fundamental Rights during Constitution Framing?** by **Prof Nalini**



## INAUGURATION OF BUILDING 9

Building 9, the temporary location of **Research Park and Incubation Centre** was inaugurated by **Shri Abhai Sinha**, Director General, Central Public Works Department (CPWD) on November 1. A separate building will be constructed in campus for the Research Park, which will also house the Incubation Centre.

## BBC WORLD SERVICE

BBC World Service India Pvt Ltd has set up its media office in the Research Park. BBC will work with IITGN students and faculty members in both technological and content-based research, including joint guidance of projects of mutual interest.

## COLLABORATION WITH DESHPANDE FOUNDATION

The institute signed an Expression of Interest (EOI) with Deshpande Foundation on November 3. The collaboration will promote engagement of IITGN students in social sectors as they will have an opportunity to work with Deshpande Foundation through internships and fellowships.

- **Juneja**, National University of Educational Planning and Administration (NUEPA), October 12
- **Will Failing Students Help them Learn? The RTE 2009 and the Reversal of the 'No Detention' Policy** by **Prof Nalini Juneja**, NUEPA, October 13
- **Journey of Building Technology Start-ups in India** by **Mr Shyamal Kumar**, Lavelle Networks, October 11
- **Resolving Structures across Scales with Transmission Electron Microscopy** by **Dr Saikat Chowdhury**, Scripps Research Institute, October 13
- **Design and 3D Biofabrication of Orthopedic Tissues** by **Prof Rohan Shirwaiker**, North Carolina State University, October 24
- **Structure-property Relations in Advanced Composites** by **Dr Suhasini Gururaja**, Indian Institute of Science, November 1
- **Astrobiology: The Cradle of Life** by **Prof Nigel Mason**, Open University, Milton Keynes, UK, November 2
- **The Past and Future (perhaps) of Parameterised Complexity and Multivariate Algorithmics** by **Prof Michael Fellows**, University of Bergen, Norway, November 2
- **Kid Krypto-encryption Systems Based on NP-hard Problems** by **Prof Frances Rosamond**, University of Bergen, Norway, November 4
- **Introductory Programming: Let us cut through the Clutter!** by **Prof Abhiram Ranade**, IIT Bombay, November 4
- **From Clients to Citizens: Lessons from Brazil's Bolsa Familia for Delhi** by **Dr Manisha Priyam**, National University for Educational Planning and Administration, November 1
- **Constructing Climate Scenarios for the Netherlands** by **Dr Frank Selten**, KNMI, the Netherlands, November 9
- **A New Approach to Study Climate-induced Impacts** by **Dr Karin van der Wiel**, KNMI, the Netherlands, November 9

- **Concentration Bounds for Stochastic Approximation with Applications to Reinforcement Learning** by **Mr Gagan Thoppe**, Technion, Israel Institute of Technology, November 8
- **Multicultural Education in the United States: Do the Basic Assumptions Apply to Education in India?** By **Prof John Maddaus**, University of Maine, November 13
- **Inequality and Access to Education in the United States** by **Prof John Maddaus**, University of Maine, November 14
- **Autonomous Spacecraft Navigation using X-ray Pulsars** by **Prof Arvind K Singh**, Space Application Centre, November 17
- **On the Brain Mechanisms of Visual Attention, Saccadic Eye Movements and Hearing** by **Dr Suresh Krishna**, German Primate Center, November 16
- **The Web of Freedom: J C Kumarappa and Gandhi's Struggle for Economic Justice** by **Prof Venu Madhav Govindu**, Indian Institute of Science, November 28
- **How the BBC has Started Developing its Digital Strategy for India** by **Mr Trushar Barot**, BBC World Service, November 28
- **Motion Averaging in 3D Vision** by **Prof Venu Madhav Govindu**, Indian Institute of Science, Bengaluru, November 28
- **Customised Light-sheet Microscopy for Developmental Biology and Cancer Research** by **Dr Gopi Shah**, University of Cambridge, November 30
- **Self-organisation and Axes Formation in Aggregates of Embryonic Stem Cells** by **Dr Vikas Trivedi**, Herchel Smith Fellow, November 30
- **Geogenic contaminants in groundwater catchments – Concerns for drinking water safety planning from source to tap and management** by **Prof Prosun Bhattacharya**, KTH Royal Institute of Technology, December 12

## Student and Staff Activities

### AWARDS AND RECOGNITION

- The team of **Anurag Singhania**, **Gunda Harini** and **Prof Kabeer Jasuja** from the discipline of Chemical Engineering received the **People's Choice Award** in the Nano Artography 2017 contest. Their picture titled 'The flower and the bud' captures the flower-like morphology of a self-assembled nanostructure, which they observed under an electron microscope while developing a recipe to synthesise nanoforms of boron. The size of the bud is  $\sim 1$  micron!
- **Harini G**, a PhD student at IITGN, won the **best poster award** at the International Conference on Advanced Nanomaterials and Nanotechnology (ICANN) 2017, organised by IIT Guwahati.
- **Amarjyoti Das Mahapatra**, a PhD student at IITGN, won the **best oral presentation award** at CARBO XXXII's Emerging Chemistry and Biology of Carbohydrates, organised by IIT Kharagpur.
- **Akarsh A**, a PhD student in Earth Sciences, has been selected for the **Water Advanced Research and Innovation (WARI) Internship Programme**, supported by the Department of Science and Technology (Government of India), the University of Nebraska-Lincoln (UNL), Daugherty Water for Food Institute and Indo-US Science and Technology Forum (IUSSTF). He will be spending six months at the UNL.
- **Sanjay K**, a PhD student in Chemistry, won **second prize** for his presentation at the International Conference on Biological Applications of Nanoparticles (ICON) 2017, held at IIT Madras.
- **Archini Paruthi** and **Prateek Goyal**, IITGN PhD students in Material Science and Engineering, won the **best oral presentation awards** in the category of Diverse Applications and Energy & Nanoelectronics, respectively, at the International Conference on Nanotechnology: Ideas, Innovation and Initiatives 2017, held at IIT Roorkee.

### OPEN HOUSE ON EXPLORER'S FELLOWSHIP

Ninety-six students participated in the Explorer's Fellowship in summer this year. The fellowship enables them to undertake a six-week adventure journey across the country on a very low budget. The teams presented the summary of their experiences at an open house on October 15.

## Inter-IIT Events

### INTER-IIT SPORTS MEET

A 97-student contingent from IITGN participated in the 52<sup>nd</sup> Inter-IIT Sports Meet held during December 15-23 at IIT Madras. Special appreciation was bestowed upon the teams of Basketball (Boys), Football and Lawn Tennis and Badminton (Girls) for making it to the quarter-finals. IITGN secured fourth rank in the march-past (parade) and **Shubhi Maheshwari** secured fourth position in high jump, **Julianna Rex**, **Shubhi Maheshwari**, **Aastha Soni** and **Anitha D** secured fourth position in the 400-metre relay race.

### INTER-IIT CULTURAL MEET

The second Inter-IIT Cultural Meet was held during December 28-

### AMALTHEA 2017

**Amalthea 2017** - the annual technical event of the institute - was held during November 4-6 with the aim of promoting technology, bestowing knowledge, aiding scientific thinking and stimulating entrepreneurship among students. The eighth edition of Amalthea was inaugurated by **Mr AP Hota**, former MD & CEO of National Payments Corporation of India and **Prof Sudhir K Jain**.



### HOMECOMING

A two-day alumni meet - **Homecoming 2017** - was held at IITGN during December 23-24. Organised by the Office of Alumni Relations, the event hosted 120 alumni from India and overseas. Over the two days, the alumni revisited their college days and took part in faculty-alumni & student-alumni interactions, Halla Bol (an interdepartmental sports contest unique to IITGN) and various cultural events.



### RASHTRIYA EKTA DIWAS

The institute celebrated the Rashtriya Ekta Diwas (National Unity Day) with a 'Run for Unity' on October 31. The day was celebrated to commemorate the 143<sup>rd</sup> birth anniversary of Sardar Vallabhbhai Patel.

### CONSTITUTION DAY

The institute observed Constitution Day (Samvidhan Divas) to commemorate the adoption of Constitution of India on November 26. **Prof Mona Mehta** spoke on the fundamental duties and their significance.

30 at IIT Kanpur.

Various contests of music, dance, drama, fine arts & design, photography & cinematography



and literary arts (speaking, creative writing and quiz) were held as part of the fest. Team Palette and Team 16 Pixels of IITGN secured first position in costume design and online photo story competitions, respectively. Team Palette also ranked third in Online Doodling contest while Team LitSoc ranked fourth in English Poetry Slam and India Quiz.