

Connections

IIT Gandhinagar



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Connections is the quarterly newsletter for friends of IIT Gandhinagar

Institute Activities

SIXTH ACADEMIC ADVISORY COUNCIL MEETING

The sixth Academic Advisory Council meeting was held on Dec 26, 2016 to brainstorm on several important issues. These included initiatives for strengthening teaching and learning process, improving governance systems, identifying focus areas in research, and planning future academic facilities. The Academic Advisory Council comprises of eminent and leading academicians and meets every year to discuss academic issues of priority to IITGN. It provides strategic and external inputs on issues of key importance as the Institute grows from being a 1200 student Institute to one with 5000 students.



SEVENTH LEADERSHIP CONCLAVE

On Dec 27, 2016, the seventh Leadership Conclave was held to discuss initiatives for strengthening and sustaining the culture of the institute, grooming young faculty for leadership roles, alumni engagement, and IITGN's Research Park. The Conclave provides guidance to the Institute about in its short, medium, and long-term strategic issues. It includes some of the most eminent thinkers from India and around the world, and includes participants from industry, academia and government.

BOARD OF GOVERNORS MEETING

Twentieth meeting of the Board of Governors of the IITGN was held on December 5, 2016 at the campus. While sharing their observations about the Institute, the members congratulated the Institute for having built a beautiful campus and commendable growth and achievements in various activities. In addition to the routine matters about functioning of the Institute, the Board considered and approved setting up of a Development Office at the Institute for fund-raising and to manage relationship with donors, creation of some new positions of Deans/ Associate Deans, and revision of norms for the Excellence Awards for non-teaching staff.



The Board also appreciated that TATA Motors Financial Aid Programme (TMFAP) has been set up at the Institute in partnership with TATA Motors Limited (TML) and IIT Bombay Alumni Association.

IITGN-INDIAN ARMY MoU

Lt Gen Subrata Saha, Dy Chief of Army Staff signed an MoU with IITGN on Dec 27, 2016 to set up a Research and Development cell at IITGN campus. The cell will undertake R&D activities of interest to Indian Army. It will work with the IITGN faculty and students and leverage IITGN research infrastructure. The cell will consist of 3 - 6 army personnel.



Support for the Institute

Dr J L NAYYAR SCHOLARSHIP

Mr Mohinder L Nayyar has set up an undergraduate scholarship of Rs 50,000 per year in honour of his brother Dr J L Nayyar. Mr Nayyar is an internationally recognized specialist in the areas of piping, valves, materials and codes and standards and was honoured by American Society of Mechanical Engineers



(ASME) through several honors and awards, including Melvin R Green Medal. He did his engineering education at University of Roorkee (now IIT Roorkee) and is a recipient of 2016 Distinguished Alumnus Award of IIT Roorkee. Mr. Nayyar is based in Ashburn, Virginia, USA.

VISITS

Mr N R Narayan Murthy, co-founder of Infosys, visited IITGN on October 25,



2016 and held an interactive session with students. This is the third visit of Mr Murthy to the Institute who has been a great supporter of IITGN.

Faculty News

PATENTS

- A Walking aid system for a Parkinson's disease affected person, Inventors include **Prof Uttama Lahiri, Mr Sai Rama Krishna G & Mr Megh Patel.**
- Pharmaceutical composition and process for preparing the same, Inventors include **Prof Sivapriya Kirubakaran, Prof Vijay Thiruvengatam, Dr Kapil Juvale, Mr Vijay Singh, Dr Purushothaman Gayathri & Mr Shaik Althaf.**
- Substituted 1,2 - Dihydro - 3H - Pyrazolo [4,3-C] Quinolin - 3 - One as ATR Kinase Inhibitors, Inventors include **Prof Sivapriya Kirubakaran, Prof Vijay Thiruvengatam, Mr Shaik Althaf & Ms Rashmi Bhakuni.**

SPONSORED PROJECTS

- Study of Lunar Geomorphological and impact cratering processes through Chandrayaan-1 Data sets sponsored by Indian Space Research Organisation. Principal investigator: **Prof Vikrant Jain,** Earth Sciences.
- Anti-CGGBP1 adjunct cancer therapy: Regional advantage in Gujarat sponsored by Gujarat State Biotechnology Mission. Principal investigator: **Prof Umashankar Singh,** Biological Engineering.
- Strong Electromagnetic fields produced in heavy ion collisions and hot and dense QCD matter sponsored by Science and Engineering Research Board. Principal investigator: **Prof Vinod Chandra,** Physics.
- Scale-up of Diesel Autothermal Reformer from 5 kWe to 30 kWe for Naval Applications sponsored

- by IMPRINT India. Principal investigator: **Prof Atul Bhargav,** Mechanical Engineering.
- Reusable and Field - Deployable Nanobiocatalysts for Detection of Pesticides and Herbicides sponsored by IMPRINT India. Principal investigator: **Prof Bhaskar Datta,** Chemistry.
- Advanced nanotracers for product life cycle assessment and product monitoring sponsored by IMPRINT India. Principal investigator: **Prof Superb Misra,** Materials Science and Engineering.
- Towards Predictive Modeling of Oxidation of Nanoaluminum Particles - A Multiscale Approach sponsored by Science and Engineering Research Board. Principal investigator: **Prof Dilip Srinivas Sundaram,** Mechanical Engineering.
- Effective constraint handling for single and multi-objective optimization in Cuckoo Search Algorithm: Application to optimal control problems sponsored by **Prof Nitin Padhiyar,** Chemical Engineering
- CMIP5 Statistical Downscaling for hydro-climatic projections with CMIP5 Simulations to assess Impact of Climate Change sponsored by Ministry of Water Resources. Principal investigator: **Prof Vimal Mishra,** Civil Engineering.
- Impact of Climate Change on Water Resources of Sabarmati Basin sponsored by Ministry of Water Resources. Principal investigator: **Prof Vimal Mishra,** Civil Engineering.
- Development of High Voltage (HV) devices for CCD (Charge Coupled Device) clock drivers sponsored by the Department of Space. Principal investigator: **Prof Nihar Ranjan Mohapatra,** Electrical Engineering.
- Understanding the thermodynamics and Kinetic factors affecting polymorphism of Pharmaceuticals ingredients sponsored by Department of Science & Technology Principal

- Investigator: **Prof Sameer Dalvi,** Mechanical Engineering.
- DSIR - Common Research and Technology Development Hub - Chemical Processes sponsored by Department of Scientific and Industrial Research Principal Investigator: **Prof Chinmay Ghoroi,** Chemical Engineering.
- Zero-Carbon Solar-powered Hydrogen Production via Plasmonic Nanoantenna Enhanced Photocatalytic Water-splitting sponsored by Department of Science & Technology Principal Investigator: **Prof Ravi Hegde,** Electrical Engineering

CONSULTANCY PROJECTS

- Device physics training for MAXIM engineers for Maxim India Integrated Circuit Design Pvt Ltd Principal Investigator: **Prof Nihar Ranjan Mohapatra,** Electrical Engineering.
- Alternate Design of Ash Dyke for NTPC Power Projects for NTPC Ltd Principal Investigator: **Prof Amit Prashant,** Civil Engineering.
- Construction of Elevated Viaduct from Vastral Gam to Apparel Park for J Kumar Infraprojects Ltd Principal Investigator: **Prof Dhiman Basu,** Civil Engineering.
- Review of Flood studies report for Dholera International Airport for Dholera International Airport Company Ltd. Principal Investigator: **Prof Pranab Mohapatra,** Civil Engineering

IRRIGATED AREAS MAPPING

A team led by **Dr Vimal Mishra** developed for the first time, annual irrigated area maps at a resolution of 250 metres for the period 2000-2015 covering all the agroecological zones of India.

NEW FACULTY

The following faculty members joined IITGN during this quarter:

Name	Designation	Discipline	PhD/Last degree	Date of joining
Manas Paliwal	Assistant Professor	Materials Science & Engineering	McGill University, Canada	1.12.16
Ravi Banavar	Visiting Professor	Electrical Engineering	University of Texas	5.12.16
Mithun Radhakrishna	Assistant Professor	Chemical Engineering	Columbia University	9.12.16
Ravi Sastri Ayyagari	Assistant Professor	Mechanical Engineering	Illinois Institute of Technology	14.12.16
Sandeep Pandey	Visiting Professor	Mechanical Engineering	University of California	16.12.16
H. N. Mhaskar	Scholar-in-residence	Mathematics	Ohio State University	19.12.16

Activities at IITGN

INDIA KI KHOJ

One of the unique programmes at IITGN is **India ki Khoj**, an intensive module focused on the understanding and appreciation of India through diverse lectures and field visits. The aim of the programme is to explore India in a multidisciplinary way through perspectives from sociology, economics, culture, art, technology and beyond. This year IKK was organised from Dec 12-19, 2016 and included twelve students from CalTech (US), eight students from JAIST (Japan) and ten students from IITGN. Some of highlights included an inaugural lecture by **Prof Chinmay Tumble (IIMA)** on **Migration and Urbanization in India, 1870-2020** and an interactive session entitled **Popular Cinephilia in South Asia** by **Prof Ravikant,** Centre for

the Study of Developing Societies (CSDS). Field visits included trips to Old Ahmedabad, Gandhi Ashram and L D Museum of Indology.





IITGN-UL FIRE SAFETY RESEARCH STATION

IITGN-UL Fire Safety Research Station was commissioned at IITGN with active support and participation from Underwriters Laboratories. It is a full-scale 3-story test facility that enables a variety of fire tests under realistic conditions, and is the first such facility in India. The Station was inaugurated on December 8, 2016 and first test was conducted the same day to study fire performance of building façade materials and their fire safety characteristics. UL has been our active partner since June 2009 and this partnership is a fine example of strong collaboration between industry and academia.

HERITAGE FILM FESTIVAL 2016

IITGN in collaboration with Aadhar hosted the **Heritage Film Festival 2016** on November 20, 2016. It included screening of selected documentaries followed by an open debate on heritage and crafts.

ENTREPRENEURSHIP DEVELOPMENT WORKSHOP

A five day entrepreneurship development workshop was conducted by IITGN community outreach program NEEV in collaboration with ICreate India during November 21 - 25, 2016. The aim of this workshop was to build the capacity of those interested in starting a micro to small scale enterprise and to develop entrepreneurship trainers.

MEHFIL-E- ADAB

An evening with Urdu Poetry Recitation was organised by **Prof Hamida Chopra** and **Mr Mubashshir Ahsan** at IITGN on November 18, 2016. Students of Urdu class recited 'Ghazals' and 'Nazms' of various poets. It was attended by guests, students and faculty members from different disciplines. A few poets from Ahmedabad were invited as guests who added colors to the evening by their own poetry. Director of Peer Murshid library, **Mr Moyuddeen 'Bombaywala'** and **Prof Nisar Ansari** from Vidyapeeth were guests of honour. Poems of Urdu Poets like Allama Iqbal, Hasrat Mohani, Pt Brij Narayan Chakbast, Sahir Ludhyanwi, Iqbal Azeem, Mohd Ali Johar were recited by students.



INDIAN WOMEN AND MATHEMATICS REGIONAL WORKSHOP

IITGN organised a regional workshop on Career Opportunities in Mathematics during December 20 - 21, 2016. The workshop aimed to provide exposure to women faculty and students from Gujarat and neighboring states, engaged in teaching/research or pursuing their graduation in mathematics, to various career options in mathematics.

SINGAPORE STUDENTS VISIT IITGN

Students from National University of Singapore visited IITGN on December 5, 2016. The programme consisted of talks by IITGN faculty members on natural history of Gujarat, archeology and development issues in Gujarat. The visit was part of NUS's annual

STEER-India programme, which is two-week exposure trip in Gujarat's educational institutes, NGOs and local communities.

NEWTON-BHABHA INDIA-UK ADVANCED TRAINING SCHOOL

IITGN organized the Newton-Bhabha India-UK Advanced Training School (IUATS) on Optimal design and control of Smart community: New ideas for off-grid communities from November 7-17, 2016. IUATS is designed to provide training to UK/Indian - based post-doctoral and early career (holding a PhD) researchers in advanced research techniques and methodologies. It also provides unique opportunity to participants for sharing research expertise and networking with a focus on promoting international collaboration and supporting capacity for investigation and innovation in the broad area of "Smart community". A total of 27 participants, 8 faculty members from UK and 19 faculty/postdoc researchers from across India participated at the IUATS.



CHEMFERENCE 2016

IITGN hosted ChEmference, a national conference on December 3 - 4, 2016. The aim of the conference was to bring together graduate students and researchers from industry to exchange and share their experiences and ideas on all aspects of Chemical Engineering and Technology, discuss the practical challenges encountered and the solutions adopted. Previously, ChEmference was held at IIT Kanpur (2008 and 2010), IIT Madras (2009), IISC Bangalore (2011), jointly at IIT Bombay and ICT Mumbai (2012) and IIT Hyderabad (2015).

NATIONAL MATHEMATICS INITIATIVE WORKSHOP

IITGN organized National Mathematics workshop on **Complexity Theory** from November 2 - 6, 2016. The workshop had a broad scope that highlighted exciting research developments in areas such as structural complexity, low complexity classes, circuit complexity, parameterized complexity and communication complexity.

SCIENCE AND MATHEMATICS WORKSHOP FOR TEACHERS

IITGN hosted a two-day hands-on Science and Math workshop for school teachers on Oct 3-4, 2016. This workshop was attended by 100 teachers from Sabarkantha district. The second workshop was attended by 100 teachers from Aravalli district on Oct 6 -7, 2016. These workshops were organised by **Prof Sriram Kanvah** and **Mr Manish Jain**.



RASHTRIYA EKTA DIWAS

As a tribute to Sardar Vallabhbhai Patel and to mark his birthday, October 31 is celebrated as **Rashtriya Ekta Diwas** (National Unity Day). On his birthday, Physical Education Section at IITGN organized a **Run for Unity** as a demonstration of unity and integrity. The run was for 2.8 km and saw a participation of around 150 from the IITGN community including students, staff and faculty.

SHORT COURSES

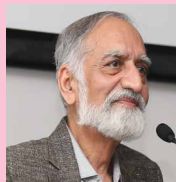
- Short course on Industrial Internet of Things (IIoT) – A Practical Perspective by **Mr Amit Kumar**, Antarriksh, November 4 – 6, 2016.
- Short course on Basic Bioinformatics:

Databases –Based analyses by **Dr Prasoona Agarwal**, College of Medicine, Manitoba, Canada, November 11 – 13, 2016.

- Short course on Innovation to Deployment: Roadmap and Case Studies by **Dr Vikram Rao** and **Dr Raghuraj Gupta**, RTI International, November 11 – 13, 2016.

- Short course on Basics of Space Mission by **Prof Ashok Joshi**, IIT Bombay, November 11 – 13, 2016.
- GIAN workshop on Fuel Cell Technology by **Prof Gregory Jackson**, Colorado School of Mines, December 9, 2016

LECTURES



Mr Kiran Karnik, ex-president of NASSCOM and eminent administrator visited IITGN on October 27, 2016 and delivered the Nani Palkhivala Memorial lecture titled "Of Umbrellas And Satellites: Linking the Dots to Innovate". Nani Palkhivala Memorial Trust, Mumbai sponsored the lecture.

Music by **Mr Rajiv Bhatt**, Ernst & Young, October 16, 2016

- Cold Spray Gas Deposition of Materials by **Dr Antonello Astarita**, University of Naples, October 17, 2016.
- String Theory and Gauge Gravity Correspondence by **Prof Shiraz Minwalla**, TIFR Mumbai, October 19, 2016.
- Quadratic forms: Ancient to Modern by **Prof Sujatha Ramdorai**, University of British Columbia, October 20, 2016.
- Quantum theory of consciousness by **Prof Yeshwant Rao Waghmare**, National Academy of Sciences, October 21, 2016.
- Regularity questions to Elliptic Partial

Differential Equations by **Mr Ram Baran Verma**, October 10, 2016.

- Exploring Elementary Particles at LHC by **Prof Kerstin Borass**, CERN, LHC, November 10, 2016.
- Bias for Action by **Dr Ashish Nanda**, IIMA, November 9, 2016.
- Two lectures on Introduction to machine learning and approximation theory and Local analysis using spectral data by **Prof Hrushikesh Mhaskar**, California State University, December 22 – 23, 2016.
- Application of Aluminum Alloys by **Dr Kumar Jata**, Jata Materials Solutions, LLC, Dayton Ohio, December 29, 2016.

OTHER LECTURES

- Achieving Excellence – Lessons from

Student and Staff Activities

AWARDS AND RECOGNITION

- Two students **Harsh Modi** and **Vismay Vakharia** had been chosen to represent IITGN for **Technological Excursion** to IIT Kanpur Astronomy Club for Annual Inter College Astronomy meet **Mandakini 2016** held on October 7 - 9, 2016.
- A team of 4 students namely **Jammu Tarun Kumar**, **Rahul Rajeev**, **Jatin Ashish Dholakia** and **Putsala Anirudh**, members of Mean Mechanics Club, Technical Council represented IITGN at Techfest 2016 held at IIT Bombay. They presented **Submerge** an underwater robotic submarine challenge. Based on the technical aspect of design their abstract got selected in top 40 teams out of 133 registrations pan India. They cleared first round by securing 5th position among 40 teams and in the finale secured position among top 9 teams across India.



AMALTHEA 2016

Amalthea 2016, the annual Technical Summit of IITGN was organized on Oct 22-23, 2016. **Mr V K Saraswat**, an eminent scientist and a member of NITI Aayog, inaugurated the conclave. This year's theme was **Technologizing Challenges and Spreading Knowledge**. The objective of Amalthea '16 was to bring out the simple correspondence between technology and development to share experiences and generate new ideas. The exhibition **Expediting Development through Tech and Innovation** and the symposium on

Technologies in Defense and Internal Security were the highlights of Amalthea this year. Amalthea continues to grow as an avenue for showcasing innovative products developed at IITGN and to witness the best technology being incubated here in the years to come.

WINTER CARNATIONS

A unique festival that brings together the entire campus community, **Winter Carnations 2016** was based on the theme of **Halloween** where everyone was dressed in spooky costumes. The carnival thrived with colorful lights, live music performances, aroma of great food, and cheers of people enjoying games around the stalls.



Sports News

32ND INTER-IIT AQUATICS MEET

The **32nd Inter-IIT Aquatics Meet** was held at IIT Kanpur from October 2-5, 2016. **Aagam Shah** represented IIT Gandhinagar at the meet in the Men's 50m Butterfly. He was a finalist and finished 7th with a timing of 36.07s.

SHAURYA'16 – ANNUAL SPORTS FEST OF IIM AHMEDABAD

A total of 10 teams from our Institute participated in this tournament, held during October 14 - 16, 2016. Four teams reached the semi-finals and two were finalists. In overall

standing after the tournament, IITGN stood fifth in the table among 15 colleges. IITGN bagged a silver and a gold medal in Volleyball (Girls) Table Tennis (Boys) respectively.

ANNUAL SPORTS FEST OF DAIICT

In a successful tournament at Concours'16 – Annual Sports Fest of DAIICT held during November 10 - 13, 2016, IITGN's three teams brought laurels to the institute with a podium finish. The teams of Volleyball Girls and Table Tennis Boys bagged a gold medal whereas the Basketball Boys managed to earn a silver medal.

INTER-IIT SPORTS MEET

The **51st Inter-IIT Sports Meet** held during December 12 - 19, 2016 concluded at IIT Kanpur. IITGN contingent consisted of 91 students over a span of 12 games. Overall, the performances of all teams were commendable with special appreciation to the teams of Basketball Boys, Volleyball Girls and Lawn Tennis Boys for making it to the Quarter-finals.

Ms Twinkle Patel won three bronze medals in 100 Mtr, 200 Mtr and long Jump. She stood 4th in shot put during **23rd Inter-IIT Staff Sports Meet** held during December 21-25, 2016