

# Connections

IIT Gandhinagar



Connections is the quarterly newsletter for friends of IIT Gandhinagar

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## Institute News

### Leadership Conclave

The fourth Leadership Conclave met on Dec 17, 2013 to guide the Institute on short, medium, and long-term strategic issues. The conclave discussed ideas on attracting philanthropic funds, industry partnerships, internationalisation, and image building. Participants included **Shri Abhay K Bhushan**, technopreneur; **Shri Salil Dave**, senior director, Microsoft, Seattle, USA; **Shri Kamalesh Dwivedi**, chief information officer, Bellsystem24 Inc, Japan; **Shri Rajen Jaswa**, CEO & Chairman, Ddyno; **Prof Paul C Jennings**, former Vice President and Provost, CalTech; **Prof Sam Mannan**, regents professor, Texas A&M University, USA; **Prof Richard Miller**, president, Franklin

W Olin College of Engineering, USA; **Shri Kamal Nanavaty**, president, Strategy Development, Reliance Industries Ltd, Mumbai; **Prof Surendra Prasad**, former Director, IIT Delhi; **Prof Akshai Runchal**, president, Analytic & Computational Research Inc, California, USA; **Shri Kushal Chand Sacheti**, CEO, Galaxy USA Inc & Key Items Inc, New York; **Prof Dheeraj Sanghi**, dean, Academic Affairs, IIT Kanpur; **Shri Arvind Singhal**, chairman & managing director, Technopak Advisors Pvt Ltd, Gurgaon; **Prof S P Sukhatme**, former director, IIT Bombay; **Prof A K Suresh**, dean, Faculty Affairs, IIT Bombay; and **Prof Satish K Tripathi**, president, State University of New York, Buffalo, USA.

### Academic Advisory Council

The 3<sup>rd</sup> Academic Advisory Council meeting was held on Dec 16, 2013. Participants at the annual event that provides strategic and external inputs on key academic issues included **Prof Sam Mannan**, **Prof Richard Miller**, **Prof Surendra Prasad**, **Prof Dheeraj Sanghi**, **Prof S P Sukhatme**, **Prof A K Suresh** and **Prof Satish K Tripathi**. The agenda this year included criteria and process for faculty promotions and evaluations, diversity in faculty, and the concepts of departments and centres in the IITGN context.



### Essay Writing Contest

**The setting:** It is the year 2035. IIT Gandhinagar has established itself as a leader in world education and has restored the glorious days of Nalanda and Taxila. Through its innovative, enterprising and unique approach, IIT Gandhinagar has woven top academicians, cutting edge researchers and inquisitive students into a golden fabric. It has helped transform the state of Indian education and society at large and the entire world is looking to this star from the east as one of the finest jewels in the necklace of top class universities.

**The essay:** Describe the incredible journey of IIT Gandhinagar from a newly established engineering institution in 2008 to a world leader in education in 2035 in an essay of not more than 2500 words.

**Deadline: March 20, 2014.**

**Who can participate:** Students, staff members, faculty members and well wishers of IIT Gandhinagar.

**Why participate:** To share the vision of IIT Gandhinagar's quest to excellence. Top two selected essays will be showcased on IIT Gandhinagar's website and will receive Apple MacBook Air.

**Where to send your entries:** Send essays (preferably in MS Word) or any queries to Prof. Gaurav at gauravs@iitgn.ac.in.

### Young Researchers Conclave

The third edition of the Young Researchers Conclave held during Dec 26-27, 2013 attracted 50 young research scholars from around the world. These researchers had the opportunity to explore new possibilities and challenges in academic life in India through panel discussions and talks on funding opportunities, collaborative opportunities, returning to India, etc. They also got the opportunity to interact closely with faculty and students of IITGN through various interactive sessions during the two-day event. The event was organized by **Prof Gaurav** and **Prof Harish P M**.

### TinkerTank wins 5th ISB iDiya National Social Venture Competition

TinkerTank Private Ltd, a for-profit technology social enterprise, founded by **Keshav G**, IITGN alumnus, batch of 2008, won the fifth edition of iDiya Challenge, a social venture competition at India School of Business, Hyderabad, on Nov 30, 2013. The award includes an investment support of Rs 2 lakhs from ISB. TinkerTank, the second company incubated at IITGN's Incubation Center, is moving forward with the commercialization of Doopica, a low-cost semi-automated incense-stick machine that helps women produce four times more incense sticks, increasing their monthly income.

## Support for the Institute

### Swabhanu Challenge Grants to Encourage Excellence in UG Research

**Prof A V Anilkumar** of Vanderbilt University has set up the Swabhanu Challenge Grants to encourage excellence in undergraduate research. The grant is named in memory of his maternal uncle **Shri Nanjangud Gangadariah Viswanath**, who was trained as a lawyer, and later became a successful entrepreneur. Students awarded the Swabhanu Grants will receive a certifi-



cate and travel funds for participation in international conferences.

### Reaching Out




**Prof Sudhir K Jain**, director and **Prof Achal Mehra**, dean, Strategic Planning and Special Initiatives attended the **PanIIT Conference** in Houston on Dec 6-8, 2013. They visited the University of South Florida; Georgia Tech; Texas A&M University; Rice University; University of Texas, Austin; and the University of Houston, to promote student and faculty exchanges. They also visited Australia during Nov 6-13, 2013 to participate in the Pravasi Bharatiya Divas. They visited The University of Melbourne, RMIT University,

Swinburne University, Victoria University, Monash University, Deakin University, University of Western Australia, and University of Canberra either singly or jointly. Prof Jain also attended UNISDR/GA Regional Workshop on "Structural vulnerability models for the GAR Global Risk assessment," Canberra, Australia, Nov 11, 2013.


**Prof Amit Prashant** was part of a 10-member delegation that visited the University of Bath, the University of Leicester University and the Open University, UK during Oct 20-26, 2013 to understand the initiatives taken and the practices being followed by these universities to embed e-learning into the teaching-learning experience.

## Faculty News

### Awards and Recognition

- **Prof Abhijit Mukherjee**, Dean, Research & Development, has been elected fellow of the National Academy of Sciences India (NASI). 
- **Prof Surjeet Kour** received the INSPIRE Faculty Award from the Department of Science and Technology (DST), Government of India for her research project **On classification of simple derivations of the polynomial algebra**. 
- **Prof Sairam Swaroop Mallajosyula** has received the INSPIRE Faculty Award from DST for his research project on **Theoretical investigations of carbohydrate protein linkages**. 
- **Prof Jyoti Mukhopadhyay** has been appointed as the Council Member for the National Council

of the Indian Institute of Metals for 2013-14.

- **Prof Pratik Mutha** has been awarded the **Ramanujan Fellowship**, sponsored by DST. Prof Mutha will be working on the **Neural basis of skilled motor behavior**. 

### Sponsored Projects

- **Intelligent virtual reality based gaze-sensitive social communication system for children with autism spectrum disorder**, sponsored by DST, principal investigator, **Prof Uttama Lahiri**, Electrical Engineering.
- **Fabrication and a detailed microstructural investigation of Cu(In<sub>x</sub>Gax)Se<sub>2</sub> (CIGS) thin films with ZnO buffer layer for the photovoltaic applications**, sponsored by SERB, DST, principal investigator, **Prof Emila Panda**, Materials Science & Engineering.
- **Oxidation behavior of rare magnetic**

**thin films**, sponsored by DRDO, principal investigator, **Prof Emila Panda**, Materials Science and Engineering.

- **How are context and health of older adults related? Incorporation of geospatial analysis into sociology of aging** sponsored by ICSSR. principal investigator, **Prof Tannistha Samanta**, Social Sciences. co- principal investigator, **Prof Shivakumar Jolad**, Physics.

### Consultancy Projects

**Design of barricades with improved efficiency** for Raksha Shakti University, principal investigator: **Prof Amit Prashant**, Civil Engineering, co- principal investigator **Prof Bhaskar Bhatt**, Design.

### Continuing Education Programme

**Technical Education Quality Improvement Programme (TEQIP) Gujarat Project**, for Government of Gujarat. principal investigator: **Prof Amit Prashant**, Civil Engineering.

### New Faculty

The following faculty joined IITGN during this quarter:

Name	Designation	Discipline	PhD/Last Degree	Join Date
Shankarjee Krishnamoorthi	Assistant Professor	Mechanical Engg	University of California, Los Angeles, 2013	17.10.13
Vipin Kumar	Visiting Professor	Design & Mech Engg	Massachusetts Inst of Technology, 1988	08.11.13
Pratik Mutha	Assistant Professor	Elec & Biological Engg	Pennsylvania State University, 2009	11.11.13
Sairam Swaroop Mallajosyula	Assistant Professor	Chemistry	JNU Centre for Adv Scientific Res, 2009	12.12.13
Bruno Gaminha	Asst Res Professor	Humanities	ISCTE-Lisbon University Institute, 2012	13.12.13
Satwant S Rihal	Visiting Professor	Civil Engg	University of New Mexico, 1969	23.12.13
Gaurav Sukhija	Research Associate	Social Sciences	University of Illinois, 2011	27.12.13
Svetlana Brzev	Visiting Professor	Civil Engg	IIT Roorkee, 1994	30.12.13
Rajen Jaswa	Visiting Professor	Electrical Engg	Stetson University, 1980	30.12.13
Kishor Trivedi	Visiting Professor	Computer Sci & Engg	University of Illinois, Urbana, 1974	30.12.13
Manuel Ramos	Visiting Professor	Humanities	ISCTE-IUL, 1995	30.12.13
Frederick Coolidge	Visiting Professor	Humanities	University of Florida, Gainesville, 1974	30.12.13



Rosa Maria Perez	Visiting Professor	Social Sciences	ISCTE, Lisbon, 1992	30.12.13
Ramesh Gaonkar	Visiting Professor	Electrical Engg	Syracuse University, New York, 1975	30.12.13
Chandrakumar Appayee	Assistant Professor	Chemistry	IISc, 2008	30.12.13
Sharmistha Majumdar	Assistant Professor	Biological Engg	Cornell University, 2006	30.12.13
Anirban Dasgupta	Associate Professor	Computer Sci & Engg	Cornell University, 2005	30.12.13
Andrea Bobbio	Visiting Professor	Computer Sci & Engg	Politecnico of Torino, 1969	31.12.13

### Scholars in Residence

M Ramamoorthy	Former Director General, Central Power Research Institute, Ministry of Power, Government of India
Lina Fuzzetti	Professor of Anthropology, Brown University, USA
Akos Ostor	Anthropologist, filmmaker and author at Documentary Educational Resources, USA

## Activities at IITGN

### Conference and Workshops on Cognitive Sciences, Process Safety and Seismic Design

The Second **International Conference on Cognition, Emotion and Action** held during Dec 6-8, 2013 was attended by 160 leading researchers from different areas of cognitive science, including computational psychology, philosophy of mind, neuroscience, artificial intelligence, and anthropology. Inaugurated by **Prof Janak Pandey**, vice-chancellor, Central University of Bihar; the keynote address was delivered by **Prof Thomas Metzinger**, Johannes Gutenberg Universitat Mainz. Various international experts from countries like US, Canada, UK, Netherlands, Germany, Hungary and France took part in the conference organized by **Prof Meera M Sunny**.



Kay O'Connor Process Safety Center, Texas A&M University; **Mr Hirak Dutta**, executive director, Oil Industry Safety Directorate (OISD); **Dr Jayaraman Gopal**, advisor-HSE Essar Oil Ltd; **Prof S A Abbasi**, head, Centre for Pollution Control, Pondicherry University; **Mr G Vishwanathan**, former deputy general manager, Indian Petrochemicals Corporation, (now RIL) Vadodara; **Dr Hugo Vits**, general manager, Bitumen Technology and Site & HSSE manager Shell

Technology Center Bangalore; **Dr Mimi Haryani Hassim**, senior lecturer, Universiti Teknologi Malaysia and **Prof Raj Srinivasan**, IITGN.

A four-day short course on **Seismic Design of Earth & Rock-fill Dams** was organized during Oct 15-18, 2013 with support from IITGN Safety Center. The course faculty included **Dr Ahmed El-gamal**, University of California, San Diego; **Dr David Paul**, Lead Civil Engineer in US Army Corps of Engineers; **Prof Sudhir K Jain**, **Prof Amit Prashant** and **Prof Ajanta Sachan**, IIT Gandhinagar. The course was attended by 54 civil engineers including professionals from all over the country and abroad engaged in or responsible for directing design and construction activities from organizations like NTPC, NHPC, BARC, SAIL, Druk Power Bhutan, CECB Srilanka etc.

A two-day symposium on **Process Safety** during Dec 19-20, 2013 saw the participation of leading National and International Process Safety experts, including **Prof M Sam Mannan**, director, Mary

### Short Courses/ Workshops/ Panels

- A short course on **Strengthening of Democracy at Grassroots** by **Dr Sandeep Pandey**, recipient of Ramon Magsaysay Award, Oct 12-13, 2013.
- A one-day workshop on **Technology Incubation** was organized on Oct 12, 2013. **Dr M V Shankar**, director, Technology Planning, India at Cummins Inc, Pune; **Dr Arvind Viswanathan**, chief executive officer, Xellect IP Solutions, Bangalore; **Mr Pulkit Gaur**, CEO Gridbots; **Ms Poyini Bhatt**, chief operations officer, SINE, IIT Bombay were among the speakers. **Prof Sriram Kanvah** and **Prof Joycee Mekie** organized the event, with support from TIDE; DieTY, Government of India and IIT Gandhinagar.
- A short course on **Data Analytics: Application in Modeling, Control and Signal Processing**, supported by IEEE Gujarat Section; Oct 25-26, 2013

was organized by **Prof Babji Srinivasan** and **Prof Harish P M** along with post-graduate students.

- A joint program by IITGN and the Institute of Electrical and Electronics Engineers (IEEE), USA to enhance the quality of electrical engineering education in the country was held on Nov 13-17, 2013 with the logistical support of Gujarat Technological University (GTU). Over 200 faculty members from engineering institutes from across Gujarat enrolled in one of four basic electrical engineering courses delivered by **Prof Arup Lal Chakraborty**, **Prof Joycee Mekie**, **Prof K V V Murthy**, and **Prof Shanmuganathan Raman**. The workshop also included pedagogical sessions conducted by **Prof Michael Lightner**, vice president, Educational Activities, IEEE.
- A short course on **Intersections of Law and Technology** by **Ms Kelly**

**Dhru**, head, research wing at Research Foundation for Governance in India (RFGI), Nov 16-17, 2013.

- A workshop on **Low Cost Hi-Tech Automation** by **Prof N Ramakrishnan** and **Prof Joycee Mekie**, Nov 28-30, 2013 was attended by 12 participants from organizations like Reliance, Mahindra & Mahindra, Memco, Erhardt-Leimer etc. Prof Ramakrishnan also conducted a two day hands-on training for engineers from Peass, Navsari during Dec 13-14, 2013.
- The DST Contact programme workshop on **Earth Surface Processes** coordinated by **Prof Vikrant Jain** was organized at IITGN from Dec 9-10, 2013.

### Lectures

- **Overview of ABB corporate research** by **Dr Vinay Kariwala**, group leader, ABB Corporate Research Center; **Model-based advanced control: perspective**

- tives from oil & gas industry by **Dr Niket Kaisare**, principal scientist, ABB Corporate Research Center, Bangalore.
- **Modelling of earth surface processes** by **Prof R N Singh**, INSA senior scientist, National Geophysical Research Institute (NGRI).
  - **Macromolecular crystallography using Bruker instruments** by **Dr Vernon Smith**, Bruker AXS, Germany.
  - **An overview of Harappan civilization and the application of stable isotope analysis in archaeology** by **Dr V N Prabhakar**, superintending archaeologist, Archaeological Survey of India.
  - **Dholavira: a unique Harappan city** by **Dr R S Bisht**, professor of archaeology (retired), Archaeological Survey of India (ASI); and lead archaeologist of Dholavira site.
  - **Sanskritam Kim Artham? - Why Sanskrit?** by **Prof Gajendra Panda**, L D Arts College, Ahmedabad.
  - **Memory systems, case studies, & theoretical applications** by **Dr Paul Li**, UC Berkeley.
  - **The infinite network** by **Dr Nikhil Balram**, president and CEO, Ricoh Innovations Corporation.
  - **Comparing Carnatic and Hindustani music systems** by **Dr Lakshmi Sreeram**, visiting faculty, IIT Madras.
  - **Tata incubation center's program to develop abrasion resistant automotive paint and R&D in India and abroad** by **Dr Soumen Sensarma**, Tata Incubation Center.
  - **Holographic adventures in flat space** by **Prof Arjun Bagchi**, IISER, Pune.
  - **Physical simulation of extreme and transient wind effects on civil structures** by **Dr Partha P Sarkar**, director, Wind Simulation and Testing Laboratory, Iowa State University.
  - **Fuel cells in India - Present scenario and future perspective** by **Mr Alok Goel**, head of India Operations, Ballard Power Systems.
  - **Conjugates of calixarenes as smart supramolecular systems for selective recognition of ions and molecules** by **Prof C P Rao**, IIT Bombay.
  - **Madhava and the invention of calculus** by **Prof Divakaran**, formerly with Tata Institute of Fundamental Research, Mumbai.
  - **Fuel cells in the Indian navy** by **Dr Suman Roy Choudhury**, scientist F & director of Fuel Cell Research Center, Naval Materials Research Laboratory, Ambarnath, Maharashtra.
  - **Entrepreneurship and Technion's experience with incubation** by **Dr Harry Yuklea**, consultant to the Na-

tional Economic Council, Prime Minister's Office, State of Israel, and Jacobs Technion Cornell Innovation Institute.

- **Ultrafast snapshots of matter and beyond** by **Dr Anil Patnaik**, senior research scientist, US Air Force Research Laboratory (AFRL) and Research faculty, Wright State University Ohio.
- **Seismic design and constructions** by **Mr Jitendra Bothara**, technical director, Miyamoto Impact, a New Zealand consulting engineering firm.



### CalTech-IITGN Course Collaboration

IITGN and Caltech are collaborating on a joint design course titled "Disruptive Design: Design for the Developing World." The course is offered at IITGN by **Prof Bhaskar Bhatt** and at Caltech by **Prof Ken Pickar**. The classes share lectures by IITGN and Caltech faculty by video conference and 19 IITGN students are paired with 16 Caltech and Art Center College of Design, Pasadena, students on nine design projects based in India. **Prof Pickar** and 14 students from Caltech & Art Center College of Design visited the institute during Dec 15-22, 2013, to identify opportunities for design intervention. Together with IITGN students, they visited the Polio Foundation, the salt-pan workers in the Little Rann of Kutch, the Spine Research Center at the Ahmedabad Civil Hospital, agricultural workers in Viramgam, kite-makers & incense makers in Ahmedabad. A half-day symposium on **Design for the developing world** was also held on Dec 21, 2013.

### Awards & Recognition

- **Yogesh Shantaram Fulpagare**, PhD scholar, mechanical engineering, has been awarded the INSPIRE Fellowship 2013 from Ministry of Science & Technology, Government of India. He is working on the thesis titled **Data Center Thermal Management** with **Prof Atul Bhargav** as advisor.
- **Bhaskarjyoti Das's** photo-essays on **A Buddhist marvel in Golaghat** and **The tea tribes of Assam** have been published in the magazines Eclectic Northeast and Little India, respectively.
- The **Texas Instruments innovation challenge - India analog design contest** (college level), was won by the team comprising of **Mandar Bhoir, Mohit**

**Chand, Mohit G, Chandrashekhar Tunga and Apoorva Ojha. Prof Joycece Mekie** coordinated the event.

### Amalthea '13

The 4<sup>th</sup> edition of **Amalthea**, the annual technical summit of IITGN based on the theme **Shaping the world through Innovation and Technology** was held during Oct 19-20, 2013. An "Innovation Conclave", a "Design and Innovation Expo" and several technical and non-technical events were held over the two days. The conclave was inaugurated by **Mr Manu Seth**, director, Marketing, HTC India; and **Shri Maheshwar Sahu**, additional chief secretary, Industries and Mines Department, Government of Gujarat. Eminent speakers at the conclave included **Dr Kamlesh Lulla**, chief scientist and research director, NASA; **Mr Alan Emtage**, inventor of Archie, the world's first search engine; **Mr Paparao Kodali**, vice president, Ingersoll Rand; **Mr Hadi Syed Abdul**, vice president, Robert Bosch Engineering and Business Solutions; and **Dr Srinivas Garudachar**, Grameen Intel Social Biz. Prominent exhibitors at the Expo included **ISRO, DC Design, International Thermonuclear Experimental Reactor (ITER-India), iNDEXTb and KPIT Technologies**. Student coordinators included **PVS Anurag, Mudit Rathor, Samarth Vajjanapurkar**, and **Gaurav Sharma**.

### Visit to Dholavira

Fifteen IITGN faculty members and their families visited Dholavira, a major Harappan site in the Rann of Kutch, Gujarat, on Oct 19-20, 2013. Guided by **Dr R S Bisht**, eminent archaeologist and former Joint Director General, Archaeological Survey of India, who directed the excavations at Dholavira in the 1990s. The visit was organized by **Mr Michel Danino**, IITGN Guest Professor.

## Sports News

### 49<sup>th</sup> Inter IIT Aquatic Meet

**Animesh Kumawat** won silver medals in 1500m free-style, 100m back-stroke and 200m back-stroke at the **49<sup>th</sup> Inter IIT Aquatic Meet** held during Oct 1-4, 2013 at IIT Guwahati. **Parth Sane** won a silver medal in 50m butterfly and a bronze in 100m back-stroke while **Nisha Rawat** won a bronze medal in 50m breast-stroke in the women's category.

### 21<sup>st</sup> Inter IIT Staff Sports Meet

**Mr Santosh Raut** won a bronze medal in javelin throw at the **Inter-IIT Staff Sports Meet** held during Dec 25-29, 2013. The 24-member strong IITGN contingent secured 3<sup>rd</sup> place in the March Past competition.