



2012 2013



Indian Institute of Technology Gandhinagar
VGEC Campus, Chandkheda, Ahmedabad 382 424





2012

2013



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VISION, MISSION AND VALUES

Goals
 Vision
 Mission
 Values
 Principles

FROM THE DIRECTOR'S DESK



Prof Sudhir K Jain

The Institute is developing at a very rapid and frenetic pace, thanks to the tremendous energy and vitality of our young faculty, staff and students. Numerous visitors speak of the urgency they smell in the air, and the enthusiasm they experience in the community. Over the past year IITGN has made rapid strides in its mission of evolving into a world-class institution, most notably:

1. We took possession of the land for our permanent campus and through a very innovative, collaborative and consultative process, developed its construction plans. We expect to build a unique campus that will encourage interaction and require minimal energy consumption and maintenance.
2. Some of the focal areas in research at IITGN have started to emerge. During the past year, our Board of Governors approved the establishment of four Centres in Safety, Design and Innovation, Biomedical Engineering, and Archaeological Sciences. The Underwriters Laboratories (UL) stepped forward to support the Safety Centre; Ricoh Company Ltd is supporting the Design and Innovation Centre, and the Biomedical Engineering Centre is being supported by the Government of Gujarat. A major international conference on Safety was organized by the institute during the year, enabling us to host numerous eminent experts from India and overseas and to develop collaborations.
3. A significant number of new donors demonstrated their faith in the future of the institute by investing in its agenda of excellence. Among the corporate entities, besides Underwriters Laboratories and

Ricoh Company Ltd, is the Gujarat Minerals Development Corporation (GMDC), which has contributed significant funds to the institute.

4. The institute established its Incubation Centre, which is currently incubating GridAnts, a start-up company spearheaded by four graduates of IITGN's Pioneer Batch.
5. We launched our Scholars-in-Residence Programme, enabling us to bring numerous eminent scholars from around the world to spend time at IITGN. The success of our faculty recruitment, both for career faculty and visiting faculty, has drawn widespread attention in the country.

In fewer than 5 years, the institute has made tremendous progress and can take rightful pride in:

- its innovations in the BTech and MTech curricula, and the education it provides to its students.
- its innovations in faculty recruitment and governance.
- disciplinary diversity, including integration of the humanities and social sciences within the overall academic culture of the Institute.
- philanthropic fund raising and its innovative application in promoting excellence.

Much remains to be done however to achieve our ambition of becoming one of the top-rated universities in the world. In pursuit of this agenda for excellence, some of the priority items are:

1. Significantly improving the quality of admissions to PhD and MTech programmes; Ramping up our research infrastructure and research output; Gaining national (in the short term) and international (in the medium term) leadership in a few niche areas.
2. Ramping up our philanthropic fund raising and creation of a large endowment fund.
3. Firmly embedding our culture of excellence, research and scholarship, and our core values of impeccable integrity in all aspects of institute management, which is embraced by every member of the IITGN community.
4. Development of leadership that will sustain the current momentum for decades ahead; creating a staff cadre (non-faculty) that will help the faculty to carry forward this momentum.
5. Internationalization of the institute so that a significant proportion of our students receive international experience, and at any given point of time there are a substantial number of international scholars at the institute as students and faculty.

IITGN has been extremely fortunate to have students, staff and faculty with a tremendous sense of ownership of the institute, a very supportive Board of Governors, numerous well-wishers inside and outside the country who are not only our cheer-leaders, but also contribute

generously to the institute, a very supportive local community, and government officials (both Central and State) who share our enthusiasm in the future of the institute. In particular, mention should be made of Prof M R Patel, Principal, VGEC and his colleagues and students, who have been wonderful hosts for us. The numerous consultants and the engineering team of IITGN and of CPWD have put in tremendous work and shown exemplary commitment toward building a world-class campus for the institute in a timely manner at a reasonable cost.

Few people get the opportunity of getting to build a new university, and therefore, every stakeholder of IITGN carries with him or her a great responsibility to do things just right, to ensure that future generations of students and academics get truly top-class education and research opportunities, and to ensure that IITGN becomes a fountainhead of solutions for the challenges facing society. India deserves a great university with an international stature, akin to that Nalanda and Taxila held many centuries earlier, and IITGN aspires to be that great Indian university of the 21st century. Our country, where a sizable population is deprived of the basic necessities of life, can neither afford aspirations that are any lower nor actions that fail to line up to those lofty expectations.

Prof Sudhir K Jain
Director

ACADEMICS



Programmes Offered

Undergraduate (BTech)

Chemical Engineering
Electrical Engineering
Mechanical Engineering

Postgraduate (MTech)

Chemical Engineering
Civil Engineering
Electrical Engineering
Materials Science and Engineering
Mechanical Engineering

PGDIIT

Chemical Engineering
Civil Engineering
Electrical Engineering
Materials Science and Engineering
Mechanical Engineering

Doctoral

Chemical Engineering
Chemistry
Civil Engineering
Cognitive Sciences
Electrical Engineering
English

Mathematics

Mechanical Engineering
Materials Science and Engineering
Philosophy
Physics
Psychology
Sociology

Developments at IITGN

In its endeavour to be a leading institution of research and education, IIT Gandhinagar encourages innovative approaches to and bold experiments in education, which are consistent with its mission and vision. Among the major developments and initiatives undertaken in 2012-13:

BoG Approves New Programmes, Centres and Schemes

At the BoG meeting held on Dec 3, 2012, the Board approved the establishment of **two-year MSc programmes** in Chemistry, Mathematics and Physics, and a BTech programme in Civil Engineering. The Board also approved the creation of four **Centres for Safety, Design and Innovation, Biomedical Engineering and Archeological Sciences**. At another meeting held on March 28, 2013 the BoG approved the establishment of a **two-year MSc Programme** in Cognitive Science and a **two-year MA programme** in Society and Culture. To incentivize undergraduate and postgraduate student research, the BoG also approved a **cash award scheme** for papers published in refereed journals and also endorsed the norms to provide overseas research experience to PhD students of IITGN. It also approved a plan for the creation of a **R&D Park at the permanent campus**. To strengthen the **Children's Education Fund** scheme for contractual staff members, the Board enhanced the reimbursable limit from Rs 7,500 to Rs 10,000 per year per family. The BoG also sanctioned an

interest-free **soft advance** for new staff members.

Scholars-in-Residence and Industry-Academic Associates

In the 7th meeting of the Board of Governors held on June 23, 2012, two new schemes namely the **Scholars-in-Residence Scheme** and the **Industry-Academic Associateship Scheme** were approved. The **Scholars-in-Residence Scheme** aims to invite scholars with outstanding track record in teaching or research to spend significant periods of time, varying from a month to a year, at IITGN to promote the spirit of inquiry, research and scholarship.

Academic Advisory Council Meeting

The second Academic Advisory Council Meeting was held on Dec 17, 2012. The eminent invitees discussed the core values and culture that a growing institute like IITGN should aspire to have. The discussions were wide-ranging and included aspects pertaining to improving

research excellence and output, and mentoring support for young faculty and leadership personnel. The external members included **Prof Pratim Biswas**, chairman, Department of Energy, Lucy & Stanley Lopata Professor, Washington University, St Louis, USA; **Prof Nitesh Chawla**, Frank Freimann Collegiate Chair and director of the Interdisciplinary Center for Network Science and Applications (iCeNSA) and Data Inference Analytics and Learning Lab (DIAL), University of Notre Dame, USA; **Prof Sam Mannan**, Regents Professor, T Michael O' Connor Chair Professor, Texas A&M University, USA; **Prof Abhijit Mukherjee**, director, Thapar University, Patiala; **Prof Dheeraj Sanghi**, dean academic affairs and Professor, IIT Kanpur; **Prof S P Sukhatme**, former director, IIT Bombay and **Prof Satish K Tripathi**, president, State University of New York, Buffalo, USA.



Leadership Conclave

The third Leadership Conclave was held on Dec 18, 2012. The topics that were discussed include national leadership in the next five years in specific areas, bold initiatives using donor funds and possible trajectories for IITGN faculty members and staff development. External participants included **Dr Hasmukh Adhia**, principal secretary, Education Department, Government of Gujarat; **Prof Pratim Biswas**, chairman, Department of Energy, Lucy & Stanley Lopata Professor, Washington University, St Louis, USA; **Prof Nitesh Chawla**, Frank Freimann Collegiate Chair and director of the Interdisciplinary Center for Network Science and Applications (iCeNSA) and Data Inference Analytics and Learning Lab (DIAL), University of Notre Dame, USA; **Mr Salil Dave**, senior director, Microsoft IT Global Strategic Initiatives team, Seattle, USA; **Prof Sam Mannan**, Regents Professor, T Michael O' Connor Chair Professor, Texas A & M University, USA; **Mr Kamal Nanavaty**, president, Strategy Development, Reliance Industries Limited, Mumbai; **Prof Akshai Runchal**, president, Analytic &

Computational Research Inc, California, USA; **Mr Kushal Chand Sacheti**, CEO, Galaxy, New York; **Mr Maheshwar Sahu**, principal secretary, Industries and Mines, Government of Gujarat; **Prof Dheeraj Sanghi**, dean academic affairs and Professor, IIT Kanpur; **Mr Piyush Shah**, executive vice chairman and managing director, Hitachi Hi-Rel Power Electronics Pvt Ltd, Gandhiangar, Gujarat; **Prof S P Sukhatme**, former director, IIT Bombay; **Prof Nitish V Thakor**, director, SINAPSE Institute, National University of Singapore and **Prof Satish K Tripathi**, president, State University of New York, Buffalo, USA.

IITGNs First Convocation

On July 22, 2012 IIT Gandhinagar held its first Convocation at which 86 graduating students were awarded Bachelor of Technology degrees in Chemical, Electrical and Mechanical Engineering. **Mr N R Narayana Murthy**, Chief Mentor, Infosys Technologies, was the chief guest. Mr Murthy encouraged graduates to participate in the exciting opportunities that lay ahead in building a strong and egalitarian India. **Dr R A Mashelkar**, FRS and

chairman of IITGN Board of Governors, presided over the event. In his convocation address Dr Mashelkar and **Prof Sudhir K Jain**, director IIT Gandhinagar, also gave inspiring addresses to the students. The President's Gold Medal, Outstanding Researcher's Medal, and other performance awards were given by Dr Mashelkar while the Bachelor of Technology degrees were handed over by Prof Jain. **Swetava Ganguli** became the first recipient of the President's Gold Medal of IIT Gandhinagar. Awards handed out in other categories are as follows: the Institute Gold Medal (**Yogesh Goyal**, **Prathamesh Juvatkar**, and **Swetava Ganguli**), the Institute Silver Medal (**Pratyul Kapoor**, **Prerit Terway**, and **Ishan Tembhekar**), the Director's Gold Medal (**Sarthak Jain**), the Director's Silver Medal (**Akshay Bishnoi**, **Mani Shankar Shahi**, and **Swati Verma**), the Outstanding Innovation Award (**Keshav Giriapnavar**), the Outstanding Social Service Award (**Kanchan Patel**), the Award for Integrity and Exemplary Human Qualities (**Tanmay Balwa**), the Award for Outstanding Research (**Yogesh Goyal**), the Award for

“ IIT Gandhinagar has the emerging spirit of a young university that is destined to be great. It possesses the pioneering spirit due to its dynamic leadership and cadre of young faculty and spirited students. ”

*Prof Nitish Thakor
Distinguished Honorary Professor*



Outstanding Performance in Sports (**Bhargav Kumar Thadem**), the Outstanding Leadership Award (**Ajinkya Kulkarni**), the Award for the Best Performance in Core Courses in Engineering Graphics, Manufacturing and Workshop Practice (**Saurabh Nagrecha**), the Award for the Best Performance in Core Courses in Mathematics (**Anusha Gunturu**), the Award for the Best Performance in Core Courses of Physics, Chemistry, Humanities and Social Sciences (**Swetava Ganguli**).

Foundation Programme 2012
The second five-week Foundation

Programme was conducted during July 19-Aug 23, 2012 for in-coming undergraduate students. The programme is designed to inculcate qualities of physical fitness, values and ethics, creativity, social awareness, and team work. The inaugural address of the programme was delivered by **Mr Arvind Singhal**, Chairman, Technopak Advisors Pvt Ltd. The students participated in a variety of creative activities such as kite making, calligraphy, Warli painting, Phad painting, theatre workshop, mask making and pottery. A number of lectures were delivered by eminent speakers on important topics

such as the Right to Information (**Dr Sandep Pandey**, social activist), Teach for India (**Mr Gunvant Jain**, Teach for India-NGO), Social media (**Mr Vijayendra Haryal**, writer), Ethics (**Prof R P Chhabra**, IIT Kanpur), Grassroot comics (**Prof Suchitra Mathur**, IIT Kanpur), Inter-personal communication (**Ms Rashmi Dutt**, founder, Dialog Services), Technology in Ancient India (**Mr Michel Danino**, archeologist and scholar), The Kerala School of Mathematics (**Dr M D Srinivas**, Centre of Policy Studies), Higgs Boson (**Prof Raghavan Rangarajan**, PRL Ahmedabad), and Growing



Dr Raj



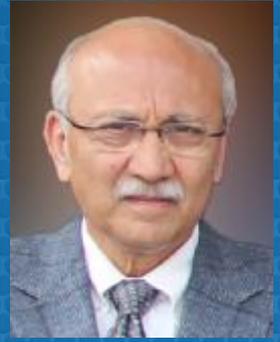
Prof Sukhatme



Prof Prasad



Prof Phatak



Mr Nanavati

Five New Members Join IIT Gandhinagar Board

Dr Baldev Raj has been appointed as the new chairman of the Board of Governors of IIT Gandhinagar. Dr Raj is currently the president of the Indian National Academy of Engineering, the International Institute of Welding and is the Chairman, Research Advisory Board of PSG Institute of Advanced Studies, Coimbatore. He is recipient of numerous awards and honours, including the Padma Shri (2007), the Indian Nuclear Society Lifetime Achievement Award (2004), and the 1st Dr Homi J Bhabha Centenary Year Award (2009). The other members who joined the Board are **Prof S P Sukhatme**, former Director, IIT Bombay and former Chairman, Atomic Energy Regulatory Board, **Prof Surendra Prasad**, former Director of IIT Delhi, **Prof Deepak B Phatak**, Subrao

M Nilekani Chair Professor, IIT Bombay and **Mr Kamal Nanavati**, President, Strategic Development M/s Reliance Industries Limited.

IIT Gandhinagar expresses its gratitude to **Dr R A Mashelkar**, FRS and CSIR Bhatnagar Fellow, who stepped down from the post of the Chairman of the BoG. The institute also gratefully acknowledges the contributions of the other outgoing board members namely **Mr Suresh Neotia**, Chairman Emeritus, Ambuja Cements, **Mr Malvinder Mohan Singh**, Group Chairman, Religare & Fortis Healthcare Ltd, **Mr Deepak Puri**, Chairman and Managing Director, Moser Baer India Ltd, **Mr Ashok Thakur**, Secretary, Ministry of Human Resource Development, Government of India.

Inequalities in India (**Mr Jaideep Hardiker**, journalist). Students were also introduced to historical places of interest through a field trip to Lothal, a Heritage Walk in the old city of Ahmedabad, and visits to Shreyas Museum and Gujarat Vidyapeeth. The programme ended with a popular lecture by the chief guest **Prof Mahesh Tandon**, managing director, Tandon Consultants Pvt Ltd New Delhi. The unique five-week programme was coordinated by **Prof Amit Arora** and **Prof Prachi Thareja**.

Young Researchers Conclave (YRC) Thirty five young and talented researchers of Indian origin from around the world participated in the second Young Researchers Conclave (YRC) held at IIT Gandhinagar on December 27-29, 2012. The one-of-a-kind conclave included two days of discussions on different aspects of academic life in India and at IITGN in particular. In addition to information sessions on research funding

and resources for experimental research, there were panel discussions on a range of topics such as life at a new IIT, women in research, research funding opportunities, collaborative opportunities, the joys and challenges of returning to India. The conclave was organized by



Young Researchers Conclave (YRC)

Sourindra Choudhuri, Vikas Trivedi (graduate students of Princeton University and Caltech respectively), **Prof Srinivas Reddy** and **Prof Harish P M**. The event was partly sponsored by the Government of Gujarat.

IITGN Incubation Centre (IIC)

Approval to set up the IITGN Incubation Centre (IIC) was given by the Board of Governors (BoG) in its meeting held on June 23, 2012. IITGN has received a sanction of Rs 1.55 crores from the Department of Information Technology, Government of India for a Technology Incubation and Development of Entrepreneurs Centre. It is aimed to provide a platform for IITGN graduates to experiment in developing technologies for commercial use and to promote entrepreneurial skills. This step is in line with IITGN's belief that many of its graduates will be job-creators rather than job-seekers. Four students of the pioneer batch, **Mr Sarthak Jain, Mr Prathamesh Juvatkar, Mr Prashant Borde, and Mr G Nithin Kumar** have set up a technology innovations startup company called **GridAnts**. This is the first company to be incubated at IIT Gandhinagar. The company

focuses on applications of distributed computing and aims to provide technological solutions for data collection and data processing at different geographical locations. The flagship product of GridAnts is the LBS 2.0, which is a patent-pending technology capable of giving location information accurate to within 10 feet. This is a dramatic improvement over the accuracy currently offered by other satellite-based location services. This technology could potentially be deployed in various places including malls, museums, airports, hotels, hospitals, institutes and various other public places. On the request of the Government of Gujarat, GridAnts successfully demonstrated the full potential of the technology (at Vibrant Gujarat 2013), where over 5,000 delegates used this facility to find what they were looking for and help them maintain their tight schedules as well as find the information they are looking for in real time. The company is also conducting beta tests with shopping malls and aims to have

ten locations mapped by the end of the year and 200 public locations by 2015. Among other offerings of the company is an intelligent automated surveillance system that is capable of generating alerts and can be used to preempt crime and alert authorities early. They have also developed a system to help monitor brand performance across the web and social media helping brands track ROI on their web-marketing expenses.



Roddam Narasimha Seminar Series

Roddam Narasimha Seminar Series

The **Roddam Narasimha Seminar Series** has been set up at IIT Gandhinagar to honour Prof Roddam Narasimha, a distinguished scientist and engineer. Prof Narasimha is a former director of National Aeronautical Laboratory (1984-1993) and the National Institute for Advance Studies (1997-2004). He has served on the National

Security Advisory Board and the Scientific Advisory Committee to the Prime Minister's Cabinet. Prof Narasimha's research is in the area of aerospace fluid dynamics and in related problems in the atmosphere. He has been honoured with the Padma Bhushan for his stellar contributions in science and technology. The Roddam Narasimha Seminar Series at IITGN has been made possible by grants from the Sastry Endowment that was set up by **Prof A V Anilkumar** in memory of his parents.

Peer-Assisted Learning (PAL)

An academic support scheme called **Peer-Assisted Learning (PAL)** for first year students was started in October 2012. This programme is aimed specifically at those first year students who face difficulties in adapting to English as the medium of instruction in their coursework. Two first year students are mentored by a senior student (second or a third year) who shares his knowledge and experience with them and helps them adapt to the new learning environment. The programme encourages discussions regarding academic concerns in an informal

peer environment. Twelve first year students were helped by a group of six second and third year students. The group of mentoring students comprised **Harsh Gupta, Manasa Reddy, Mohit Sharma, Navarkar Abhishek Chandrakant, Ankita Sharma and Shivanshu Arora**. The new students and the mentors would meet for four hours every week, usually in the evenings. The programme is coordinated by **Prof Kabeer Jasuja** in association with the IITGN Counseling Cell.

IITGN Offers Summer Internships to Undergraduate Students

The second edition of the Summer Research Internship Programme (SRIP) at IITGN was organized during May-July 2012. A total of 30 students from 20 different institutions participated in the program. Nearly 60 IITGN undergraduates also did their summer research internships at the institute. A special symposium was arranged at the conclusion for the participants to share their research experience during their internships.

Summer Research Opportunities for Faculty of Other Engineering Institutions

IITGN firmly believes in proactively engaging with the wider academic fraternity of the country. To this end, the institute invited faculty members from prominent institutions to participate in ongoing research projects at IITGN and to undergo mentorship by IITGN faculty. Three visiting faculty from Shri Mata Vaishno Devi University Katra, VNIT Nagpur and DDU Nadiad spent the summer on campus as part of this arrangement and worked with IITGN faculty.

Pan-IIT Meet

The Pan-IIT 2012 was held in Kolkata during Dec 7-9, 2012. **Prof Bhaskar Datta** led a team of three students and one staff member to represent the institute. Visitors at the institute's booth were able to get a glimpse of IITGN's distinctive approach to undergraduate education. The team briefed the visitors on several aspects ranging from the achievements of its pioneer batch to the design of IITGN's campus on the banks of the Sabarmati.



Staff Training and Educational Programme (STEP)

Staff Training and Educational Programme (STEP)

The first Staff Training and Educational Programme (STEP) at IITGN was organized on June 2, 2012. The workshop on **Team Building** conducted by **Mr Jacob Matthews** was attended by 23 staff members. The second STEP Programme on **Government Rules and Regulations** was organized on Aug 4, 2012. The programme was conducted by **Mr D S Gupta**, senior assistant registrar, IITGN Cell Mumbai, and was attended by 36 staff members. Another training programme on Purchase Procedures and Conduct Rules and Leave Rules was conducted on Oct 6, 2012 by **Mr Pijush Majumdar**, assistant registrar (Materials Management) and **Mr Ram Babu Bhagat**, assistant registrar (Administration), IITGN respectively. A session on Email

and Telephone Etiquette was conducted by **Ms Shruti Shah** on Dec 15, 2012. A training programme on **Advanced**

Microsoft Excel and Access was conducted on Feb 2-3, 2013 and Feb 23, 2013 respectively.

IITGN Selected as 2013 CUDA Teaching Center

IIT Gandhinagar has been selected as CUDA Teaching Center for the year 2013. CUDA Teaching Centres have integrated GPU computing techniques into their mainstream computer programming curriculum. Students and other members of the institute will have access to CUDA-enabled systems for hands-on experience of CUDA C/C++ development, debugging and experimentation. Currently CUDA Research and Teaching Centres are available in 42 countries worldwide.

Librarians of New IITs Meet

IIT Gandhinagar hosted the first meeting of the new IIT Librarians during Oct 29-31, 2012 with the aim of strengthening resource sharing. It was attended by representatives from different IITs including IIT (BHU) Varanasi,



Librarians of New IITs Meet

IIT Bhubaneswar, IIT Delhi, IIT Hyderabad, IIT Indore, IIT Mandi, IIT Rajasthan, and IIT Ropar. Senior officials from INDEST-AICTE Consortium, New Delhi and INFLIBNET Centre, Ahmedabad also attended this meeting. **Prof Sudhir K Jain**, director IIT Gandhinagar, gave an inaugural address and **Prof R Sharan**, chairman, Library Committee at IIT Gandhinagar presented the opening remarks. The meeting was organized by **Dr T S Kumbar** and **Ms Panna Chaudhary**.



PLANET HOUSE

INDPT. & M.
FIELD

RED ROCK

Scholarships for Students

Merit-cum-Means (MCM) scholarships

Merit-cum-Means (MCM) scholarships for the year 2012-13 were awarded to 86 students of general and OBC categories. These are awarded to meritorious students (a high JEE rank for first year students and CPI greater than 6.5 for senior students), whose parents have limited income (up to Rs 4.5 lakhs per year). An MCM scholarship carries a tuition fee waiver (current value Rs 50,000 per year) and Rs 1,000 per month for ten months. In addition, tuition fee waiver (Freeship) was awarded to 25 students who did not qualify for MCM on the basis of merit but needed financial assistance. Out of 25 freeships, 7 were awarded only for a semester. All students of SC/ST category avail the tuition fee waiver. In addition, 50 SC/ST category students whose parental income is within the limit prescribed for MCM scholarships were granted the facility for free food in the student mess and Rs 250 per month for ten months.

Scholarship for Excellence

IITGN has instituted several merit scholarships for outstanding performance in academics, sports, arts and culture, and social work and leadership. The scholarship carries a stipend of Rs 2,000 per month for ten months. The recipients of these scholarships in various categories for the academic year 2012-13 are given below.

Scholarship for Excellence in Academics

Shruti Jain (CPI 9.50), **Vipul Goyal** (CPI 9.47) and **Mohak Patel** (CPI 8.76) from third year; **P Shushma Shree** (CPI 8.62), **Aishwarya Agrawal** (CPI 9.42) and, **Dhwanil Shukla** (CPI 9.61) from the second year; **Raj Shah** (CPI 9.46), **Preet Shah** (CPI 9.89) and, **Prathamesh Bhat** (CPI 9.57) from the first year.

Scholarship for Excellence in Sports

The Scholarship for Excellence in Sports is awarded to up to six students for outstanding performance in sports. The sporting achievements are expected to be at the level of the inter-IIT sports meet or similar national events. **Shruti Jain, Vishvendra Joshi, Suresh Choudhary, Vrushiket Patil** and, **Parth Sane** were awarded scholarships under this category for the year 2012-13.

Scholarship for Excellence in Arts and Culture

The Scholarship for Excellence in Arts and Culture is awarded to upto two students for outstanding performance in cultural and other art festivals such as the inter-IIT cultural meet or similar national events. **Shrankhala Narya** was awarded the scholarship for Excellence in Arts and Culture for the year 2012-13.

VGEC-IITGN Club

More than 200 first year students of VGEC have signed up for the newly created VGEC-IITGN Club. Through this initiative IITGN will offer educational programmes to

these first year VGEC students.

Prof Sharmita Lahiri led the first of these sessions on March 17, 2013 with a workshop on **Group Discussions**. The series is coordinated by **Prof Achal Mehra**.

Distinguished Honorary Professors



Prof J B Joshi

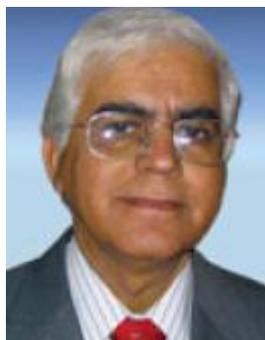
Prof J B Joshi

Prof J B Joshi is an eminent professor of chemical engineering and J C Bose National Fellow of the Institute of Chemical Technology (ICT), Mumbai as well as the DAE-Homi Bhabha Distinguished Chair Professor of the Homi Bhabha National Institute (HBNI), Mumbai. His research interests are mainly in the field of computational fluid dynamics (CFD), transport phenomenon and non-linear dynamics in multiphase systems, energy, biological wastewater treatment, petroleum residue upgradation, enzyme engineering, gas inducing impellers/surface aerators, NO_x abatement. He has supervised over 65 doctoral students and contributed in 350 peer-reviewed international journals and 26 national journals along with several conferences and books. He has about 40 years of experience in teaching and research. He has designed novel reactors, processes and plants which are in successful commercial operation in India and abroad. He is an active consultant to large sections of the chemical process industry. He has won several national and international awards and honors such as Fellow of Maharashtra

Academy of Sciences (1987), Fellow of Indian Academy of Sciences (1991), Shantiswarup Bhatnagar Prize for Engineering Sciences (1991), Fellow of the Indian National Science Academy, New Delhi (1995), Best Teacher Award from the Maharashtra Government for the year 2004. In 2007 the American Chemical Society (ACS) selected him among the top 100 research scientists over a period of 40 years of existence of industrial and engineering chemistry research on the basis of high impact publications. He is a member of several important national and international professional bodies.

Prof Surendra Prasad

Prof Surendra Prasad received his education at IIT Kharagpur and IIT Delhi. He has served IIT Delhi for more than four decades, having held a number of academic and administrative responsibilities including the post of the director. He is an eminent academician and researcher, and has received numerous honours for teaching and research including the Vikram Sarabhai Research Award in Electronics and Telecommunications (1987), the Shanti Swarup Bhatnagar Prize for Engineering Sciences



Prof Surendra Prasad

“ IITGN strikes me as an institute that is not afraid of innovative approaches in all facets of higher technical education such as curriculum design, research philosophies and teaching methods, with a view to promote all-round creativity. I expect it to be one of the leading technology institutes globally in the near future. ”

*Prof Surendra Prasad
Distinguished Honorary Professor*

(1988), the Om Prakash Bhasin Prize for research in Electronics and Communications (1994), the VASVIK Award for Information Technology (2006), the Lifetime Achievement Award of the Systems Society of India (2011), the distinguished alumnus award of IIT Kharagpur. He was also honoured with an honorary doctorate by the Loughborough University, UK in 2007. He is a Fellow of the Indian National Academy of Engineering, the Indian National Science Academy, the Indian Academy of Sciences and the National Academy of Science and has been a member of the governing body of CSIR and CSIR Society, Govt of India and numerous boards of IITs, NITs and other engineering institutes.

Prof S P Sukhatme

Prof Suhas P Sukhatme, professor emeritus, IIT Bombay, received his ScD (Doctor of Science) from MIT in 1964 and is widely known for his outstanding contributions to teaching and research. He is the author of two widely known text books on heat transfer and solar energy. He is the recipient of many honours and awards including the Prince of Wales Gold Medal from BHU in 1958, the Shanti Swarup

Bhatnagar Prize in 1983 and the Om Prakash Bhasin Foundation Award for Engineering in 2001. He was the first recipient of the Lifetime Achievement Award of IIT Bombay in 2001. He was conferred an honorary doctor of science degree by the Banaras Hindu University in 2001. He was awarded the Padma Shri by the Government of India in 2001.

Prof Nitish Thakor

Prof Nitish V Thakor is a professor of biomedical engineering, electrical and computer engineering, and neurology at the Johns Hopkins University, and directs the Laboratory for Neuroengineering. He is also the director of the Singapore Institute for Neurotechnology (SINAPSE) at the National University of Singapore. He earned his undergraduate degree from IIT Bombay in 1974, and PhD from the University of Wisconsin, Madison in 1981. Prof Thakor's technical expertise is in the areas of neural diagnostic instrumentation, neural microsystem, neural signal processing, optical imaging of the nervous system, neural control of prosthesis and brain machine interface. He is a co-author of more than 240 refereed journal papers and is currently the editor-



Prof S P Sukhatme



Prof Nitish Thakor



in-chief of Medical and Biological Engineering and Computing. He was the editor-in-chief of IEEE Transactions on Neural Systems and Rehabilitation Engineering from 2005-2011. Prof Thakor is a recipient of the Research Career Development Award from the National Institutes of Health and the Presidential Young Investigator Award from the National Science Foundation. He is a Fellow of the American Institute of Medical and Biological Engineering, IEEE, the Founding Fellow of the Biomedical Engineering Society, and Fellow of International Federation of Medical and Biological Engineering. He is also a recipient of the Centennial Medal from the School of Engineering, University of Wisconsin (2008), Honorary

Membership from Alpha Eta Mu Beta Biomedical Engineering student Honor Society. He received the award of Technical Excellence in Neuroengineering from IEEE Engineering in Medicine and Biology Society, and the Distinguished Alumnus Award in 2012 from IIT Bombay and the Centennial Medal from the University of Wisconsin, Madison School of Engineering in 2012.

Guest Professors

Guest Professors who commit to spending at least ten days in a year at IITGN are regularly invited in order to promote academic collaborations and overall excellence. The following academicians are associated with the institute as Guest Professors:

Dr Nikhil Balram

Dr Nikhil Balram is the president and CEO of Ricoh Innovations, Inc, a Silicon Valley company that develops innovative technologies and new business opportunities for Ricoh Company Ltd. With over 20 years of industry experience, Dr Balram is widely regarded throughout industry and academia as an expert and innovator in video and display technologies across multiple platforms. He was honoured with the Gold Stevie Award for Executive of the Year in the electronics category in the 9th Annual International Business Awards, the 2012 Fellow Award by the Society for Information Display (SID) and the 2011 Alumni Achievement Award by Carnegie Mellon University. Dr Balram is an adjunct professor of electrical engineering at Carnegie Mellon University; a former visiting professor of Vision Science at the University of California, Berkeley, and serves on the Industry Advisory Board (IAB) at the School of Engineering at Santa Clara University. He has over 50 US patents granted or pending, and more than 30 technical publications. He received his BS, MS and PhD in electrical engineering from Carnegie Mellon University.

Mr Michel Danino

Mr Michel Danino has been an independent student of the

Indian civilization since he came to India in 1977. He has authored papers and books in French and English. His recent titles include *The Lost River: On the Trail of the Sarasvati* (Penguin India, 2010) and *Indian Culture and India's Future* (DK Printworld, 2011). He has lectured extensively on the origins of the Indian civilization from archaeological, ancient historical and cultural perspectives, at various institutes of higher education across the country. He was a visiting faculty member of IIT Kanpur and is currently a visiting faculty at IIM Ranchi. His other interests include environmental conservation and the creation of innovative educational material on Indian heritage.

Prof K S Gandhi*

Prof K S Gandhi received his bachelor's degree in chemical engineering from Andhra University in 1962, master's degree from the Ohio State University in 1965 and his doctoral degree from the University of California at Berkeley in 1971. He taught at IIT Kanpur between 1971 and 1986, and then at IISc Bangalore during the period 1986 through 2005. His industrial experience includes working at J K Paper Mills, Rayagada and at the Pilkington Brothers Research Centre in the UK. He is a member of the Indian



Dr Nikhil Balram



Mr Michel Danino



Prof K S Gandhi

*For part of the year



Dr Pravinray D Gandhi

Institute of Chemical Engineers and Fellow of the Indian Academy of Sciences and the Indian National Academy of Engineering.

Dr Pravinray D Gandhi

Dr Pravinray D Gandhi is currently director of corporate research at UL. He received his BTech from IIT Delhi and PhD from the University of Notre Dame. His focus is on quantifying fire risks and hazards and has been involved in developing new test methods and standards. He has been working with the fire safety community to develop new fire safety codes.

his contributions to institution building. He has been President of the Indian Physics Association (2005-07) and is currently the chief editor of Physics News. He is a member of the Academic Council of Homi Bhabha National Institute (DAE), Centre for Basic Sciences of DAE at the University of Mumbai and IIS University, Jaipur. Prof Ghosh was the Provost (Vice-Chancellor) of Navrachana University at Vadodara in 2012 and established the engineering program there. He is a member of the Board of Governors of SVNIT, Surat.



Prof Dipan K Ghosh

Prof Dipan K Ghosh

Prof Dipan K Ghosh is currently professor of physics at IIT Bombay. He is condensed matter theorist who worked primarily in low-dimensional magnetic systems. He is best known for his work on exact solution of a one dimensional many-body problem which is widely known in the literature as the Majumdar-Ghosh model. He has authored a textbook on mechanics and thermodynamics and several web books. Prof Ghosh has served IIT Bombay in several capacities including its Dean and Deputy Director. He was awarded IITB's Best Teacher award in 2000. In 2011 he was awarded the Lifetime Achievement Award of IITB for

Prof Vijay Gupta*

Prof Vijay Gupta is a distinguished professor at Sharda University, Greater Noida and is well known for innovations in teaching and evaluation methods and for his books and teaching aids. During his long tenure at IIT Kanpur, he taught a wide range of courses and held many important positions, including the Dean of Academic Affairs. He was a gold medalist in his BTech programme from IIT Delhi. He earned his PhD degree from the University of Minnesota in 1972.



Prof Vijay Gupta

Prof Suchitra Mathur

Prof Suchitra Mathur, associate professor of English at IIT Kanpur, is a teacher and scholar in the fields of Indian English literature, feminist and



Prof Suchitra Mathur

postcolonial theory, and popular culture studies. In addition to publishing in various national and international journals in these areas, she has also been active in organizing workshops related to these fields as well as communication skills at various institutes across the country. Her recent work has focused on science studies as an interdisciplinary field that puts her interests in gender and communication in meaningful conversation with the S&T focus of her institutional location. In 2011, she was awarded the Gopal Das Bhandari Excellence in teaching award by IIT Kanpur.

Prof S L Narayanamurthy

Prof S L Narayanamurthy obtained his PhD degree in chemical engineering from the University of Bradford in 1971, as a Commonwealth Scholar. He served IIT Bombay for nearly four decades as a faculty member, head of department and dean. His research interests were in the areas of separation processes and food process engineering. Prof Narayanamurthy received the Lifetime Achievement Award of IIT Bombay in 2004 in recognition of his diverse and seminal institution building contributions as a teacher, a team builder, and facilitator of R&D, resource mobilization and alumni

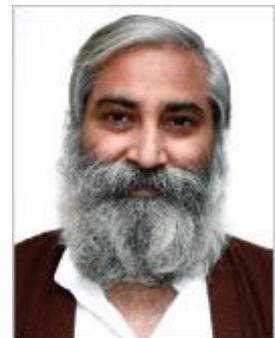
networking. He has also received awards for excellence in process/technology development jointly with his colleagues. Prof Narayanamurthy served IIT Gandhinagar for nearly four years as a visiting professor and guided the academic programmes of the fledgling institute for two years. His current professional interests are in the areas of engineering education, food process engineering and mentoring.

Dr Sandeep Pandey

Dr Sandeep Pandey earned his PhD degree in mechanical engineering from University of California, Berkeley in 1992 and is currently a social activist based in Lucknow. His areas of work include the right to education, work, food, information, human rights, empowerment of marginalised communities, grassroots democracy, anti-corruption movements, land reforms, communal harmony, nuclear disarmament and peace, peace and friendship between India and Pakistan, corporate accountability and people's politics. He is currently part of the Socialist Party. Dr Pandey's work is mainly in the rural areas. He concentrates on issues affecting the daily lives of people. His organization helps people access benefits through various governmental social welfare



Prof S L Narayanamurthy



Dr Sandeep Pandey

*For part of the year



Prof A Ramanathan

schemes by fighting corruption. He is also part of movements where people are struggling to establish their rights over natural resources that are under threat because the government allows them to be usurped by corporations. He is deeply involved in building a genuine grassroots political alternative to the mainstream politics dominated by corruption.

Prof A Ramanathan

Prof A Ramanathan holds a PhD degree in economics from Mumbai University. He is a senior professor and a former head of the Department of Humanities and Social Sciences of IIT Bombay. He is a well known quantitative economist with rich expertise particularly in the teaching of research methods in social sciences. Further, in tune with the academic and research temper of IIT Bombay, Prof Ramanathan has gained good knowledge of many inter- and multi-disciplinary topics of current relevance in the country. He specializes in managerial economics, applied econometrics and social cost-benefit analysis. Prof Ramanathan has published a number of articles in Indian and international journals. He has guided 24 PhD students, including very senior officials from industries, government and banks. He has also guided 20 MPhil dissertations.



Prof Mythily Ramaswamy

Prof Mythily Ramaswamy

Prof Mythily Ramaswamy is a professor and currently the dean at the Tata Institute of Fundamental Research Centre for Applicable Mathematics, Bangalore. She is one of the leading figures in the country in the field of partial differential equations and specifically in analysis and applications to control problems. She received her BSc and MSc degrees from the University of Bombay and PhD from University of Paris 6, France.

Prof Dheeraj Sanghi

Prof Dheeraj Sanghi, dean of academic affairs is a professor of computer science and engineering at IIT Kanpur. His research interests are in the area of computer networks with special focus on protocols at different layers, IPv6, mobility and security. He has served as the director of LNM Institute of Information Technology, Jaipur for two years. He is passionate about technical education in India and writes regularly about it in magazines and blogs. He received his BTech from IIT Kanpur, and MS and PhD from the University of Maryland, College Park.



Prof Dheeraj Sanghi

Distinguished Visitors

IITGN hosts lectures and visits by eminent scholars and distinguished individuals from diverse fields. Among the eminent persons who visited the institute during 2012-13 are:



Excellence Award for Staff

Mr Azim Premji, chairman of Wipro Technologies, visited IITGN on December 4, 2012. Mr Premji addressed the students on entrepreneurship and success and handed out the 2012

Excellence Award for Staff to Mr Pijush Majumdar, assistant registrar; **Mr Sanjeev Kumar Pandey**, junior accounts officer; **Mr Ankur K Navdiwala**, junior lab assistant; and **Mr Bhikabhai Patel**, junior lab attendant.

Other Visitors

The other eminent persons who visited the Institute during this period are as follows:

Dr Kumar Akhilesh and **Dr Shanti Pappu**, Sharma Centre for Heritage Education, Chennai; **Dr Kuldeep K Bhan** and **Prof K Krishnan**, MS University, Baroda; **Prof Onkar Dikshi**, **Dr Javed Malik**, **Prof Ajit Chaturvedi**, **Prof Y N Mohapatra**, **Harish Karnick**, **Prof Amitabha Mukherjee**, **Prof Debajyoti Paul**, **Prof Sanjay Dhande**, former director of IIT Kanpur, **Prof G K Mehta**, distinguished honorary professor and **Mr Rajiv Garg**, junior superintendent engineer, IIT Kanpur; **Dr Sunil Gupta**, Allahabad Museum; **Prof Pramod Joglekar** and **Dr R K Mohanty**,

Deccan College, Pune; **Dr Chithra Madhavan**, epigraphist and historian, Chennai; **Dr T S Ravishankar**, Archaeological Survey of India, Mysore; **Dr Y S Rawat**, Gujarat State Archaeology Dept, Gandhinagar; **Dr K S Saraswat**, former emeritus scientist, Birbal Sahni Institute of Palaeobotany Lucknow; **Dr Rakesh Tewari**, UP State Dept of Archaeology, Lucknow; **Prof K K Thaplyal**, historian and epigraphist, Lucknow University; **Dr Mayank Vahia**, **Dr S Raja** and **Ms Nisha Yadav**, Tata Institute of Fundamental Research, Mumbai; **Dr Parth Chauhan**, Stone Age

Institute, Gosport, USA; **Prof Samaresh Chatterji** and **Prof V P Sinha**, DAIICT, Gandhinagar; **Prof Sadanand Agashe**, **Prof A K Suresh**, **Prof Abhay Karandikar**, **Dr K Ramasubramanian**, **Dr Malay Mukul** and **Prof S G Dani**, IIT Bombay; **Prof Surendra Prasad**, **Prof Bijoy Boruah**, and **Mr Bibhuti Sahu**, assistant librarian, IIT Delhi; **Prof C N Krishnan** and **Prof R Velraj**, Anna University; **Prof Navajyoti Singh**, IIIT Hyderabad; **Prof Ramesh C Pradhan**, Central University Hyderabad; **Prof A P Singh**, LNMIIT Jaipur; **Prof Sunil Sahashrabuddhe**, Lokvidya Ashram, Varanasi; **Shri V Thiruppugazh**, IAS, Commissioner of Information and Additional Chief Executive Officer, Gujarat State Disaster Management Authority (GSDMA); **Mr Yatin Pandya**, architect, Ahmedabad; **Prof Prosenjit Ghosh**, IISc Bangalore; **Prof Sudhindra N Panda**, IIT Kharagpur; **Mr Dinesh Chinappa**, director, BCIL, Bangalore; **Mr Navin Upadhyay**, assistant librarian, IIT (BHU) Varanasi; **Dr Sushanta Kumar Pathy**, sr library information assistant, IIT

Bhubaneswar; **Mr Mallikarjuna C**, sr library information assistant, IIT Hyderabad; **Ms Anjali Bandiwadekar**, deputy librarian, IIT Indore; **Ms Sonali Malhotra**, project assistant, and **Dr Sandeep K Pathak**, deputy librarian, IIT Mandi, **Dr Kshema Prakash**, deputy librarian, IIT Rajasthan; **Dr Dinesh K S**, deputy librarian, IIT Ropar; **Shri Ashok Kumar Rai**, Scientist-D (CS) INFLIBNET Center; **Dr H B Singh**, Cognitive Science Research Initiative, DST, New Delhi; **Dr V K Bhasin** and **Dr Vikrant Jain**, University of Delhi; **Prof Narayanan Srinivasan**, University of Allahabad; **Dr Sushil Chandra**, DRDO, Delhi; **Mr Rakesh Srivastava**, deputy director general, National Safety Council of India; **Mr D C Chaudhari**, director, Gujarat Government Industrial Safety and Health; **Shri Satinath Sarangi**, founder, Bhopal Group for Information & Action; **Mr August W Schaefer**, senior vice president and public safety officer, Underwriters Laboratories (UL), USA; **Dr Eur-Ing Gordon Biezeveld**, European Fire Protection Community, The Netherlands; **Dr Venkatesh**

Kodur, director, Center for Structural Fire Engineering & Diagnostics, Michigan State University, USA; **Dr Ranjit Banerjee**, CEO, Gujarat State Disaster Management Authority; **Prof Kathy A Notrarianni**, head, Fire Protection Engineering, Worcester Polytechnic Institute (WPI), Massachusetts; **Mr Joachim Nell**, head of Tech Center India & director Affordable Cars Strategy Continental Automotive Components (India) Pvt Ltd ; **Dr K U Mistry**, chairman, Gujarat Pollution Control Board, **Dr Hugo Vits**, general manager Bitumen Technology, Shell Technology Center Bangalore, **Mr R V Venkitachalam**, MD, Underwriters Laboratories, **Shri Ravi Ramaswamy**, head Reliance Industries Limited, **Mr Jitendra C Patel**, founder, ASSE India Chapter; **Dr Sunil Trivedi**, chief research officer, Civil Hospital, Ahmedabad; **Shri Milind Kulkarni**, scientist F, Department of Science and Technology; **Mr Hirak Dutta**, Executive Director, Oil Industry Safety Directorate, (OISD); **Mr M V Deshmukh**, fire advisor and director, Maharashtra Fire Services; **Mr A K Sharma**, director, Delhi Fire Service; **Mr**

“ IIT Gandhinagar, is well poised on the path of growth and will soon become a contender for the top slots in the IIT system. ”

*Prof Dipan Ghosh
Guest Professor*



Debashis Kar, Director General (Building), Kolkata Municipal Corporation; **Prof Anant Patel**, University of Applied Sciences, Bielefeld, Germany; **Prof Lina Fruzzetti**, Brown University; **Prof Akos Ostor**, Wesleyan University; **Dr M D Srinivas**, Centre for Policy Studies, Chennai; **Dr R N Iyengar**, Jain University, Bangalore; **Prof M S Sriram**, Madras University; **Dr R**

Sridharan, Chennai Mathematical Institute; **Dr S Balachandra Rao**, Gandhi Centre for Science and Human Values, Bangalore; **Dr Amartya Kumar Dutta**, Indian Statistical Institute, Kolkata; **Dr Shailesh Shirali**, Sahyadri School, Pune and Rishi Valley School, Andhra Pradesh; **Dr Ashok Singhvi**, **Prof S Krishnaswami**, **Dr N Bhandari**,

and **Dr S K Gupta** (retd) PRL, Ahmedabad; **Prof R N Singh**, INSA senior scientist, emeritus scientist (CSIR), National Geophysical Research Institute, Hyderabad; **Prof R S Sharma**, INSA honorary Scientist; **Dr Mrinal Sen**, National Geophysical Research Institute, Hyderabad; **Dr M D Sastry**, Gemological Institute of India, Mumbai.

Conferences/ Symposia/ Workshops/Seminars

Conferences, symposia, workshops and seminars on focus themes are vital academic activities that help stimulate discussions on different areas of importance. Many of these activities invite participation from other organizations which helps to increase the institute's visibility to the outside world. The following activities were organized during 2012-13:



Conferences/ Symposia/ Workshops/Seminars



- A workshop on **Chemical Engineering and Academics** was organized during May 28-June 1, 2012. The workshop was attended by twenty faculty members and three post-graduate students from various colleges in India. The workshop was organized by **Prof K S Gandhi, Prof M H Divekar** and

Prof Nitin Padhiyar.

- A seminar on **Education and Quality of Life** by **Mr M S Raghavan Ayyangar**, managing director, Emmessar Biotech & Nutrition Ltd, Mumbai, June 11-12, 2012. The seminar was attended by 30 participants and organized by **Prof Raghu Echempati**.
- A workshop on **Elliptic and Parabolic Partial Differential Equations and Related Topics: Theory and Numerical Methods** was conducted during

Aug 16-19, 2012. It was attended by 25 participants. **Prof Jagmohan Tyagi** was the convener of the workshop and the co-conveners were **Prof Anulekha Dhara** and **Prof Kishore Kumar**.

- A two-day workshop on **Indian Archaeology, Epigraphy and Ancient History** was organized during Aug. 23-24, 2012. The event was addressed by 18 top archaeologists, epigraphists and scientists from across India. It was attended by about 50 scholars, faculty members and students and was coordinated by **Mr Michel Danino** and **Prof Jaison A Manjaly**.
- A workshop on **Conversations Across Disciplines -**

Mathematics and Engineering was organized on Sept 8, 2012. Around 35 faculty members attended the event. **Prof Jagmohan Tyagi, Prof Mythily Ramaswami and Prof Ramesh Gaonkar** organized the event.

- A one-day workshop on **Intellectual Property Rights (IPR)** was conducted by **Ms Rachna Singh Puri and Dr Arvind Viswanathan**, Xellect IP Solutions, Bangalore and **Mr Vivek Khadpekar**, consultant editor on Sep 15, 2012. It was attended by 34 MTech and PhD students. **Prof Arnapurna Rath and Prof Sriram Kanvah** organized the event.



- Nearly 300 researchers, educators, safety officials, engineers, safety advocates, policy makers and consultants participated in an **International Conference on Safety** at IIT Gandhinagar on Oct 12-13, 2012. The interdisciplinary conference attracted participants across

India as well as the United States, Europe, the Middle East and Southeast Asia. Keynote speakers included **Dr Anil Kakodar**, former chairman, Atomic Energy Commission of India, **Shri S B Mathur**, directorate general, Factory Advice Service & Labour Institute (DGFASLI) and **Dr M Sam Mannan**, director, Process Safety Center, Texas A&M University, USA. The core team of conference organizers comprised of **Prof Chinmay Ghoroi, Prof Achal Mehra, Akshay Jain, Sanjay Saroj, and Rajat Inderiya.**

- An **International Workshop on Process Safety Management** was organized during Oct 14-15, 2012. The workshop was conducted by **Dr M Sam Mannan**, Professor and director, Process Safety Center, Texas A&M University, USA, **Mr Jitendra C Patel**, Fellow of American Society of Safety Engineers, USA and **Dr Rajagopalan Srinivasan**, National University of Singapore. The workshop featured a panel discussion on

Process Safety Management & Challenges in Indian industries. The workshop was attended by around 100 participants globally and was coordinated by **Prof Chinmay Ghoroi and Prof Achal Mehra.**

- A two-day workshop on **Imagining India** during Oct 27-28, 2012 included talks by **Ms Mirai Chatterjee**, director, Social Security, SEWA on 'Gendered Spaces', **Dr Bimal Patel**, president and acting director, CEPT on 'An India that Lives in its Cities', **Prof Vijaya Sherry Chand**, IIMA on 'India and Education', **Prof Tridip Suhrud**, director, Sabarmati Ashram Trust on 'Seeing India Through Gandhi's Eyes', **Mr Aditya Handa**, founding promoter, Abellon group on 'India and Energy' and **Mr Aakash Srivastav**, director, Prabhavya on 'India and the Social Media'. The event was organized by **Prof Rita Kothari** and two students **Monica Yadav** and **Shrankhla Narya.**
- IIT Gandhinagar Library in collaboration with IIM Ahmedabad Library organized the **9th Annual Meet and Workshop of INDEST-AICTE Consortium** during Jan 17-19, 2013. Over 200 library professionals from different

parts of the country participated in the workshop.

- A two-day event on **Heritage of Indian Astronomy** was hosted during Feb 9-10, 2013 by IIT Gandhinagar in association with Alliance Française d'Ahmedabad as part of the Bonjour India 2013 Festival. Scientists from India and France offered different lectures at the event, which also featured astronomical observations by Odyssey, the Astronomy Club of IITGN.
- A workshop on **Fire Safety** was organized by the IIT Gandhinagar Safety Center (IITGN-SC) during March 2-3, 2013. The workshop faculty included **Dr Venkatesh Kodur**, Michigan State University, USA; **Dr Pravinray D Gandhi**, director, Corporate Research, Underwriters Laboratories, USA; and **Mr G B Menon**, fire advisor (retd), Government of India and founder president of National Association of Fire Officers (NAFO). Other speakers included **Mr D K Shami**, fire advisor, Govt of India; **Mr Hirak Dutta**, executive director, Oil Industry Safety Directorate, (OISD); **Mr M V Deshmukh**, fire

advisor and director, Maharashtra Fire Services; **Mr A K Sharma**, director, Delhi Fire Service; **Mr Debashis Kar**, director general (Building), Kolkata Municipal Corporation. Nearly 150 people from all over India attended the workshop that was organized by **Prof**

Chinmay Ghoroi.

- A two-day workshop on **Promoting History of Science in India** was held on March 16-17, 2013. Eminent scientist and Padma Vibhushan awardee **Prof Roddam Narasimha** delivered the keynote address titled Barbarous algebra, inferred axioms: eastern modes in the rise of western science. Over 50 delegates from various parts of India attended the workshop. The event was coordinated by **Prof Jaison A Manjaly** and **Prof Michel Danino**.
- A brain-storming seminar was organized on March 15, 2013 to

evolve a road map for the **Academic Programme in Earth Sciences** at IIT Gandhinagar. About a dozen eminent experts in various disciplines of earth sciences participated in the seminar. The deliberations focused on the kind of academic and the research programmes that the institute may initiate.



- A workshop on **MATLAB for Chemical Engineers** was conducted on March 16, 2013 for BTech and MTech students of chemical engineering by **Prof Babji Srinivasan**, **Prof Pratyush Dayal**, and **Prof Kabeer Jasuja**. Forty three participants attended the workshop.
- A workshop on **Collaborating to Co-create the Future** by **Ms Rashmi Datta**, founder and director, Dialog Services, was held on March 23, 2013 for faculty of the institute.

Short Courses

A variety of short courses are offered throughout the year in order to increase the choice and flexibility of course offerings, as well as to benefit from the expertise of visiting faculty and experts from varied backgrounds who may be on campus for shorter durations. The following short courses were delivered during 2012-13 by recognized experts in their respective fields.

Short Courses

- A short course on **Critical Thinking** was conducted by **Dr Ranadhir Mitra**, formerly of University of California and University of Pittsburgh, March 31-April 1, 2012.
- A short course on **Seismic Design of Reinforced Concrete Buildings** was held during Nov 26-30, 2012. The resource persons included **Prof Sudhir K Jain, Prof Durgesh C Rai, Prof Greg MacRae, Prof Dhiman Basu** and **Prof Amit Prashant**. The short course was attended by 102 professionals, students, and faculty from various parts of the country and was organized by **Ms Kiran Rangwani**.
- A short course on **Computational Methods in Engineering Using MATLAB** was organized during Dec 20-22, 2012. **Prof Nitin Padhiyar** and **Prof Shivakumar Jolad**, both IITGN faculty, delivered the course. The number of participants was more than a hundred and comprised postgraduate students and faculty members from engineering colleges, research scientists, and industrial practitioners from various engineering disciplines attended the event.
- A short course on **Building a Microscope** by **Vikas Trivedi** from Caltech was held on Dec 30, 2012.
- A short course on **Finite Element Methods, Constitutive Modeling and Applications** was held on Jan 28 - Feb 1, 2013. The resource persons included **Prof Chandrakant S Desai**, University of Arizona, **Prof Abhijit Mukherjee**, **Prof Dhiman Basu** and **Prof Amit Prashant**, IIT Gandhinagar. Forty-four professionals, students, and faculty from various parts of the country attended the course that was coordinated by **Dr Amit Prashant** and **Mr Nitin Shukla**.
- A short course on **Technology Strategy for Managers and Entrepreneurs** was delivered by **Mr Paresh Vora** on Feb 2, 3 and 9, 2013.
- A short course on **Geotechnical Aspects of Earthquake Engineering** was held on March 4-8, 2013. The resource persons were **Prof Sudhir K Jain**, **Prof Ajanta Sachan**, and **Prof Amit Prashant** from IIT Gandhinagar and **Prof Debasis Roy** from IIT Kharagpur. Forty-three participants attended the course.

Continuing Education Programmes

- A short course on **Finite Element Method, Constitutive Modeling and Applications** was conducted by **Prof C S Desai** and **Prof Amit Prashant** during April 2-5, 2012. **Prof C S Upadhyay** and **Prof Durgesh Rai** of IIT Kanpur were the other resource persons. The course was attended by 77 engineers and senior professionals from all over the country.
- A short course on **Low-Cost High-Tech Automation** was conducted during April 16-18, 2012 at IITGN. There were nine participants from various industries. **Prof N Ramakrishnan** and **Prof Joyce Meki** were the coordinators of this event. The same course was offered at **Tata Motors, Sanand**, Gujarat by **Prof N Ramakrishnan** during June 20-22, 2012.
- An in-house CEP course on **Gear Technology** at Mahindra Navistar, Pune was delivered by **Prof N Ramakrishnan** on April 4-6, 2012. About twenty engineers from the company participated.

Invited Lectures

The following lectures were delivered by experts who were invited to the institute to share their insights in their respective fields to kindle scholarly interest in a diverse range of topics.



Invited Lectures

- *Energy perspectives, hydrogen-electricity economy, heat pipes/nuclear reactor safety, energy and society*, by **Prof Manfred Groll**, University of Stuttgart, Germany, during March 30-April 6, 2012.
- *Renewable energy based power generation in the Indian context - challenges and opportunities* by **Prof S Sreenivasa Murthy**, formerly with IIT Delhi, April 2, 2012.
- *India's foreign policy and its impact on the economy* by **Mr S R Tayal**, IFS officer (retd), April 2, 2012.
- *The Indian ocean as an interactive sphere* by **Dr Sunil Gupta**, assistant keeper, Allahabad Museum, April 3, 2012.
- *Molecular motors: tiny machines of nature* by **Dr Roop Mallik**, Tata Institute of Fundamental Research, April 16, 2012.
- *Ahmedabad: shock city of twentieth century India* by **Dr Howard Spodek**, Department of Geography and Urban studies, Temple University, Philadelphia, USA, Aug 7, 2012.
- *Current psychological perspectives on human nature* by **Dr N Sriram**, senior scientist, University of Virginia, Aug 8, 2012.
- *CEN and NCPRE @ IIT Bombay* by **Prof Anil Kottantharayil**, IIT Bombay, Aug 9, 2012.
- *Decision support in process systems: from controlling molecular rystals to managing multi-national clusters* by **Prof Rajgopalan Srinivasan**, National University of Singapore, Aug 13, 2012.
- *Innovation and entrepreneurship* by **Prof Shiladitya Sengupta**, Harvard Medical School, Aug 16 -17, 2012.

- *VLSI interconnects* by **Prof Rajendra Patrikar**, VNIT-Nagpur, Aug 17, 2012.
- *The region and its margins: re-appropriations of the border from maha Gujarat to swarnim Gujarat* by **Dr Farhana Ibrahim**, IIT Delhi, Aug 21, 2012.
- *Synergies between engineering and entrepreneurship* by **Prof Ken Pickar**, faculty advisor of E-Cell, Caltech, Aug 31, 2012.
- *Nano-structured and thin film solar cells* by **Prof Bodh Raj Mehta**, IIT Delhi, Sept 1, 2012.
- *Transition in Indian health care market* by **Prof Barun Kanjilal**, Indian Institute of Health Management Research (IIHMR), Jaipur, Sept 6, 2012.
- *What holds constant: translational topologies* by **Dr Valerie Henitiuk**, director, British Council Centre for Literary Translation, University of East Anglia, Norwich, Sept 17, 2012.
- *Sensing the world around us (with a tiny glass thread)* by **Prof Balaji Srinivasan**, IIT Madras, Oct 8, 2012.
- *Driving research agenda for telecommunication in India* by **Prof Abhay Karandikar**, IIT Bombay, Oct 8, 2012.
- *Displacement-based vulnerability assessment of Christchurch buildings in Canterbury earthquakes* by **Dr S R Uma**, GNS Science, New Zealand, Oct 9, 2012.
- *Specialty optical fibers: fabrication, technology and applications* by **Dr Ranjan Sen**, chief scientist, Central Glass and Ceramic Research Institute (CGCRI), Kolkata, Oct 9, 2012.
- *Photonic sensors technologies and application in control, navigation and guidance of aerospace and defence System* by **Dr Jagannath Nayak**, DRDO, Hyderabad, Oct 10, 2012.
- *Optical communications using optical fiber* by **Dr Badri Gomatam**, CEO, Sterlite Technologies, Oct 12, 2012.
- *Aerospace materials* by **Prof K A Padmanabhan**, former director, IIT Kanpur, Oct 15, 2012.
- *Noise propagation in biological networks* by **Dr Ganesh Viswanathan**, IIT Bombay, Oct 18, 2012.
- *High efficiency solar cells and multijunction solar cells* by **Prof B M Arora**, IIT Bombay, Oct 19, 2012.
- *3D two photon microscope for functional imaging of neural activity* by **Dr Naga Srinivas**, University College London, Oct 23, 2012.
- *The evolution of a knowledge society* by **Prof Deepak Kumar**, Jawaharlal Nehru University, Oct 29, 2012.
- *From research to market users - the Indian scene and technical education scene in India - why more of the same is not enough* by **Prof C N Krishnan**, director, AU-KBC research centre, Anna University, Chennai, Nov 2, 2012.
- *Technological challenges arising from space disturbances* by **Prof G G Sivjee**, director, Space Physics Research Laboratory, USA, Nov 5, 2012.
- *Studies in development of sanitation biotechnology (SBT)* by **Prof H S Shankar**, IIT Bombay, Nov 6, 2012.
- *New initiatives in higher education* by **Dr Jayanti Ravi**, Commissioner of Higher Education, Gujarat, Nov 9, 2012.
- *Organic solar cells* by **Prof S S K Iyer**, IIT Kanpur, Nov 10, 2012.
- *Spatial, dynamical and spatiotemporal heterogeneities in granular media* by **Prof Anita**



- **Mehta**, Bose Institute, Nov 16, 2012.
- *Green Aircraft: Fact or Fiction?* by **Prof Roddam Narasimha**, IISc, Bangalore, Nov 19, 2012.
- *Renewable Energy Projects in Aerospace Engineering with Rocket as a Test Base* by **Prof A V Anilkumar**, Vanderbilt University, Nov 20, 2012.
- *Feasibility of using event-related potentials as a measure of concussion* by **Dr Srinivas Kota**, University of Nebraska Lincoln, USA, Jan 3, 2013.
- *Decoding human visual and emotional perception* by **Dr Ramanathan Subramanian**, Advanced Digital Sciences Center, University of Illinois Urbana-Champaign (Singapore campus), Jan 4, 2013.
- *Fire-resistant design of steel building structures: experimental and numerical investigations* by **Dr Amit H Varma**, Purdue University, USA, Jan 8, 2013.
- *An industrial perspective of green energy solutions* by **Dr Rajeev Jindal**, Moser Baer India Ltd, Jan 18, 2013.
- *Ageing gracefully across the life span: the India brain grid initiative* by **Prof Prasun Kumar Roy**, National Brain Research Center, Manesar, Jan 21, 2013.
- *Discovery of X-rays and its impact on the field of medicine* by **Prof Shirish K Jani**, Director of Medical Physics, Sharp Memorial Hospital, San Diego, CA, Jan 21, 2013.
- *Structural design philosophies - new approaches after the Christchurch earthquake* by **Dr Helen Goldsworthy**, University of Melbourne, Australia, Jan 24, 2013.
- *Right to Information (RTI) Act* by **Shri Shailesh Gandhi**, former Central Information Commissioner, Jan 25, 2013.
- *Understanding bionanoparticle behaviour through physical*



IITGN, an IIT which also sensitizes you to become a complete human being, aware about the complex social atmosphere of which you are a part.



Dr Sandeep Pandey
Guest Professor

- *characterization* by **Dr Suvajyoti Guha**, Food & Drug Administration, USA, Jan 30, 2013.
- *The world of surface science in relation to engineering and biomedical systems* by **Prof Dinesh O Shah**, Professor Emeritus, University of Florida, Gainesville, Jan 31, 2013.
- *Development of the seismic design provisions of the 2010 National Building Code of Canada* by **Dr Jag Mohan Humar**, Carleton University, Ottawa, Canada, Feb 4, 2013.
- *The muslim in contemporary western popular music* by **Dr Nabeel Zuberi**, Feb 12, 2013.
- *Simple methods for the improvement of power quality* by **Prof M Ramamoorthy**, former Head CPRI, Feb 15, 2013.
- *Who reads medieval Indo-Persian poetry today: the case of Amir Khusrau* by **Prof Sunil Sharma**, Boston University, Feb 18, 2013.
- *Tracking society: applying tracking technologies to the study of human behavior* by **Dr Michal Isaacson**, MIT Age Lab, Feb 20, 2013.
- *Modern-day cross-disciplinary astronomy* by **Dr Ashish Mahabal**, Senior Research Scientist, Caltech, Feb 21, 2013.
- *Low dynamic range solutions for high dynamic range scenes* by **Dr Shanmuganathan Raman**, IIT Jodhpur, March 4, 2013.
- *Innovation in Tata Group* by **Mr R Gopalakrishnan**, executive director, Tata Sons, March 5, 2013.
- *Can Indian management education create leaders who care? promises and pragmatics* by **Prof Nagesh Rao**, Director, Mudra Institute of Communications (MICA), Ahmedabad, March 12, 2013.
- *Saving lives by design* by **Prof Bhaskar Bhatt**, NID Ahmedabad, March 12, 2013.
- *Social cues in modeling local human behaviour and its utility in human motion understanding* by **Prof Shishir Shah**, University of Houston, March 19, 2013.
- *Electrical, optical and micro-structural properties of ITO (indium-tin-oxide) thin films deposited on glass and plastic substrates* by **Prof Anand Kulkarni**, Professor Emeritus, Michigan Technological University, March 22, 2013.
- *Seeking a market culture beyond greed and fear* by **Rajni Bakshi**, a Mumbai-based freelance journalist and author, March 25, 2013.

Panel Discussions

- A panel discussion on *Engineering education with a focus on humanities and social sciences*, Nov 3, 2012.
- A brainstorming session on *Passive cooling, rainwater harvesting and sewage treatment* was conducted on Nov 21, 2012. The programme was organized by **Prof Sudhanshu Sharma** and was attended by 20 faculty members.
- A panel discussion on *Cognitive Science Programme* at IIT Gandhinagar was conducted on Dec 1, 2012.

INFRASTRUCTURE AND FACILITIES

As a relatively new and fast growing institution, IITGN is constantly in the process of improving and expanding its infrastructure and other facilities related to research and teaching. Even as the construction of the institute's permanent campus moves through the pipeline, the temporary campus continues to grow in order to meet the rising needs of the faculty and students.

Library

As the most important component of any scholastic activity in a research-driven institute, the library continues to build and expand its collection both in print and digital form. The library also designs and delivers innovative services to

complement teaching, learning, research and other scholarly activities. During the year 2012-13, the library initiated a number of important activities and services that are outlined below.

Books and Audio Visual Collection

The library has a rapidly growing

collection of research monographs, text books, reference books, conference proceedings, CDs, VCDs and DVDs that cover the areas of academic and research interest of the institute. The following table presents additions made during the year 2012-13.

Type of Collection	Additions in 2012-13	Total collection (as on March 31, 2013)
Books	2,918	13,968
CDs	83	643
VCDs/DVDs	119	259
Total	3,120	14,870



Print Journals and Magazines

The library subscribes to a large number of scholarly journals, magazines and newspapers in print form. During the year the library added 11 new journals taking the total number of subscribed journals to 161. This is in addition to a large number (over 7500) of scholarly e-journals that are accessible through the library.

Digital Resources

To support the academic and research work at the institute, the library has been subscribing to several major e-resources both in bibliographic and full-text forms. The library subscribes to some of these through INDEST &

INFLIBNET e-consortia and while it has direct subscription to the others. In addition to the existing 24 resources, the following new resources were added in the last year, thereby making a total of 40 e-resources.

Full-Text e-Resources

- American Institute of Physics (AIP) Journals
- Electrochemical Digital Library
- Indiatat.com database
- Institute of Physics Journals
- NRC Press Journals
- Optics InfoBase OSA's Digital Library
- Royal Society of Chemistry (RSC) Gold Collection

In addition to these, the library

also subscribed to a number of selected journals published by following publishers.

- American Mathematical Society
- American Meteorological Society
- American Psychological Association
- Cambridge University Press
- IOS Press
- Oxford University Press
- Seismological Society of America
- Society of Photo-Optical Instrumentation Engineers - SPIE

Circulation Services

One of the major services that the library offers is circulation of books and other reading material

“ I am very impressed by the innovative ground-breaking approach IIT Gandhinagar is taking towards education in general, and integration of industry in education, in particular. ”

*Prof Vijay Gupta
Guest Professor*



among the users. Every registered user is entitled to borrow reading material physically available as a part of library collection. The total number of documents issued and returned to the users during the year was 14994 and 12683 respectively.

Resource Sharing

Since its inception the library has been proactive in helping faculty and students benefit from sharing the resources of other major libraries in the Ahmedabad and Gandhinagar, as well as those of other IITs, IIMs, IISERs and DELNET member libraries in the country. In 2012-13, the library borrowed 37 books on inter-library loan, received 609 research articles and sent 95 articles to different libraries.

Institutional Membership

In order to avail the benefits of various services, the membership of INDEST, INFLIBNET e-consortia

Development Library Network (DELNET) along with five other library and professional bodies was renewed. The library has also enrolled as Collective

Member of International Association for Bridge and Structural Engineers (IABSE) for the year 2013.

Reference and Information Services

The library has been actively promoting reference and information services (in person or over the campus network) to its user community. In 2013, library introduced “ASK A LIBRARIAN”, an email-based reference question-and-answer service.

Information Technology Infrastructure

The library added seven new computers to facilitate access to digital resources, e-journals, library online catalogue and other web-based resources on the internet. A digital multifunctional copier machine was also added to help students to photocopy and print articles.

Updating Library Books Records

The library initiated a separate project for accession and updation of the catalogue records as per international standards. Under this project the library engaged extra manpower and created accession records for nearly 6000 books and updated catalogue records of close to 9000 books as per set international standards. Besides keeping the library records up-to-date, this work will now enhance the access to library collection.

Computer Centre

The computer facilities of the institute have been developed with high-end hardware, a wide range of software and excellent connectivity so that students, faculty and staff can carry out their work without interruptions. The LAN setup integrates the entire IITGN community into a single unit. The institute premises and the student hostels are also wi-fi enabled. Currently the institute houses two computer labs, one for common use and the other for instructional purposes. Over 30 desktop computers are available to the students in a common computer laboratory that is open round the clock. In addition, the computational



instructional lab houses over 60 desktop computers. All faculty members, research scholars, research associates, project staff and administrative staff have been provided with individual desktop computers while printers are available on a sharing basis. A few high-end printing and photocopying machines are available for common use at convenient locations. Individual email accounts have been provided to IITGN students, faculty and staff with the facility of sending bulk email to common groups. This feature is useful for sending home assignments to students in a course or to students in a particular branch and year. Important scientific

software such as ANSYS, Star CCM+, Autodesk Inventor, AspenTech, Mathematica, PSCAD 4.2, STATA 11.1, AutoCAD, National Instruments LabView, Cadence, TCad, Matlab, Xilinx ISE and SAP have been procured. IITGN is also a part of the IITs systems portal at <http://www.iitsystem.ac.in/index.jsp>

Medical Centre

Two qualified medical practitioners are available at the institute for several hours on working days to provide medical care and advice to students, staff and faculty. Hospitalization expenses of all students are covered under a medical

insurance policy. A trained male nurse is available full-time to provide emergency first-aid and for routine medical services such as checking temperature, blood pressure, blood sugar, oxygen levels and dressing wounds. He dispenses many common medicines stored in the medical room against the doctor's prescription or through phone consultation. He also assists in maintaining medical supplies and keeping medical records. The other facilities include an electrocardiogram (ECG) machine, nebulizer therapy for asthma and chronic obstructive pulmonary disease (COPD), and a 24-hour vehicle facility for patients in case of emergency.

Laboratory Facilities

Chemical Engineering

All undergraduate students in the Chemical Engineering discipline are required to take a laboratory course every semester from the 3rd to the 7th semester. The chemical engineering laboratory, with an area of 165 sq m, includes experimental set-up on unit operations, reaction engineering, and process dynamics. The current facilities include double pipe/coiled/plate/fluidized/fin tube heat exchangers, chemical reactors, differential distillation set-up, packed-bed absorption column, sieve-plate distillation column, interacting/non-interacting tanks set up (all from Shree Fabricators and Engineers), calorimeter and refractometer (both from Scientific Products India), and batch dryer (from Technical Education, Bangalore). The laboratory also has several set-ups to demonstrate the basic principles of fluid flow such as flow measuring devices, centrifugal pumps and a variety of pipe fittings apparatus. The facility is being further expanded to include experiments based on process control and advanced separation techniques.

The current chemical engineering

faculty has research interests in the areas of particle formation for drug delivery, biochemical engineering, systems biology, systems engineering, powder technology, polymer engineering, smart materials, colloids and nanotechnology. The faculty research laboratories are currently housed in an area of 250 sq m. The Particle Formation Research Laboratory has high-end equipment such as a particle size analyzer (Coulter Pvt Ltd), an optical microscope with camera facility (Nikon), a freeze dryer (Martin Christ), zeta-sizer (PSS NICOMP) and peristaltic pumps (Watson Marlow). In addition, a particle size analyzer to characterize gaseous micro-bubbles and liquid drop suspensions, and high-pressure vessels for particle formation using high pressure CO₂ are also available. A high-pressure liquid chromatography (HPLC) system (Waters), a gas chromatography (GC) system (Perkin Elmer), a fermentor (Sartorius), a microplate reader (TECAN), a polymerase chain reaction thermocycler (Eppendorf), deep freezer (-86 °C) (Thermo Fisher Scientific) and other basic biology laboratory equipment are available for biochemical and biomolecular engineering

research.

A V-blender and cone-mill (Prism Pharma) have been installed for powder mixing and nanocoating applications. Powder rheometer (Freeman Technology) and a laser diffraction particle size analyzer (CILAS) are available for characterization of various powders. Digital automatic tap/bulk density apparatus (Veego) and angle of repose apparatus have been installed for characterization of bulk properties of powders. An environmental test chamber (HMG India) is available for testing powders at different humidity levels and temperatures. The powder engineering facility is geared towards developing a typical infrastructure for carrying out pharmaceutical research.

Chemistry

Chemistry at IITGN has an emphasis on pure sciences with potential application areas in the area of green chemistry, biopolymers, sensing, electrochemistry and other optical applications. The goals of the research encompasses the disciplines of chemistry and biology involving synthesis of natural product analogues,



modified nucleic acids for development of bioanalytical assays and sensor systems, isolation and characterization of chromophores from natural sources, synthesis and functionalization of nanomaterials, synthesis of macrocyclic systems such as porphyrnoids for sensing applications, photophysical and photochemical studies of synthesized organic solutes in ionic liquid media, electron transfer, development of natural food coloring agents, enzymology of redox processes and in the research involving electrochemistry, materials and catalysis. The research is funded by major funding agencies (DST, CSIR) and also supported by institute. Faculty members are also actively involved in teaching a number of core courses pertaining to both undergraduate and graduate students.

Recent additions to the research facilities include a 500MHz FT NMR (Bruker), a Synapt G2S ESI-QToF mass spectrometer (Waters) and cyclic voltammeter (CH

Instruments), a powder XRD (Bruker), a multimode 8 atomic force microscope (Bruker) and a scanning electron microscope (JEOL). Other research equipment such as digital polarimeter (Anton-Paar), an FT-IR spectrophotometer (Thermo Scientific), a digital melting point apparatus (MR-VIS), a photochemical apparatus (Luzchem), UV-Vis instruments (Shimadju and Analytik Jena), a spectrofluorometer (Horiba-Jobin Yvon), high pressure liquid chromatography system (Agilent) are already in place. The wetlab is well equipped with fume hoods, rotary evaporators (Buchi, IKA), analytical balances (Shimadju, Mettler) and regular facilities

such as Schlenk lines, heating mantles, hot plates and stirrers. The discipline also has full access to Scifinder and online subscription to many journal publications.

Civil Engineering

The Geotechnical Engineering Laboratory places great emphasis on supporting postgraduate teaching and research focusing on core subject material as well as the breadth of research interests being pursued by the MTech and PhD students. The laboratory is equipped with basic soil testing equipment as well as high-end research equipment. The equipment are used to measure mechanical properties of soils such as index property, permeability, compressibility, shear strength and dynamic properties. The laboratory has the following facilities and equipment:

- Index property and soil



classification: sieve shaker, vibratory sieve shaker, hydrometer test facility, Atterberg limit equipment (liquid limit, plastic limit, shrinkage limit), swell pressure measurement facility, specific gravity, relative density, core cutter, sand pouring apparatus, chemical test (pH, sulphite, chloride, iron), muffled furnace (900°C) for organic matter evaluation in soils, optical and digital LCD microscopes for studying shape of coarse grained particle such as sand.

- Falling-head permeability test for fine grained soil and constant-head test for coarse grained soil.
- Compressibility: Proctor testing setup (compaction test): standard and modified, two three-gang oedometer setup (consolidation test).
- Shear strength: Direct shear device for shear strength of cohesionless soils, unconfined compression (UC) testing device for shear strength of cohesive soils, vane shear test for soft soils, triaxial test setup with data acquisition and analysis software for measuring shear strength of all soil types with the facility of accurate measurement of pore pressure response and volume change

under compression loading conditions (UU, CU, CD tests), advanced automated triaxial setup with additional facility for extension loading test, Ko test and stress path test.

- Dynamic properties: fully automated cyclic triaxial test setup (0.01-10Hz, stress and strain controlled, hydraulic cum pneumatic operation) for liquefaction potential and dynamic properties of soil (high strain amplitude test; 0.0001% to 0.01%); bender element system for shear modulus of soil (low strain amplitude test; 10^{-6} % to 10^{-4} %).
- Design software: GEO5, GiD, STAD Pro, CSI-SAP.
- Surveying: auto-level, laser distance meter.
- In-situ testing: plate load test of 300kN capacity with motorized anchoring system for bearing capacity, standard penetration test (SPT) and dynamic cone penetration test (DCPT) with sautomatic free fall hammering system, static cone penetration test (SCPT). The SPT and SCPT are used for in-situ measurements of shear strength while the DCPT is used for for shear wave velocity measurements.
- Slurry consolidator setup: Setup has been developed at IITGN

laboratory for preparing the remolded specimens of fine grained soils; consists of self-reacting 250kg reaction frame with four double stroke pneumatic pressure cylinders and four consolidation cells.

- Accessories: pulverizer, high speed stirrer, hydraulic sample extractor, Shelby tubes, mechanical auger, industrial-grade DM plant, de-airing apparatus, heavy-duty soil mixer, screw air-compressor (35-45CFM, 10HP, 500L receiver).

Electrical Engineering

The Electrical Engineering discipline currently offers six laboratory courses to its undergraduate students and one basic laboratory course to students of other engineering disciplines. In addition to the facilities for carrying out standard electrical and electronic engineering experiments, the laboratory is well equipped for advanced experiments and research.

The Electronics Engineering Laboratory has Gunn diode-based microwave test benches and antenna trainer kits to train the students in RF experiments needed to meet the requirements



of the communications engineering course. It also has facilities for microprocessor and microcontroller- based embedded systems experiments.

The Control Systems Laboratory has process control trainer modules that include simulators of various types of feedback control systems that are able to simulate typical time and frequency response characteristics of a plant. PID controllers and lead/lag compensators are also in place. Process measurement kits are available to measure parameters such as temperature, level, position, velocity and acceleration. The laboratory also has a comprehensive two-channel vibration analyzer to study vibrations in flexible structures. A programmable logic controller (PLC) has been installed to familiarize the students with industrial control process.

The computational facilities of the discipline include widely used software tools such as Matlab, Synopsis TCAD tools and Cadence Analog/Digital design tools. In addition, Xilinx FPGA kits and ISE software are available in the VLSI laboratory. The laboratory is also equipped with ARM, PIC controller, AVR and microcontroller boards as well as a precision magnetic analyzer. The power systems simulation laboratory has PSCAD software licensed for 25 nodes. The latest additions to equipment and facilities in the Electrical Engineering Laboratory include a facility for fabricating printed circuit boards (PSBCs), DSP starter kits for conducting real-time signal processing experiments, a data acquisition system (National Instruments) to strengthen the machines and controls laboratory and solar PV laboratory kits for PV cell/module/system characterization.

The research interests of the faculty are diverse and emphasis is placed on promoting a culture

of research from an early stage in the undergraduate programme.

The major areas of current research interest of the faculty are image processing, power systems, renewable energy, VLSI, physiology-based affective computing, adaptive signal processing, systems engineering and photonic sensors.

The laboratory facilities now available for research include the following:

Photonic Sensors Laboratory: The Photonic Sensors Laboratory focuses on research in the field of optical physical and chemical sensors. The major area of thrust is tunable diode laser spectroscopy of gases for industrial and medical applications. The lab is equipped with narrow linewidth near-infrared laser diodes, photodetectors, fiber-optic components and high-end electronic equipment.

A state-of-the-art Semiconductor Characterization Laboratory with a 6-inch probe station, parametric analyzer, a dynamic signal analyzer and ICCAP software is under development.

An Affective Computing System

Laboratory equipped with physiological signal data acquisition system and virtual reality programming platform for research on adaptive psychophysiology based systems.

Mechanical Engineering

All first year undergraduate students are required to take a laboratory course on Workshop Practice. The Manufacturing Laboratory housed in 280 sq m area, has facilities including lathes, milling machine, vertical machining centre, electric discharge machine, welding, fitting and tin-smithy equipment. The laboratory is also used to offer two laboratory courses on Manufacturing Practices and Processes for second and third year Mechanical Engineering undergraduate students. A general workshop has been set up with facilities that include carpentry, fitting, welding, tin-smithy, band saw, welding

machines, lathes, drilling machines, shaping machine, slotting machine, milling machine, hand press and metrology instruments. Some of the key features of Mechanical Engineering Lab are as follows:

Advanced Manufacturing Laboratory (AML): The AML has been set up to support teaching and research activities in areas related to manufacturing. The laboratory facilities comprises a computer numerically controlled (CNC) lathe, CNC milling machine, coordinate measuring machine (CMM) and profile projector and a rapid prototyping machine (RPM). These facilities will support integrated product design and manufacturing activities at IIT Gandhinagar.

Mechanical Systems Design Laboratory (MSDL@IITGN): The MSDL@IITGN has been established to support the teaching of kinematics and dynamics of

four bar mechanisms, quick-return mechanism, cam mechanism, gears and gear trains, fundamental mechanical vibration tests, balancing and whirling of shaft test rigs. Students also use the workshop facilities to design and build gadgets which they display at an open house at the end of the course.

Solid Mechanics and Experimental Stress Analysis Laboratory: All second year Mechanical Engineering students are required to take a laboratory course on Solid Mechanics. The laboratory is housed in a 70 sq m area, and has various kinds of equipment to test mechanical properties of solids. Two MTS Universal Testing Machines of 10 ton and 20 ton capacity are used for tensile and compression testing. An impact testing machine of 450 J capacity (MTS) is used for Charpy testing of materials. Vickers and Rockwell hardness measurements can be made of various surfaces using the machines from Zwick/Roell. A Zwick/Roell torsion testing equipment is available for torsion testing of various materials. A fatigue testing machine is used to test the fatigue life of samples both with and without load. A

mechanisms and machine design courses. Currently this laboratory has various test rigs for conducting experiments on the kinematics and dynamics of



strain gauge based device is also available to measure strain in a cantilever beam. The Manufacturing Laboratory and the Solid Mechanics and Experimental Stress Analysis Laboratory include many fabrication and research facilities required by faculty for their research. These facilities are currently being further developed and expanded according to experimental and fabrication needs.

Fluid Mechanics Laboratory: The third year Mechanical Engineering undergraduate students are required to take a laboratory course on Fluid Mechanics and Fluid Machinery. The laboratory is located in a 155 sq. m. area, and has setups for conducting experiments on fluid statics and fluid dynamics. Several common turbomachines such as gear pump, centrifugal pump, Francis turbine, Pelton wheel along with various flow measuring devices and accessories have also been installed. An open-loop low-speed wind tunnel having test section 330x300mm at the end and a closed-loop water tunnel of test section 250x250mm are being set up to support the teaching of and to facilitate basic research in fluid

mechanics.

Controls Laboratory: A controls laboratory has been established with a few basic experiments such as sensing experiments, PID control of a hot bath systems and experiments based on control trainer kits.

Automotive Systems Laboratory: Activities related to automotive systems have begun with procuring of a 3 cylinder gasoline engine to be used for engine tear down and assembly process. The course participants are divided into multiple groups, each focusing on the design, functioning and analysis of the subsystems involved in the engine. The tear down process unfolds the details related to engine operation, engine components and interconnections between multiple components.

Fuel Systems Laboratory: A state-of-the-art fuel cell systems laboratory is being set up. This laboratory will essentially be a hydrogen, carbon monoxide and



hydrocarbon safety laboratory with a 2-tier safety system. The first (passive) tier involves a continuous ventilation system that replaces laboratory air with fresh air at a pre-determined rate. This ensures that any leaked gases do not accumulate in the room. The second (active) tier of active safety system involves the use of industrial-grade gas detectors to continuously monitor the air quality at various points inside the laboratory to detect the build-up of hazardous gases. Currently the ventilation system is being set up to prevent accumulation of harmful gases in the lab and ensure continuous circulation of air between the lab and the surroundings. A data acquisition system is being set up that will control the input flow rates of the gases based on the present concentrations in the room. The lab will house experiments related to technologies for fuel processing

apart from experiments on various fuel cell systems.

The current Mechanical Engineering faculty research interests include aerodynamics, flight mechanics, fluid-structure interaction, polymer composites, dynamics and control, systems theory, thermo-fluids systems, hydrodynamic stability and high-performance computational modeling of engineered systems.

Physics

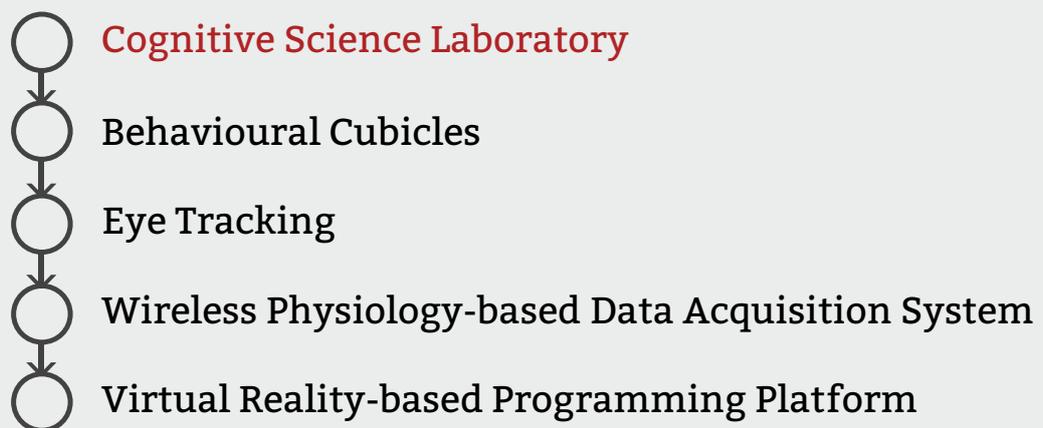
The Physics laboratories are equipped with state-of-the-art equipment and facilities for conducting undergraduate experiments. These laboratories will be expanded further to conduct advanced experiments at the MSc level. Other high-end equipment that are in the pipeline include X-ray diffraction equipment for elemental analysis, crystal growth and crystal density measurements. The

undergraduate basic physics laboratory consists of ten experiments covering topics in optics, electricity and magnetism, modern physics and classical mechanics. The procured equipment include grating spectrometer and Fresnel's biprism with optical bench (Indosaw), Newton's rings (Holmarc), Frank-Hertz experiment and Planck's constant (Scientific Equipments India Ltd). A part of the experimental set-up of the Helmholtz coil experiment was fabricated at the institute. Four sets of all experimental equipment are available in the lab and they are made available to the students for hands-on experience in their course. Apart from these experiments, the Physics laboratory also has moving-coil galvanometers (spot reflection type and suspended mirror type) and compound pendulum experiments. Cathode ray

oscilloscopes (Scientech, Scientific and Aplab), signal generators (Scientech, Scientific), dc power supplies and several optical components are available for use in many experiments. Other experimental set-ups available include universal B-H curve tracer, dielectric constant (Mittal Enterprises) and measurement of e/m by Thomson method (Besto). The Indian Academy of Sciences, Bangalore kit for experimental physics is also available. It also has a few mini electric motors and electric generators which were made by the first year students as part of their laboratory course. Four new experiments (Bifilar pendulum, LC coupled oscillator, viscosity of liquid by Atwood's machine, electromagnetically driven resonance studies) have been set up with guidance from Jawaharlal Nehru Planetarium, Bangalore. The institute has an astronomical telescope in the Physics laboratory to encourage students to develop interest in this area. It has a reflector with an eight-inch mirror of a focal length 1200 mm with a Dobsonian mount. Many students have started using it for observations of planets, star clusters and other cosmic objects. It has a lunar as well as a solar filter. The transit of Venus across the disc of the sun was observed in June 2012 with the help of this telescope.



oscilloscopes (Scientech, Scientific and Aplab), signal generators (Scientech, Scientific), dc power supplies and several optical components are available for use



Research Facilities

Cognitive Science Laboratory

The Cognitive Science laboratory consists of facilities that enable basic and advanced level research in cognitive psychology, affective computing, cognitive neuroscience, behavioral economics, and experimental philosophy. The facility consists of a collection of laboratories equipped with behavioural data collection cubicles, an eye tracker, a wireless physiology-based data acquisition system, virtual reality-based programming platform and will be supplemented in the future with a 256-channel EEG system.

Behavioural Cubicles

There are currently three behavioural cubicles housing personal computers that can support behavioural data collection. The cubicles are partially sound-proof dark rooms with adjustable lighting. The computers have Matlab installed on them along with the Psychophysics Toolbox. These facilities are used by postgraduate students and faculty members for research on decision making, attention, agency etc. They also support E-Prime and other software such as Blitz3D. These labs are also used as private spaces for paper pencil tests and questionnaires that

require an environment free of external interference.

Eye Tracking

The eye tracking facility includes a Tobii TX 300 Eye Tracker and comes with the Tobii Studio™ Eye Tracking Software. This is a state-of-the-art eye tracking facility that can be used for a variety of purposes including consumer behaviour research and vision research. The instrument can collect data pertaining to saccades, correction saccades, fixation duration, pupil size and blinks. Unlike typical eye trackers, the Tobii TX 300 Eye Tracker supports large head movements and thus does not

require a chin rest to keep the head stable. This helps to increase the validity of the study and enables data collection from subjects for whom head movement is difficult to restrict. This is facilitated by rapid and automatic calibration procedures. The TX300 can run on sampling rates of 60, 120 or 300 Hz and the high sampling rates allows for precise synchronization of gaze data with data from other sources such as EEG systems. This real-time integration of eye tracking and EEG data is an uncommon, but highly desirable feature. The facility also includes Tobii Toolbox which supports data collection using Matlab thereby minimizing the use of Tobii Studio for experimental design. Support is also available for E-Prime through extensions from Tobii.

Wireless Physiology-based Data Acquisition System

The wireless physiology-based data acquisition system, manufactured by Biopac Systems Inc., facilitates real-time data acquisition of physiological signals. The system covers a wide range of physiology signals such as ECG, EMG, EDA and provides excellent signal quality with digital transmission with high

resolution of 16 bits and speeds as high as 400 kHz. The wireless, wearable physiological monitoring device, noninvasively records high quality data and is the perfect tool for applications that demand greater degrees of subject freedom and advanced experimental design. The system is compatible with the virtual reality-based programming platform from WorldViz.com.

Virtual Reality-based Programming Platform

Vizard is a high-level graphics toolkit from WorldViz Inc. for the development of high-performance graphics applications, including virtual reality (VR), scientific visualization, games, and flight simulation. The VR platform provides controlled and replicable experimental setups and allows manipulation of the environment (and avatars) that would be impossible or prohibitively expensive in the real world. Use of the VR Toolkit along with Biopac data acquisition and analysis system to synchronize events from the virtual world with the physiological data, allows accurate and automated data analysis and adds a new dimension to the research.

Fuel Cell Systems Research Laboratory

This facility is equipped with a two-tier safety system to protect against accidental leakage of potentially hazardous gases such as hydrogen, carbon monoxide, and other hydrocarbons. Since fuel cell systems research involves the use (or production) of these gases, proper safety procedures as per accepted international standards of safety have been followed. The first tier of safety involves continuous ventilation at a controlled flow rate of fresh air intake and room air exhaust. In addition, computational fluid dynamics (CFD) studies were carried out to study the behavior of these gases in the event of a leakage under ventilated and non-ventilated conditions. Based on the results of these studies the intake and exhaust vents were sized and located. The intake and exhaust flow rates have been designed to be varied between 2000-5000 CFM (55-140 m³/minute) according to the usage. A second tier of safety consists of gas detectors deployed at strategic locations (aided by the CFD models) to detect accidental leakage of particular gases. These detectors are linked to an embedded controller-based data

acquisition system that continuously monitors output from multiple detectors. If the concentration of any gas crosses a preset threshold, the controller either activates an audio-visual alarm or increases the fresh air and/or exhaust air flow rates in the ventilation system or shuts off supply of specific gases. It is expected that with this safety system in place, faculty members in other disciplines will be able to utilize this facility to carry out various activities pertaining to catalyst testing, reactor development, catalytic heat exchanger development, sensor development and thermal systems studies.

High-performance Computing Laboratory

A Hybrid multi-core and GPU-based high-performance computing (HPC) platform has been established for advancing research and teaching in computational science and engineering, and for the promotion of the use of GPU and CUDA programming for HPC. Currently the computational design facility consists of seven networked workstations set up with partial support from IIT Gandhinagar, Fujitsu and Nvidia. The main compute engines of this

system are the two Celsius R-670 workstations consisting of twenty four CPU cores, 96 GB main system RAM (i.e. CPU cores) and 2 Terabytes of HDD Storage and four Nvidia Tesla C2070 GPU cards consisting a total of 1800 CUDA cores and 6GB GPU/Graphics RAM. The system runs on the Ubuntu Linux operating system and the job scheduling is managed by Torque, an open-source software. The remaining five high-end workstations (each consisting of Nvidia Quadro 2000 cards, 1 GB memory with 1 TB storage, four CPUs and 4GB RAM and 192 GPU cores) form a computational design cluster of twenty CPUs, 20GB RAM to facilitate high fidelity computational modeling and visualization of engineered systems. The entire facility is connected via network with an 8TB NAS unified storage system. The main compute engines of this system comprising GPU cards are being placed on the Indian National Grid, Garuda so that parties interested in learning and using GPUs for their work can access this facility. IITGN has also been appointed as the Indian Grid Certification Authority by CDAC in Ahmedabad.

The system has been loaded with

a number of software packages ranging from gcc compilers to parallel computing software such as OpenMPI, OpenMP, Pthreads and a parallel scientific library PETSc. Various computer-aided engineering software such as FEM, CFD, both commercial and open-source, have been installed and are being used for research and teaching.

Instrumentation Facility for Chemistry

- UV-visible Spectrophotometer (UV1800, Shimadzu, Japan): The spectrophotometer is used to measure absorption properties of organic pigments and dyes prepared in the research laboratory. This is also used for the calculation of absorption coefficients and solvatochromism of organic macrocycles. The instrument is also used to carry out molecular recognition studies (host-guest chemistry) based on UV-vis titrations.
- Analytical Balance (Mettler Toledo): The weighing balance is used to accurately weigh small amounts (1.0 mg scale) of chemical compounds used for synthetic lab work.
- Rotary Evaporator (Buchi-Germany and Roteva Equitron, India): These two instruments



(attached with vacuum pump and chiller) are used for removal of bulk solvent from reaction mixtures as well as for recycling of the solvent mixtures used during column chromatographic purification of organic compounds.

- Chiller (cold water circulatory bath, R-12, Lauda, Germany): This instrument is attached to two rotary evaporators and is used for cooling down the solvent vapours generated during removal of solvents using rotary evaporators.

Materials Electrochemistry Laboratory

A potentiostat-galvanostat (CH-660E, CH instrument, USA) has

been procured. This facility is useful in characterizing the electronically conducting material to get their I-V characteristics. As this equipment also has a power source and load, it is also useful to understand the discharge capacity of a battery and capacitor. This facility comes with readymade glass cells and metal electrodes. This equipment can be used to perform a wide range of experiments such as: potentiostat/galvanostat, cyclic voltammetry, linear sweep voltammetry (LSV), staircase voltammetry (SCV), Tafel plot (TAFEL), chrono amperometry (CA), chrono coulometry (CC), differential pulse voltammetry, double differential pulse

amperometry (DDPA), triple pulse amperometry (TPA), bulk electrolysis with coulometry (BE), hydrodynamic modulation voltammetry (HMDV), sweep-step functions (SSF), multi-potential steps (STEP), ac impedance (IMP) 10uHz-1MHz, impedance-time (IMPT), impedance-potential (IMPE), chronopotentiometry (CP), multi-current steps (ISTEP), chronopotentiometry with current ramp (CPCR), potentiometric stripping analysis (PSA), open circuit potential-time (OCPT), RDE control (0-10V output), full version of CV simulator and impedance simulator.

A facility for synthesizing metal

“ I found a refreshing diversity of backgrounds, aspirations and interests in the student community at IITGN; an equally elevating experience was the range and maturity of student leadership. I am confident that several of the innovative initiatives taken by IITGN will help transform this varied and passionate student resource into outstanding contributors to the service of the nation and humanity. ”

*Prof S L Narayanamurthy
Guest Professor*

oxides has been set up in the Materials Synthesis Laboratory. This includes a locally made high-temperature furnace, benchtop pH meter (Thermo Scientific) and benchtop ultrasonicator (hot plates with magnetic stirrers).

Molecular Biology Laboratory

The Molecular Biology laboratory facility supports research activities of faculty members and graduate students. This facility is equipped with a laminar hood, -80°C freezer, -20°C variable temperature freezer, -20°C constant temperature freezer, 4°C refrigerator, analytical balance, DNA and protein gel running setups, western blotting apparatus, pH meter, spectrophotometer, gel visualizer, temperature-controlled incubator shakers (refrigerated and non-refrigerated), incubator, hot oven, high speed centrifuge, bright field microscope, fluorescence spectrophotometer with plate reading capacity, electroporator, water bath and water purifier.

Particle Engineering and Powder Processing Laboratory

A research laboratory on particle engineering and powder processing (PEPP) has been set up to support research in the area of powder technology. The facility is

similar to a typical formulation lab (solid dosage) used in the pharmaceutical industry. Several sophisticated instruments have been procured to characterize the particulate solids, bulk powders under different humidity conditions. The facility has equipment to study various aspects of powder technology such as powder packing, mixing, fluidization and flow through hopper. The laboratory is currently equipped with a V-blender (Prism Pharma) and a cone-mill (Prism Pharma) for powder mixing and milling. Other sophisticated equipment such as powder rheometer (Freeman Technology) and laser diffraction particle size analyzer (CILAS) are available to characterize the bulk powder (shear test, bulk density, compressibility, aeration etc.) and particle size determination. A digital automatic tap/bulk density apparatus (Veego) and angle-of-repose apparatus are there for tap density and angle-of-repose measurement. An environmental test chamber (HMG India) along with a hot-air oven is there for subjecting the powders to different humidity and temperature conditions. Different sizes of fluid bed and mixing devices have been fabricated to study the

fluidizability, flow through hoppers, mixing of fine powders.

Particle Engineering for Pharmaceutical and Biomedical Applications

A state-of-the-art laboratory facility has been developed for preparation and characterization of nanoparticles/microparticles to be used in pharmaceuticals and biomedical applications. The laboratory facilities include a set-up for nanoparticle production using a probe sonicator (Sonics VC 505), a particle size analyzer (Beckman Coulter LS 13320) for measurement of particle sizes in the range of 40nm-2mm and particle sizing systems (PSSS) zeta analyzer (NICOMP 380 ZLS) for estimation of zeta potential of aqueous suspensions of nanoparticles. The PSS NICOMP 380 ZLS can also be used to estimate the size of particles in the range of 0.6nm-10µm. A Martin Christ freeze dryer (Alpha 1-4 LD plus) is available for preparation of dry powder samples. A scanning electron microscope (JEOL, JSM 7600F), X-ray diffractometer (Bruker, Seifert XRD 3000PTS) and atomic force microscope (Bruker, Multimode-8-AM) have been installed as a part of the central

characterization facility and are available for characterization of surface characteristics and morphology of nanoparticles. A facility to produce aqueous suspensions of drug nanoparticles using subcritical CO₂ (at 30-70 bar) is also available which includes a 5-liter high-pressure vessel (operating conditions: 200 bar, and 100o C). A facility to prepare and characterize aqueous suspensions of microbubbles is also available. These microbubble suspensions are emerging as a major tool in ultrasonic contrast imaging and drug delivery applications. The facility includes a set-up for generating microbubbles, a particle size analyzer (PSS NICOMP Accusizer 780AD) for analysis of size distribution and concentration of microbubble suspensions, a swing bucket rotor centrifuge (Eppendorf 5804) to obtain microbubbles suspensions with a narrow size distribution through differential centrifugation and an optical microscope (NIKON TS 100F) for the characterization of morphology of microbubbles.

Photonic Sensors Laboratory

The Photonic Sensors Laboratory conducts research in the area of physical and chemical sensing

using photonic technologies. An area of current focus is tunable diode laser spectroscopy for real-time detection of hazardous gases and measurement of gas concentration, pressure and temperature. This activity has direct application in industrial process control, safety and clinical applications such as breathe analysis for non-invasive detection of biomarkers. The laboratory is equipped with narrow linewidth near-infrared laser diodes (1650nm from Toptica Photonics and 2004nm from Vertilas), thermoelectrically-cooled amplified photodetectors (Thorlabs), a 50MHz dual-phase digital lock-in amplifier (Zurich Instruments), a high-end arbitrary waveform generator (Agilent) and a 500MHz digital storage oscilloscope. The laboratory also has an assortment of telecom-grade laser diodes, photodetectors and optical fiber components.

Semiconductor Device Characterization Facility

The semiconductor device characterization facility has been established for detailed wafer-level characterization (I-V, C-V, pulse, noise and reliability measurements). This facility has the following equipment: a 6-inch

wafer probe station with thermo chuck (Semiprobe), semiconductor parametric analyzer B1500 with 4 SMUs, 1 LCR meter, 1 pulse unit (Agilent), dynamic signal analyzer 35670A (Agilent), low-noise current preamplifier (Stanford Research Systems), ICCAP modelling software (Agilent), manual diamond scribe (ATV). This facility will be extensively used for semiconductor device/circuit research, semiconductor device modelling and electrical characterization of nanostructures.

Solar PV Plant Facility

Two roof-top solar PV systems (each 10 kWp) sponsored by Gujarat Energy Development Agency (GEDA) Gandhinagar and NTT Facilities, Inc, Japan have been installed on one of the buildings. These PV systems are already operational and are being used to conduct research and support teaching in the field of solar photovoltaics. An accurate data acquisition and monitoring system installed at IIT Gandhinagar for the PV systems complements research in the area of forecasting and performance analysis of the two types of solar PV modules and in investigation of the impact of solar PV systems on the local power distribution

“ IITGN is an exciting new place with new ideas. It has the potential to reach great heights. ”

*Prof K S Gandhi
Guest Professor*



network. An important contribution of this installation is that it significantly reduces the electricity energy bills of the institute. It is proposed to add the IITGN solar PV system to the Underwriter Laboratories (UL, USA) PV research node for long-term ageing studies and the other aspects related to the solar PV system. The UL PV research grid has such collaborations with Case Western Reserve University (CWRU), USA and INER (Taiwan) solar PV facilities. Adding the IITGN PV system would provide another climate region that will boost collaborative research.

X-ray Diffraction System

One of the most sophisticated instruments procured for

material characterization and advanced materials research includes a floor-mounted and fully automatic X-ray diffraction (XRD) system. The diffractometer is from Bruker AXS, Germany (D8 Discover) and is a plug-and-play multimode system to study powder X-ray diffraction, thin film analysis (parallel beam optics), small-angle X-ray scattering (transmission mode) and non-ambient high-temperature (up to 1600°C) X-ray diffraction. Standard crystallographic ICDD database is available for phase identification. Researchers can also use the analysis software Drffrac EVA for interpretation of XRD data.

New Buildings

Two New Buildings Inaugurated

A new 2010 sq m building (Shed-4) constructed on the temporary campus at VGEC was inaugurated by **Prof Sudhir K Jain** on July 25, 2012. Another 3000 sq m building (Shed-5) was inaugurated on Feb 18, 2013. The buildings are being used to house expanded laboratory facilities, provide office space to faculty and research scholars and meet the requirement of new classrooms.

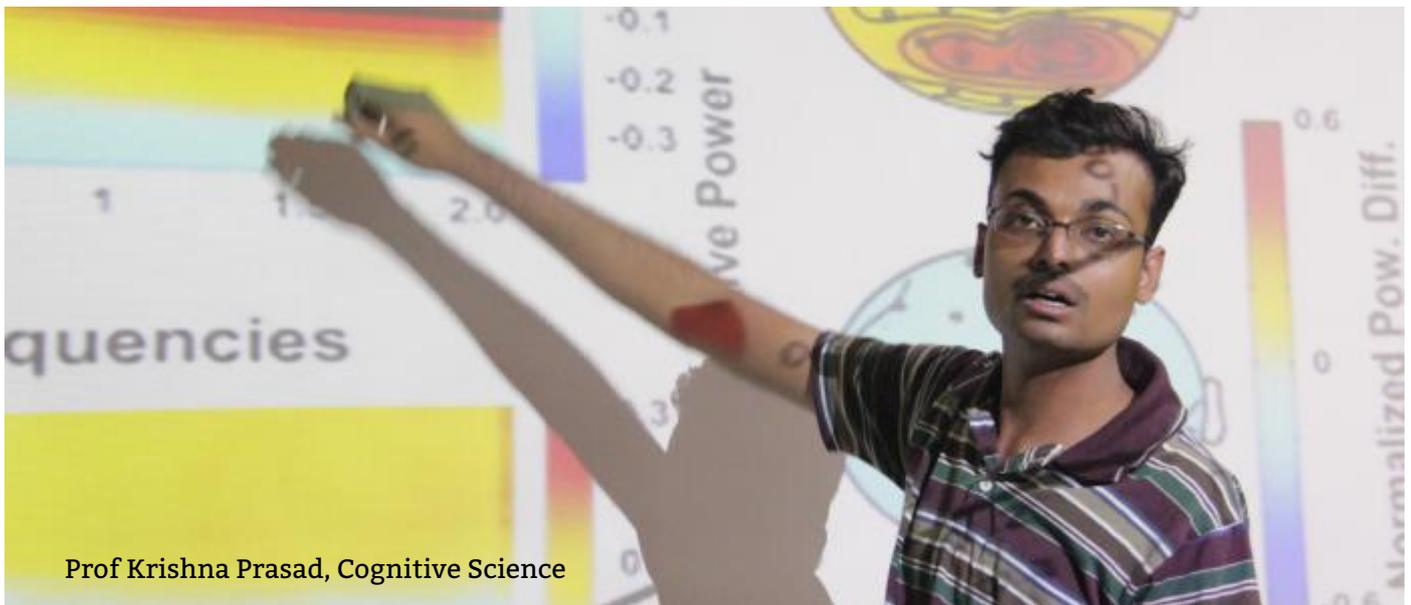
FACULTY ACTIVITIES

Faculty members at IITGN are engaged in a wide range of academic activities that relate to research and development, consultancy, publications, and honorary work for other academic organizations.

Sponsored Projects

Projects Sanctioned during 2012-13

- *Ethanol autothermal reforming: design optimization through experimental and modeling studies* sponsored by the Department of Science and Technology (DST). Principal Investigator: **Prof Atul Bhargav**, Mechanical Engineering
- *Carbaporphyrins with inbuilt arene moiety: their synthesis, characterization and metal coordination study* sponsored by the Council of Scientific and Industrial Research, Human Resource Development Group. Principal Investigator: **Prof Iti Gupta**, Chemistry
- *Effects of device geometries and design rules on the performance and reliability of advanced MOS devices with high-K gate dielectrics and metal gates* sponsored by the Department of Science and Technology. Principal Investigator: **Prof Nihar Mohapatra**, Electrical Engineering
- *A novel system-identification-based approach for understanding the deformability of DNA* sponsored by Department of Science and Technology, Government of India. Principal Investigator: **Prof Harish P M**
- *Colloidal particles self-assembly in liquid crystals* sponsored by the Department of Science and Technology. Principal Investigator: **Prof Prachi Thareja**, Chemical Engineering
- *An Investigation on eigenvalue problems and qualitative theory of fully nonlinear elliptic equations* sponsored by National Board of Higher Mathematics. Principal Investigator: **Prof Jagmohan Tyagi**, Mathematics



Prof Krishna Prasad, Cognitive Science

Ongoing Sponsored Projects

Funding for the following projects has been received from the sponsoring agencies during 2009-12:

- *Quantitative near- and mid-infrared wavelength modulation spectroscopy for gas sensing applications* sponsored by Department of Science and Technology, Government of India. Principal Investigator: **Prof Arup Lal Chakraborty**, Electrical Engineering
- *A novel process for precipitation and stabilization of drug nanoparticles in aqueous suspensions using CO₂* sponsored by Department of

Biotechnology, Government of India. Principal Investigator:

Prof Sameer V Dalvi, Chemical Engineering

- *Center of Excellence in biomedical engineering and health care technologies* sponsored by Industries Commissionerate, Government of Gujarat. Principal Investigator: **Prof Sameer V Dalvi**, Chemical Engineering
- *Rapid precipitation of drug nanoparticles using ultrasonically-driven mixing device* sponsored by Department of Science and Technology, Government of India. Principal Investigator:

Prof Sameer V Dalvi, Chemical Engineering

- *Engineering stable and bio-compatible microbubble formulation for biomedical applications* sponsored by Department of Biotechnology. Principal Investigator: **Prof Sameer V Dalvi**, Chemical Engineering
- *High-fidelity computational engineered systems on HPC platforms* sponsored by the Department of Information Technology. Principal Investigator: **Prof Murali Damodaran**, Mechanical Engineering

- *Technological value addition to the initial design of a low-cost windmill for pumping brine and electricity production in rural areas - a GRiDS@IITGN-NIF initiative* sponsored by National Innovation Foundation, Department of Science and Technology. Principal Investigator: **Prof Murali Damodaran**, Mechanical Engineering. Co-PIs include **Prof Atul Bhargav** and **Prof Naran Pindoriya**
- *Fire engineering lab, Underwriters Laboratory, USA,* Principal Investigator: **Prof Chinmay Ghoroi**, Chemical Engineering
- *Photo-processes of donor-acceptor substituted polyenes in ionic liquid media* sponsored by the Department of Science and Technology, Government of India. Principal Investigator: **Prof Sriram Kanvah Gundimeda**, Chemistry
- *Photochemical and photophysical studies of donor-acceptor substituted aryl and heteroaryl polyenes* sponsored by Council of Scientific and Industrial Research. Principal Investigator: **Prof Sriram Kanvah Gundimeda**, Chemistry
- *Hybrid calix[n]pyridine(s) with pyridine moiety: new block of macrocycles as potential candidates for anion sensing and metal coordination* sponsored by Department of Science and Technology. Principal Investigator: **Prof Iti Gupta**, Chemistry
- *Development of a rapid visual screening method for seismic assessment of RC frame buildings in India* sponsored by the Seismology Division, Ministry of Earth Sciences, Government of India, New Delhi. Principal Investigator: **Prof Sudhir K Jain**; other collaborators are Prof Durgesh C Rai, IIT Kanpur, Prof Keya Mitra, BESU Shibpur, and Prof Mehul Shah, CEPT Ahmedabad
- *An experimental investigation to locate and assess the severity of winding deformations in power transformers* sponsored by the Department of Science and Technology, Government of India. Principal Investigator: **Prof Ragavan K**, Electrical Engineering
- *A cognitivist exploration of the concept of privacy behavior and experience* sponsored by Department of Science and Technology, Government of India. Principal Investigator: **Prof Jaison A Manjaly**, Philosophy
- *Technology incubation and development of entrepreneurs centre* sponsored by Department of Information Technology. Principal Investigator: **Prof Joycee Mekie**, Electrical Engineering
- *Experimental studies of metastability in different synchronizers* sponsored by the Department of Science and Technology. Principal Investigator: **Prof Joycee Mekie**, Electrical Engineering
- *Short-term generation scheduling in power systems under uncertainty/ intermittent characteristics of renewable energy sources (RES) and demands* sponsored by Department of Science and Technology. Principal Investigator: **Prof Naran Pindoriya**, Electrical Engineering
- *Virtual geotechnical laboratory* sponsored by Ministry of Human Resource Development, Government of India. Principal Investigator: **Prof Amit Prashant**, Civil Engineering



IIT Gandhinagar is an institute with dynamic intentions and inspirations for higher education of international standards.



Prof A Ramanathan
Guest Professor

Consulting Projects

Projects Sanctioned during 2012-13

- *Computational fluid dynamics* for Hi-Tech Outsourcing Services. Principal Investigator: **Prof Murali Damodaran**, Mechanical Engineering
- *Industrial computational fluid dynamics activities* for Hi-Tech OS. Principal Investigator: **Prof Murali Damodaran**, Mechanical Engineering
- *Seismic design criteria for metro structures* for MEGA. Principal Investigator: **Prof Sudhir K Jain, Prof Amit Prashant** and **Prof Dhiman Basu**, Civil Engineering
- *Design of rehabilitation of articulations of Naini bridge* for Dynasoure Concrete Treatments Pvt Ltd. Principal Investigator: **Prof Abhijit Mukherjee**, Civil Engineering.
- *Smart grid pilot project – UGVCL* for Uttar Gujarat Vij Company Ltd. (UGVCL), Gujarat. Principal Investigator: **Prof Naran M Pindoriya**, Electrical Engineering
- *Establishment of mechanical workshop* for Nirma University. Principal Investigator: **Prof N**

Ramakrishnan, Mechanical Engineering

- *Analysis of slopes at Ghatkopar* for Satra Property Developers Pvt Ltd, Mumbai. Principal Investigator: **Prof Ajanta Sachan**, Civil Engineering

Ongoing Consulting Projects

- *National level expert institute to advise and oversee the scheme on state level anchor institutes in the focus sectors* sponsored by the Government of Gujarat. Principal Investigator: **Prof Sudhir K Jain**, Civil Engineering
- *IITK-BMTPC earthquake tips*, Phase II for BMTPC. Principal Investigator: **Prof Sudhir K Jain**, Civil Engineering
- *Design of helium gas circulators* for helium cooling loop at IPR, sponsored by Institute for Plasma Research, Gandhinagar. Principal Investigator: **Prof Vedant Kadambi**, Mechanical Engineering
- *Consulting with Electrotherm India Ltd*, Ahmedabad, Principal Investigator: **Prof Ragavan K**, Electrical Engineering
- *Geotechnical design for cell-1 of Kanjurmarg solid waste management system*, Principal

Investigator: **Prof Amit Prashant**, Civil Engineering

Internally Funded Projects

The institute firmly believes in providing an enabling atmosphere for faculty to start research activities as soon as they join. The institute therefore encourages faculty to submit proposals for internal funding while they either prepare project proposals for external funding or await the funds to be released by sponsoring agencies. The following projects have been internally funded at IITGN:

- *Heat transfer and material flow model for friction stir welding of copper alloys*, Principal Investigator: **Prof Amit Arora**
- *Rotational seismic excitation and its event-to-event variability*, Principal Investigator: **Prof Dhiman Basu**
- *Fuel cell systems research laboratory* at IIT Gandhinagar, Principal Investigator: **Prof Atul Bhargav**
- *Infrared wavelength modulation spectroscopy techniques for quantitative gas sensing applications using novel non-telecom diode lasers*, Principal Investigator: **Prof Arup Lal**



Chakraborty

- *Controlled precipitation of nanoparticles using ultrasonically-driven rapid mixing device and their incorporation into strip films for therapeutic applications,* Principal Investigator: **Prof Sameer V Dalvi**
- *Controlled synthesis of silver and gold nanomaterials by DNA complexation,* Principal Investigator: **Prof Bhaskar Datta**
- *Modeling and simulation of soft active materials,* Principal Investigator: **Prof Pratyush Dayal**

- *Property improvement of cohesive pharmaceutical powders through continuous nano-coating,* Principal Investigator: **Prof Chinmay Ghoroi**
- *Design, synthesis and applications of expanded meta- and para-benzoporphyrinoids,* Principal Investigator: **Prof Iti Gupta**
- *Implications of tau misfolding in Alzheimer disease and beyond,* Principal Investigator: **Prof Sharad Gupta**
- *Modeling spread of dengue*

- *epidemic in urban areas from a spatial interacting networks perspective,* Principal Investigator: **Prof Shivakumar Jolad**
- *Modulation of small molecules to develop effective drugs for helicobacter pylori infection,* Principal Investigator: **Prof Sivapriya Kirubakaran**
- *Understanding India's multilingualism,* Principal Investigator: **Prof Rita Kothari**
- *Intelligent adaptive physiology-based affect sensitive virtual social communication system*

- for children with autism spectrum disorder*, Principal Investigator: **Prof Uttama Lahiri**
- *Delayed reconstruction of unknown inputs of dynamical systems*, Principal Investigator: **Prof Harish P M**
 - *Metastability studies of flip-flop synchronizers based on simulations and on-chip experiments*, Principal Investigator: **Prof Joycee Mekie**
 - *Rational design of new antibiotics*, Principal Investigator: **Prof Abhijit Mishra**
 - *Segmentation of action sequences during individual learning and interpersonal interactions*, Principal Investigator: **Prof Krishna Prasad Miyapuram**
 - *Reliability study of advanced CMOS devices with high-K dielectrics and metal gates developed in a 28nm CMOS technology*, Principal Investigator: **Prof Nihar Ranjan Mohapatra**
 - *Stability analysis of non-parallel axisymmetric boundary layers*, Principal Investigator: **Prof Vinod Narayanan**
 - *Optimal batch operation: optimal operation of a butylated urea formaldehyde batch reactor using modified genetic algorithm*, Principal Investigator: **Prof Nitin Padhiyar**
 - *Fabrication and microstructural investigation of Cu (In_{1-x}Ga_x)Se₂ (CIGS) self-assembled nanodots for the photovoltaic applications*, Principal Investigator: **Prof Emila Panda**
 - *Research on the construction and analysis of Ramamatya's Veena*, Principal Investigator: **Prof Srinivas Reddy**
 - *Research on Telugu manuscripts*, Principal Investigator: **Prof Srinivas Reddy**
 - *Mapping out health accessibility of the elderly in India: geographic information system (GIS) and its applications to demography of aging*, Principal Investigator: **Prof Tannistha Samanta**
 - *Black hole thermodynamics: beyond general relativity*, Principal Investigator: **Prof Sudipta Sarkar**
 - *Measuring environmental factors related to nutrition in Gujarat, India*, Principal Investigator: **Prof Malavika Subramanyam**
 - *Nanoporous conducting metal oxides for the electroreduction of CO₂ to make useful products*, Principal Investigator: **Prof Sudhanshu Sharma**
 - *Role of expectancy in attention capture*, Principal Investigator: **Prof Meera Mary Sunny**
 - *Laboratory for soft matter science and engineering rheology and interfacial engineering of colloidal particles in self-assembling media*, Principal Investigator: **Prof Prachi Thareja**

Awards and Recognition

The following faculty members have received special awards and recognition by external bodies during 2011-12:



Prof Abhijit Mishra



Prof Sudhir K Jain



Dr Nikhil Balram



Prof Sudhanshu Sharma



Prof Uttama Lahiri

- **Prof Abhijit Mishra** received the **MAHE Award** for the best paper presented by a scientist or faculty member at the **International Conference on Design of Biomaterials** held at IISc Bangalore, Dec 9-11, 2012.
- **Prof Arnapurna Rath** received the **Excellence in Thesis Award** for her doctoral research during the Golden Jubilee Convocation of IIT Bombay held on Aug 18, 2012.
- **Dr Nikhil Balram**, a guest professor at IITGN, and president and CEO of Ricoh Innovations Inc, was conferred the **2012 Fellow Award** by the Society for Information Display (SID). Prof Balram was also awarded the **Gold Stevie Award** for Executive of the Year at the 9th Annual International Business Awards.
- **Prof Sudhanshu Sharma**

became the first faculty member of IITGN to receive the **Ramanujan Fellowship**.

The Ramanujan Fellowship is sponsored by the Department of Science and Technology (DST) and aims to attract brilliant scientists and engineers from all over the world to take up scientific research positions in India.

- **Prof Sudhir K Jain** has been elected as the **President of the International Association for Earthquake Engineering (IAEE)**. IAEE is an international association with membership of the societies of 56 countries. Prof Jain's contributions in the field of earthquake engineering were also noted at the national and international level in a

recently book titled **Earthquakes and Engineers: An International History** authored by Robert K Reitherman and published by the American Society of Civil Engineers, ASCE Press, 2012.

- **Prof Uttama Lahiri** has been awarded the **Dr C V Raman Young Teachers' Excellence Award** in the field of Engineering and Technology for 2012. Prof Lahiri also received the **Best Speaker Award** from BIOFEST 2012 International Bioconference and Event, Hyderabad, Dec 12-13, 2012.



Prof Amit Arora



Prof Atul Bhargav



Prof Arup L Chakraborty



Prof Sameer V Dalvi



Prof M Damodaran



Prof Michel Danino



Prof Pratyush Dayal

Honorary Works

Prof Amit Arora, Materials Science and Engineering

- Reviewer, Transactions of the Indian Institute of Metals, April 2012 and Sept 2012
- Reviewer, Journal of Mechanical Engineering Science, May 2012
- External examiner, MTech thesis evaluations, U V Patel College of Engineering, Ganpat University, Aug 2012
- Technical exhibition judge, Pandit Deendayal Petroleum University, Sept 2012
- Member, Central Advisory Board, ChemPetro World Expo, Jan 15-18, 2013

Prof Atul Bhargav, Mechanical Engineering

- Reviewer, Journal of Energy Resources Technology

Prof Arup Lal Chakraborty, Electrical Engineering

- Member, Technical Programme Committee, 12th International Conference on Fiber Optics and Photonics (Photonics 2012), IIT Madras, Dec 9-12, 2012
- Chair, session on Biophotonics and adjudicator for a poster session at Photonics 2012, IIT Madras, Dec 9-12, 2012
- Reviewer, Optics Letters, Optical

- Society of America
- Reviewer Optics Express, Optical Society of America

Prof Sameer V Dalvi, Chemical Engineering

- Reviewer, Journal of Crystal Growth
- Reviewer, Chemical Engineering Journal

Prof Murali Damodaran, Mechanical Engineering

- Member, Editorial Board of International Journal of Computational Fluid Dynamics
- Managing Editor, International Journal of Information Technology
- Member, Conference Editorial Board of the 3rd International Conference on Parallel, Distributed, Grid and Cloud Computing for Engineering, (PARENG 2013), March 25-27, 2013
- Reviewer, AIAA Journal, Computers and Fluids, International Journal of Computational Fluid Dynamics, International Journal for Numerical Methods in Fluids, APS-Physical Review
- Reviewer, new book proposals for John Wiley Publishers and World Scientific Publishers

- External examiner, an MS Thesis, IIT Madras; 3 MTech Theses, SVNIT Surat; and a PhD Thesis, Veer Narmada South Gujarat University, Surat
- External reviewer, Faculty Tenure Extension at NCBS-TIFR Bangalore
- Member, Expert Committee for review of proposals for scientific validation and value addition in Grassroots Innovations at National Innovation Foundation
- Nominated member, Academic Body of the Faculty of Technology and Engineering, Nirma University, Ahmedabad
- Appointed Registration Authority at IIT Gandhinagar for the Indian Grid (Garuda) Certification Authority (IGCA) by C-DAC Bangalore
- Member, Evaluation and Mentoring Panel of the Power of Ideas 2012 Initiative by The Economic Times in association with DST, Government of India and IIM Ahmedabad's CIIE to develop a stronger entrepreneurial ecosystem in India

Prof Michel Danino, Social Sciences

- Member, Course Committee for the CBSE elective course for



Prof Nithin V George



Prof Chinmay Ghoroi



Prof Sriram K Gundimeda



Prof Sharad Gupta



Prof Sudhir K Jain



Prof Kabeer Jasuja



Prof Rita Kothari

classes 11–12 on “Knowledge Traditions and Practices of India”

Prof Pratyush Dayal, Chemical Engineering

- Reviewer for Scientific Journals: Czechoslovak Chemical Communications, Industrial Engineering and Chemistry Research, Journal of the Royal Society Interface

Prof Nithin V George, Electrical Engineering

- Reviewer, Applied Acoustics (Elsevier)
- Reviewer, Journal of Signal Processing Systems (Springer)

Prof Chinmay Ghoroi, Chemical Engineering

- Reviewer, Powder Technology, Elsevier
- Member, Board of Studies, Chemical Engineering, Nirma University, Ahmedabad
- Member, Faculty of Technology and Engineering, Nirma University, Ahmedabad

Prof Sriram Kanvah Gundimeda, Chemistry

- Reviewer, Molecular Biology Reports

- Reviewer, Nucleosides, Nucleotides and Nucleic Acids

Prof Sharad Gupta, Biological Engineering

- Reviewer, Gandhian Young Technological Innovation Awards 2013

Prof Sudhir K Jain, Civil Engineering

- Executive Vice President, and later as President- Elect, International Association for Earthquake Engineering
- Chairman, International Activities Committee, Earthquake Engineering Research Institute, USA
- Member, Board of Management, NIIT University, Neemrana, Rajasthan
- Member, Advisory Editorial Board, Earthquake Engineering and Structural Dynamics, John Wiley and Sons
- Member, Editorial Board, Earthquake Engineering and Engineering Vibrations, Springer-Verlag
- Member, Board of Directors, Gujarat Foundation for Entrepreneurial Excellence (GFEE), Ahmedabad
- Member, Board of Governors, Gujarat Technological

University, Ahmedabad

- Member, Board of Directors, Gujarat International Finance Tech-city (GIFT) Company Ltd
- Member, Technical Advisory Committee for Ahmedabad-Gandhinagar Metro Rail Project

Prof Kabeer Jasuja, Chemical Engineering

- Reviewer, Nature Scientific Reports

Prof Rita Kothari, Humanities

- Reviewer, manuscripts by Sage, Orient Blackswan and Routledge

Prof Uttama Lahiri, Electrical Engineering

- Reviewer, Journal of Autism and Developmental Disorders (JADD)
- Reviewer, American Journal of Autism, Columbia International Publishing

Prof Harish P M, Mechanical Engineering

- Associate Editor, IEEE Control Systems Society Conference Editorial Board
- Reviewer, International Journal of Control
- Reviewer, IEEE Transactions on Circuits and Systems



Prof Uttama Lahiri



Prof Harish P M



Prof J Mukhopadhyay



Prof K V V Murthy



Prof D V Pai



Prof Rosa Maria Perez



Prof Naran M Pindoriya

- Reviewer, ASME International Design Engineering Technical Conferences
- Reviewer, IEEE Conference on Decision and Control
- Reviewer, IEEE American Control Conference

Prof Jyoti Mukhopadhyay, Materials Science and Engineering

- Council Member, Indian Institute of Metal (IIM)
- Member, Non-ferrous Division of IIM

Prof K V V Murthy, Electrical Engineering

- Member, Governing Council, and Academic Council, NMAM Institute of Technology, Nitte, Karnataka
- External examiner for PhD thesis at NMAM Institute Technology, Nitte, Udipi and NMIMS, Mumbai

Prof D V Pai, Mathematics

- Chairman, Programme Advisory Committee - Mathematical Sciences (PAC-MS), DST since September 2012
- Participated as a member in the 3rd Meeting of Project Management and Monitoring

Committee (PMMC), DST for Centre for Interdisciplinary Mathematical Sciences (CIMS) at BHU, Varanasi

- Member, Committee for Academic Review of Department of Mathematics, IIT Kharagpur, Nov 2012 - Feb 2013
- Associate Editor, Asian European Journal of Mathematics, World Scientific Publishers, London and Singapore
- Reviewer, MR, Mathematics Reviews, American Mathematical Society

Prof Rosa Maria Perez, Social Sciences

- Counselor to the Minister for Education and Science, Scientific Council for the Social Sciences and the Humanities (Anthropology), Portugal
- Member, Executive Board of European Association for South Asian Studies
- Board of Advisers, South Asia Democratic Forum (EU)
- Expert panel, European Network for Academic Research on India, European Commission
- Reviewer, European Science Foundation
- Member, Steering Committee,

Instituto Universitario Europeo, Firenze

- Editorial Board of Diaspora, JNU, India; and Oriente, Portugal
- Reviewer, Diaspora, Singapore; Intersecções, Brazil; and Portuguese Studies, UK

Prof Naran M Pindoriya, Electrical Engineering

- Reviewer, IEEE Transactions on Power Systems
- Reviewer, IEEE Transactions on Industrial Electronics

Prof Krishna Prasad, Computer Science and Engineering

- Review editor, Frontiers in Movement Science & Sport Psychology, Frontiers in Decision Neuroscience
- Reviewer, Progress in Brain Research, Journal of Economic Psychology, Psychological studies
- Nominated Board of Studies Member, Computer Science & Information Technology, Nirma University, Ahmedabad
- Member, Programme Committee, 2nd International Conference on Intelligent Interactive Technologies and Multimedia (IITM-2013), IIIT



Prof Krishna Prasad



Prof Arnapurna Rath



Prof Tannistha Samanta



Prof G K Sharma



Prof Sudhanshu S



Prof Babji Srinivasan



Prof Malavika S



Prof Prachi Thareja



Prof Vijay T



Prof Jagmohan Tyagi

Allahabad, March 9-11, 2013

- Reviewer, Programme Committee Member, Gandhian Young Technological Innovation Award 2013

Prof Arnapurna Rath, Humanities

- External examiner, MPhil, English and Foreign Languages University, Hyderabad, Oct 2012
- External manuscript reviewer, English and Foreign Languages University, Hyderabad, July 2012

Prof Tannistha Samanta, Social Sciences

- Reviewer, Graduate Student Paper Award Committee, Gerontological Society of America (2013)
- Reviewer, conference abstracts, Gerontological Society of America (2012)
- Co-convener, Aging in Asia Interest Group, Gerontological Society of America

Prof G K Sharma, Mechanical Engineering

- Member, BoG, and Building and Works Committee IIITDM, Jabalpur

Prof Sudhanshu Sharma, Chemistry

- Reviewer, Materials Research Bulletin; RSC advances; and J. American Ceramic Society
- Member, PhD student committee, Pandit Deendayal Petroleum University, Gandhinagar
- Expert, desalination experiment at Institute of Plasma Research, Gandhinagar
- External member, Board of Studies (Chemistry), PDPU

Prof Babji Srinivasan, Chemical and Electrical Engineering

- Reviewer, Computers and Chemical Engineering Journal
- Reviewer, NCEVT-2013 held at Parur, Gujarat

Prof Malavika Subramanyam, Social Sciences

- Reviewer, Nicotine and Tobacco Research
- Reviewer, Public Library of Science ONE
- Reviewer, Sociological Forum
- Reviewer, Social Science & Medicine

Prof Prachi Thareja, Chemical Engineering

- Reviewer, Colloids and Surfaces A: Physicochemical and Engineering Aspects
- Reviewer, Rheologica Acta

Prof Vijay Thiruvankatam, Physics and Biological Engineering

- Invited for selection of CBSE School Teachers at Hill Woods School, Gandhinagar

Prof Jagmohan Tyagi, Mathematics

- Reviewer, Articles on Mathematical Reviews

Academic Lectures by Faculty

In keeping with its goal of promoting a vibrant academic culture, the institute encourages its faculty to deliver academic lectures on cutting-edge research in India and abroad. The lectures delivered by various faculty members are as follows:

- **Prof Amit Arora** spoke about *Welding defects* at the Workshop on Metallurgy & Welding for Engineers held in Ahmedabad on Jan 5, 2013.
- **Prof Atul Bhargav** gave a presentation at the *Indo-US Interactive Power and Energy Meeting* on Hybrid Electrical Power Systems 'HELPS' at the Naval Materials Research Laboratory, Ambarnath, Maharashtra during Oct 18-19, 2012.
- **Prof Murali Damodaran** delivered a lecture on *Computation of low Reynolds number flexible flapping wing aerodynamics*, at the Computational Research Laboratory Colloquium Series on High Performance Computing, TATA-Computational Research Laboratory (CRL), Pune, April 3, 2012. He gave another talk on *High-fidelity computational engineering* at TIFR Centre for Applicable Mathematics held in Bangalore on Oct 31, 2012; and an invited guest lecture CFD for Thermal transport, Nirma University, March 2013.
- **Mr Michel Danino**, Independent scholar of Indian civilization, delivered lectures on *Ethos and values in ancient Indian architecture and design*, PSG Institute of Management, Coimbatore, Dec 4, 2012; *India's ecological traditions and the current environmental crisis*, Prasthutha, IISc Bangalore, Dec 8, 2012; *An experiment in joint forest management in the Nilgiris*, Indian Biodiversity Congress 2012, Bangalore, Dec 9, 2012; *The Indus civilization and the Sarasvati river*, Noida, Jan 4, 2013; and *Highlights for a timeline of Ayodhya*, C P Ramaswami Aiyar Foundation, Chennai, Feb 1, 2013.
- **Prof Pratyush Dayal** gave invited lectures on *Self-oscillating polymer gels that move: Negative-phototaxis and Auto-chemotaxis*, Navyug Science College, Surat, Jan 2, 2013; and *Negative-phototaxis and Auto-chemotaxis in Self-oscillating polymer gels*, Kachchh University, March 22, 2013.
- **Prof Raghu Echempati** gave a lecture on *Applications of linear and nonlinear finite elements analysis and Teaching methods* at Gayatri Vidya Parishad College of Engineering, Visakhapatnam, Feb 25, 2013, at the JNTU, Kakinada on March 1, 2013 and at IIT Guwahati during March 11-12, 2013.
- **Prof Sriram Kanvah Gundimeda** gave a talk on *Aspects of nanotechnology and genetic engineering* at the Department of Biochemistry, Saurashtra University, Rajkot on Nov 27, 2012.
- **Prof Iti Gupta** gave a talk on *Mono-functionalized N-confused porphyrins* at a mini symposium on Synthetic Chemistry and Functionalization Reactions of Porphyrin on July 3, 2012. She also chaired a contributed oral session under the theme of *Synthetic Chemistry and Functionalization Reactions of Porphyrin* in South Korea (Jeju Island) on July 5, 2012.
- **Prof Sharad Gupta** spoke on *Protein misfolding in neurodegenerative disorders* at IIT Madras on Nov 5, 2012.
- **Prof Sudhir K Jain** was the keynote speaker for the 15th World Conference on Earthquake Engineering in Lisbon where he gave a talk on *The road to seismic safety with particular reference to the developing countries*, Sept 24-28, 2012. He delivered a talk *Earthquake risk profile risk reduction & technical capacity in the EAS member countries* in

- the EAS- India Workshop- 2012 at New Delhi, Nov 8, 2012; delivered 33rd ISET Annual Lecture on *Journey to seismic safety in India* on invitation of the Indian Society of Earthquake Technology (ISET), New Delhi, March 9, 2013.
- **Prof Kabeer Jasuja** spoke on *World of single atom thick nanomaterials*, National Seminar on Nanotechnology: Today & Tomorrow at Kachchh University on March 22, 2013.
 - **Prof Sivapriya Kirubakaran** gave an invited lecture on *A possible cure for an infectious (waterborne) pathogen* at the National Seminar on Recent Advances in Drug Discovery 2013 (RADD-2013) organized by the Department of Pharmacy, Nirma University, Gujarat on March 23, 2013.
 - **Prof Rita Kothari** gave a talk on *Sindhi identity: past and present*, Jai Hind College, Mumbai on Dec 1, 2012; invited lecture on *Names are for other people's languages* at Asian Translation tradition Conference, Ajman University, UAE, Nov 27-28, 2012; and was the Speaker at Chutnefying English, Literati, IIT Delhi, Oct 2012.
 - **Prof Naraparaju Kishore Kumar** gave a talk on *Tensor chain approximation* at the Max-Planck Institute for Mathematics in the Sciences, Leipzig, Germany on June 28, 2012. He was the keynote speaker at *International Conference on Mathematics and Information Technology* held in Chennai on March 15, 2013.
 - **Prof N R Ladhawala** gave a lecture on *Convex functions* at Sardar Patel University, Vallabh Vidyanagar, Dec 6, 2012.
 - **Prof Abhijit Mishra** gave a talk in the young scientist session at the *International Conference on Design of Biomaterials* held at IISc Bangalore during Dec 9-11, 2012.
 - **Prof Nihar Mohapatra** delivered a lecture on *Advanced CMOS technologies for high performance switching circuits and microprocessors*, NIT Surat, Dec 19-21, 2012. He gave another talk on *Advanced CMOS technologies for high performance/low power switching circuits* at SAC, ISRO, March 1, 2013.
 - **Prof Jyoti Mukhopadhyay** delivered a keynote lecture *Challenges and opportunities with regard to environmental issues in non-ferrous sector with special reference to aluminium* held at the Indian Institute of Metal, NMD-ATM 2012, Jamshedpur on Nov 19, 2012.
 - **Prof K V V Murthy** delivered four lectures on *Insights to Transforms* as a part of Faculty Development Programme at the MGI Engineering Institutions, Nagpur during Feb 1-2, 2013.
 - **Prof D V Pai** delivered a compact lecture course on *Multivariable calculus and optimization* at the SERC School 2012 held at the Centre for Mathematical Sciences (CMS), Pala, Kerala during April 23-25, 2012. As the chief guest he delivered lectures titled *On well-posedness and regularization of minimization problems and Viscosity solutions in variational analysis* at the Advanced Training Programme on Nonlinear Functional Analysis and its Applications, DST centre CIMS, BHU, Varanasi during March 4-5, 2013.
 - **Prof Rosa Maria Perez** was the keynote speaker for Goa: Passado e Presente, Lisboa, Universidade Católica where she gave a talk on *Chora o Saranguí. Dança, Representações e Poder nos Templos Hindus de Goa*, April



2012; for Portuguese and Postcolonial Goa: Literature, Culture and Society, Lisboa, Faculdade de Letras where she gave a talk on *The orientals of the 'Orientals'*, May 2012; and for Narrating the Indian Ocean: Mappings and Itineraries, International Summer Course, Braga where she gave a talk on *Incredible India: The European consumption of Indian culture*, June 2012.

- **Prof Naran M Pindoriya** delivered a lecture on *Recent trends in electrical power systems* at the Institute of Diploma Studies, Nirma University, Ahmedabad on May 21-June 1, 2012. He also gave

lectures on *Power generation and trading in India* as part of a five-day short-term training program on Operation and Control of Emerging Power Systems, CHARUSAT, Gujarat organized March 11-15, 2013.

- **Prof Krishna Prasad** gave a talk titled *Computational methods in neuroimaging* at CSE track, NUiCONE 2012 organized by Nirma University, Ahmedabad on Dec 6, 2012. Prof Prasad was the plenary speaker, *Application of computational techniques in neuro-imaging*, IEEE International Conference on Intelligent Systems & Signal Processing, GH Patel College of Engineering and Technology,

Vallabh Vidyanagar on March 2013.

- **Prof Arnapurna Rath** spoke on the topic *In quest of the knots: revisiting chronotopic crossroads* at the Physical Research Laboratory (PRL), Ahmedabad on Sept 27, 2012. She also spoke on *Who defines my space? Gender questions in the neo-urbanscape* at Muncipalika-2013, the 11th International Conference on Good Urban Governance for Safe, Healthy, Green, Inclusive and Smart Cities held in New Delhi during March 13, 2013.
- **Prof Srinivas Reddy** gave a lecture on *Giver of the worn garland: Krishnadevaraya's*

Amuktamalyada on a panel titled Translation as Recovery, Hyderabad Literary Festival during Jan 18-20, 2013.

- **Prof Ajanta Sachan** gave a talk on *Material testing* at the Teachers Training Program on Finite Element Method: Constitutive Modelling and Applications in Civil Engineering at L D College of Engineering, Ahmedabad during June 26-29, 2012.
- **Prof Tannistha Samanta** gave a talk on *Living realities of India's elderly*, supported by Center for Development Studies at Trivadrur during Oct 20-21, 2012.
- **Prof Sudipta Sarkar** spoke on *Black hole membrane paradigm*, at the Physical Research Laboratory, Ahmedabad on Jan 24, 2013. He also had a plenary talk on *Black hole thermodynamics: beyond general relativity* at the 27th IAGRG meeting, Srinagar, Uttarakhand on March 2013.
- **Prof Anand Sengupta** gave lectures at the *BITS-IUCAA workshop on Gravitational*, BITS-Pilani Goa campus in Dec 2012. He also spoke on *Listening to the universe: the search for astrophysical gravitational waves* at the St Xavier's College,

Ahmedabad and Institute of Plasma Research (IPR) during Jan 28-31, 2013.

- **Prof Malavika Subramanyam** gave a talk on *Public health interventions: applying a social epidemiological perspective* at the International Symposium on Evidence-based Public Health Interventions in Low and Middle Income Countries held at Manipal University, Manipal, Karnataka on Nov 7, 2012.
- **Prof Prachi Thareja** spoke on *Rheology, microstructure and stability of crystallizing fatty acid pastes*, NCL Pune, Aug 16, 2012. She also gave another lecture titled *Correlating rheology and microstructure to stability of crystallizing fatty acid pastes*, at Vyome Biosciences on Oct 8, 2012.

Other Faculty Activities

- **Prof Dhiman Basu** was nominated by the Ministry of Earth Sciences (MoES) to attend the *International Training Programme for Seismic Design of Structures 2012* hosted by National Center for Research on Earthquake Engineering sponsored by National Science Council, Taiwan during Oct 29-Nov 2, 2012.
- **Prof Arup Lal Chakraborty**

hosted **Simon Fischer** from the University of Dresden, Germany who spent three months as a summer research intern as part of the *DAAD Research Internships programme* (RISE). During his stay, Simon worked on using tunable diode laser spectroscopy to monitor the formation of methane and carbon dioxide during biodegradation of waste food.

- **Prof Murali Damodaran** was invited to a brain-storming session on Nov 24, 2012 on the curricular and other aspects of a new undergraduate level programme leading to a BTech degree in computational science to be launched by DAIICT, Gandhinagar. He also participated in a panel discussion at the *Academic Track Event*, STAR-India 2012 conference organized by CD-Adapco (India), Bangalore during Nov 1-2, 2012.
- **Prof Pratyush Dayal**, along with his collaborators from University of Pittsburgh (Prof A C Balazs and Dr O Kuksenok), have demonstrated that it is possible to re-assemble synthetic systems by computational modeling. In their recent publication in the Proceedings of the National

Academy of Sciences, the authors demonstrate that Belousov-Zhabotinsky (BZ) gels can assemble and re-assemble through interplay between chemical communication and light irradiation. The paper not only reveals a novel “life-like” behavior for synthetic systems, but also provides the mechanism to control it.

- **Prof Sharad Gupta** attended the DST-sponsored workshop (as part of the IRHPA programme) on *Advanced Materials and Delivery Devices* held at IIT Bombay during Feb 25-26, 2013.
- **Prof Rita Kothari** was on the *Economist-Crossword Award Jury* for Indian fiction in English translation at the NCPA, Mumbai on Oct 17, 2012. She was also an invited speaker at the *Goa Arts and Literary Festival* where she anchored a panel on *Finding a Voice: Language Battles in India* and served as a panelist on *Dilemmas of Translation* during Dec 13-17, 2012. Prof Kothari is a nominated member of the selection committee for junior and senior Arts Fellowships, Ministry of Culture, Government of India. She is also a member of the editorial board of *Interventions*, Routledge Journal and a member of the

advisory board for the series *Dalit Literatures, In, Out and Beyond* ed Judith Misrahi-Barak and Joshil Abraham, Presses Universitaires de la Mediterranee.

- **Dr T S Kumbar**, the head librarian of IITGN, participated in the 33rd *Annual International Association of Technology University Libraries (IATUL)* conference held at NTU Singapore.
- **Prof Sharmita Lahiri** chaired a session at the International Conference on *Disnarration: The Road Not Taken* held at IIT Bombay during March 1-2, 2013.
- **Prof Uttama Lahiri's** research work has been acknowledged by the *Simons Foundation Autism Research Initiative (SFARI)*, which cited two of her recent publications in the *IEEE Transactions of Neural Systems Rehabilitation Engineering (TNSRE)*. The report recognized the research focus on teaching social conversation skills by using an adaptive gaze-sensitive intelligent virtual-reality based platform to children with Autism Spectrum Disorder (ASD).
- **Prof S P Mehrotra** attended the *World Resources Forum-2012* as a member of Indian delegation nominated by Indian National

Academy of Engineers held in Beijing, China during Oct 21-23, 2012. He also attended the International Mineral Processing Congress (IMPC-2012) as one of the core members of the organizing committee and the co-chair of the Technical Committee of IMPC-2012. He also chaired the IMPC special session on Human Resource Development during Sept 24-28, 2012.

- **Prof Jyoti Mukhopadhyay** as one of the Task Force Member completed a Generic Report on *Non Ferrous Metals Resources in India*. The report was prepared for the Indian Institute of Metals and the same was submitted to the Ministry of Mines, Govt of India.
- **Prof Rosa Maria Perez** was a convener at the 22nd *Conference on South Asian Studies*, ISCTE-Lisbon University Institute, July 2012.
- **Prof Tannistha Samanta** chaired the 3rd *FPM Research Colloquium* at MICA, Ahmedabad during Oct 12, 2012. She also participated at the United Nations Population Fund (UNFPA) and Planning Commission of India co-sponsored policy meeting on *Inclusive Growth: Opportunities for the Elderly* held in New Delhi



during Nov 19-20, 2012. In addition, she also attended a workshop on *Migration & Development*, Gujarat Institute of Development Research (GIDR), Ahmedabad during Nov 23, 2012.

- **Prof Anand Sengupta** was invited to be member of the *Scientific Organizing Committee (SOC)* of the 27th meeting of the Indian Association of General Relativity and Gravity (IAGRG), March 2013. Prof Sengupta signed the 2012-13 memorandum of understanding (MoU) between IndIGO and LSC as the principal investigator of the IndIGO group. He was invited by Cardiff University for a India-UK Workshop on Gravitational

Waves in Cardiff, Feb 19-22, 2013 and by the LSC Council to be part of a committee on LSC Conferencing technologies. He also participated in the *IndIGO Data Analysis Camp*, IUCAA, Pune, July 1-14, 2012 and the LSC-Virgo Conference on *Gravitational Waves by Sapienza*, University of Rome, Sep 2012.

- **Prof Sudhanshu Sharma** attended an *International Conference on Materials Chemistry (ISMC-2012)* at the Bhabha Atomic Research Institute during Dec 11-15, 2012.
- **Prof Babji Srinivasan** was invited for selection of CBSE School Teachers at Hillwoods School, Gandhinagar.

- **Prof Prachi Thareja** attended the DST-sponsored workshop on *Advanced Materials and Delivery Devices*, IIT Bombay during Feb 25-26, 2013, and the Gujarat government sponsored workshop on *Micelle Dynamics, Crystallization and Solubilization*, Shah Schulman Centre of Surface Science and Nanotechnology in Nadiad on March 12, 2013.
- **Prof JagmohanTyagi** attended a national conference on *Evolution Equations: Theory, Methods and Applications (NCEETMA-2012)*, IIT Kanpur during Dec 7-8, 2012.

Publications

The faculty of IITGN is encouraged to present their research for peer-review through publication in reputed journals and conference proceedings as well as publication of books, book chapters and monographs. These activities promote a culture of academic rigor and research focus, and give the faculty important feedback on their work, and enhance the visibility of the institute in the national and international academic arena. The following is a list of publications by faculty at IITGN during 2012-13:

Books

1. **Kothari R**, *Memories and Movements: Borders and Communities in Banni, Kutch (Gujarat)*, New Delhi, IN: Orient Blackswan, 2013, ISBN: 9788125050490
2. Mekavana Y and **Kothari R**, *Angaliyat: The Stepchild*. Rev, New Delhi, IN: Oxford University Press, 2013 (translated from Gujarati), ISBN: 9780198090304

Books Edited

1. Arora J, Gupta P, **Kumbar T S**, Patel Y, Vijaykumar J K and Mahesh G, (Eds) *Library Vision 2020: Moving Towards the Future*, Proceedings of the International CALIBER 2013 Gandhinagar, IN: INFLIBNET, March 2013
2. H Anil K and **Kumbar T S**, (Eds) *Strategies for Managing Libraries in the Future*. Ahmedabad, IN: Indian Institute of Management Ahmedabad, Aug 2012, ISBN: 9788192080000

Book Chapters

1. **Kumar M*** and Gayen K, *Biobutanol: The future of biofuel*, in Biomass Conversion: The Interface of Biotechnology, Chemistry and

Materials Science, Baskar C, Baskar S and Dhillon R S (eds), New York, US: Springer, doi: 10.1007/978-3-642-28418-2, 2012, ch 7, pp 221-236, ISBN: 9783642284175

2. **Mishra V**, *Food security implications of climate variability and climate change in Climate Vulnerability: Understanding and Addressing Threats to Essential*, Amsterdam, NL: Elsevier-Academic Press, doi: <http://dx.doi.org/10.1016/B978-0-12-384703-4.00223-9>, 2013, ch 12, pp 117-128, ISBN: 9780123847041

3. **Miyapuram K P** and Pammi V S C, *Understanding decision neuroscience: A multidisciplinary perspective and neural substrates in Decision Making: Neural and Behavioural Approaches*, vol 202, Amsterdam, NL: Elsevier doi: <http://dx.doi.org/10.1016/B978-0-444-62604-2.00014-9>, Feb 2013, ch 14, pp 239-266, ISBN: 9780444626042

4. **Mukherjee S*** and Srinivasan N, *Attention in preferential choice* in Progress in Brain Research, vol 202, Amsterdam, NL: Elsevier, doi:

<http://dx.doi.org/10.1016/B978-0-444-62604-2.00007-1>, Feb 2013, ch 7, pp 117-134, ISBN: 9780444626042

5. **Pai D**, *Multivariable calculus and optimization* in Publication No 43 SERC SCHOOL NOTES 2012 on Multivariable and Matrix Variable Calculus and Applications: Optimization, Kerala, IN: Centre for Mathematical Sciences, 2012, ch 5, pp 123-174

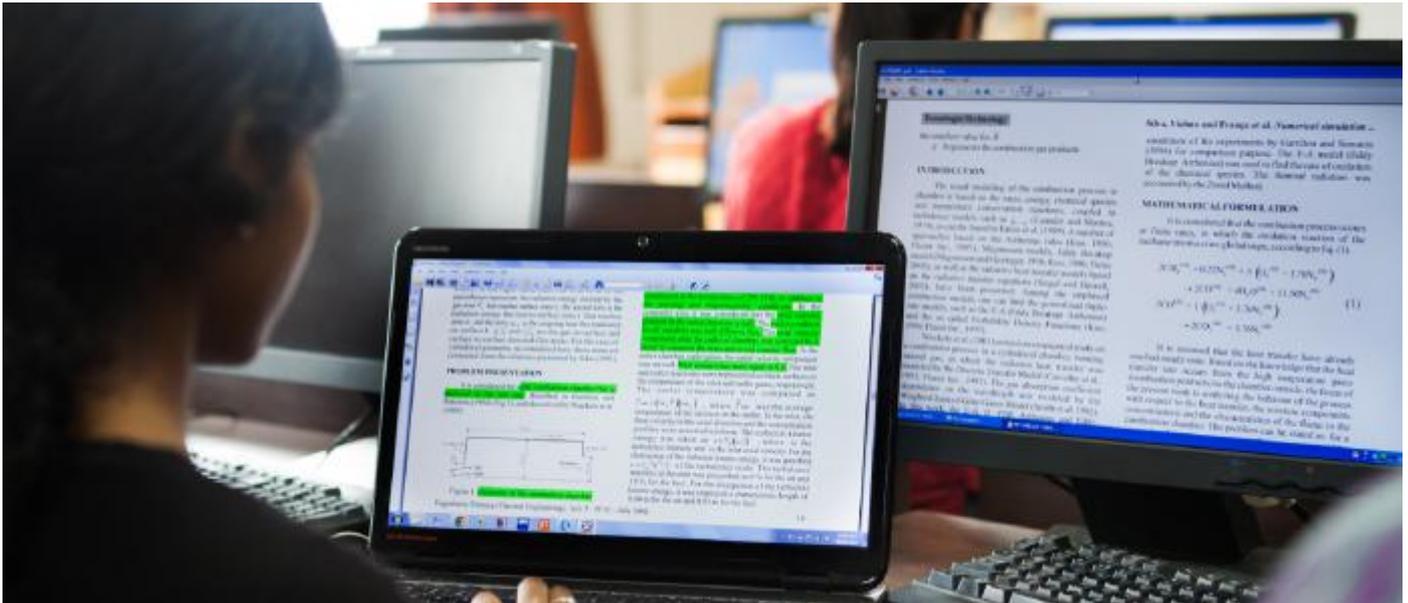
Technical Reports

1. **Basu D**, Whittaker A S and Constantinou M C, *Characterizing the rotational components of earthquake ground motion*, Multidisciplinary Center for Earthquake Engineering Research, New York, Tech Rep MCEER-12-0005, pp 378, June 15, 2012

Journal Papers

Papers Published in Refereed Journals

1. Anker N and **Palanthandalam-Madapusi H**, *Letter to editors - Solving for cantilever equilibria as initial value problems*, Journal of Mechanics in Medicine and Biology,



- doi:10.1142/S0219519413200017, vol 13, no 1, pp 1-4, Feb 2013
2. Babak S and **Sengupta A** et al, *Searching for gravitational waves from binary coalescence*, Physical Review D, doi: 10.1103/PhysRevD.87.024033, vol 87, no 2, pp 024033(18), Jan 2013
 3. Bade P D, **Kotu S P*** and Rathore A S, *Optimization of a refolding step for a therapeutic fusion protein in the quality by design (QbD) paradigm*, Journal of Separation Science, doi: 10.1002/jssc.201200476, vol 35, no 22, pp 3160-3169, Nov 2012
 4. **Basu D**, Whittaker A S and Constantinou M C, *Estimating rotational components of ground motion using data recorded at a single station*, Journal of Engineering Mechanics, doi: 10.1061/(ASCE)EM.1943-7889.0000408, vol 138, no 9, pp 1141-1156, Sept 2012
 5. **Basu D**, Whittaker A S and Constantinou M C, *Extracting rotational components of earthquake ground motion using data recorded at multiple stations*, Earthquake Engineering and Structural Dynamics, doi: 10.1002/eqe.2233, vol 42, no 3, pp 451-468, March 2013
 6. Bekele E T, **Lahiri U**, Swanson A R, Crittendon J A, Warren Z E and Sarkar N, *A step towards developing adaptive robot-mediated intervention architecture (ARIA) for children with autism*, IEEE Transactions on Neural Systems and Rehabilitation Engineering, doi: 10.1109/TNSRE.2012.2230188, vol 21, no 2, pp

- 289-299, March 2013
7. **Dayal P**, Kuksenok O and Balazs A C, *Reconfigurable assemblies of active autochemotactic gels*, Proceedings of the National Academy of Sciences (PNAS), doi: <http://dx.doi.org/10.1073/pnas.1213432110>, vol 110, no 2, pp 431-436, Jan 2013
 8. Derk A R, Li B, **Sharma S**, Moore G M, McFarland E W and Metiu H, *Methane oxidation by lanthanum oxide doped with Cu, Zn, Mg, Fe, Nb, Ti, Zr, or Ta: The connection between the activation energy and the energy of oxygen-vacancy formation*, Catalysis Letters, doi: 10.1007/s10562-013-0985-7, vol 143, no 5, pp 406-410, May 2013
 9. Frans C, Istanbuluoglu E, **Mishra V**, Arriola F M and Lettenmaier D P, *Are climatic or land cover changes the dominant cause of runoff trends in the Upper Mississippi River Basin?*, Geophysical Research Letters, doi: 10.1002/grl.50262, vol 40, no 6, pp 1104-1110, March 2013
 10. **Ghatage S V***, Sathec M J, Doroodchic E, Joshia J B and Evansc G M, *Effect of turbulence on particle and bubble slip velocity*, Chemical Engineering Science, doi: <http://dx.doi.org/10.1016/j.ces.2013.03.031>, March 2013
 11. **Ghoroi C**, Gurumurthy L, McDaniel D J, Jallo L J and Dave R N, *Multi-faceted characterization of pharmaceutical powders to discern the influence of surface modification*, Powder Technology, doi: <http://dx.doi.org/10.1016/j.powtec.2012.05.039>, vol 236, pp 63-74, Feb 2013
 12. **Goyal Y***, **Kumar M*** and Gayen K, *Metabolic engineering for enhanced hydrogen production: A review*, Canadian Journal of Microbiology, doi: 10.1139/cjm-2012-0494, Nov 2012
 13. Guduru A, Northrop P W C, **Jain S***, Crothers A C, Marchant T R and Subramanian V R, *Analytical solution for electrolyte concentration distribution in lithium-ion batteries*, Journal of Applied Electrochemistry, doi: 10.1007/s10800-012-0394-4, vol 42, no 4, pp 189-199, April 2012
 14. Han Xi, **Ghoroi C** and Dave R, *Pharmaceutical nanotechnology: Dry coating of micronized API powders for improved dissolution of directly compacted tablets with high drug loading*, International Journal of Pharmaceutics, doi: <http://dx.doi.org/10.1016/j.ijpharm.2012.08.004>, vol 442, no 1-2, pp 74-85, Feb 2013
 15. Hinkle A R, Goyal S and **Palanthandalam-Madapusi H**, *Constitutive-law modeling of microfilaments from their discrete-structure simulations: A method based on an inverse approach applied to a static rod model*, Journal of Applied Mechanics, doi: 10.1115/1.4006449, vol 79, no 5, pp 051005 (7), Sept 2012
 16. Kuksenok O, **Dayal P**, Bhattacharya A et al, *Chemo-responsive self-oscillating gels that undergo biomimetic communication*, Chemical Society Review, doi: 10.1039/C3CS35497K, Feb 2013
 17. Kumar K A, Chattaraj R, Dhupal U, Mukhopadhyay M,

- Vinjamur M and **Dalvi S V**, *Modeling of precipitation of ultra-fine particles by pressure reduction over CO₂-expanded liquids*, Journal of Supercritical Fluids, doi: <http://dx.doi.org/10.1016/j.supflu.2013.03.009>, March 2013
18. **Kumar M***, **Goyal Y***; Sarkar A and Gayen K, *Comparative economic assessment of ABE fermentation for cellulosic and non-cellulosic feed stocks*, Applied Energy, doi: <http://dx.doi.org/10.1016/j.apenergy.2011.12.079>, vol 93, pp 193-204, May 2012
 19. **Kumar M***, Gayen K and Saini S, *Role of extracellular cues to trigger the metabolic phase shifting from acidogenesis to solventogenesis in clostridium acetobutylicum*, Bioresource Technology, doi: <http://dx.doi.org/10.1016/j.biortech.2013.03.159>, vol 138, pp 55-62, March 2013
 20. **Lahiri U**, Bekele E, Dohrmann E, Warren Z and Sarkar N, *Design of a virtual reality based adaptive response technology for children with autism*, IEEE Transactions on Neural Systems and Rehabilitation Engineering, doi: <http://dx.doi.org/10.1109/TNSRE.2012.2218618>, vol 21, no 1, pp 55-64, Jan 2013
 21. Mondal G, **Prashant A** and **Jain S K**, *Significance of interface nonlinearity on the seismic response of a well-pier system in cohesionless soil*, Earthquake Spectra, doi: <http://dx.doi.org/10.1193/1.4000074>, vol 28, no 3, pp 1117-1145, Aug 2012
 22. Mukherjee M and **Prashant A**, *SASW analysis through inversion of combined dispersion curves using reliability of data from multiple sensor configurations*, International Journal of Geotechnical Engineering, doi: <http://dx.doi.org/10.1179/1938636212Z.0000000003>, vol 7, no 1, pp 10-20, Jan 2013
 23. **N Kishore Kumar** and G Naga Raju, *Nonconforming least-squares method for elliptic partial differential equations with smooth interfaces*, Journal of Scientific Computing, doi: [10.1007/s10915-011-9572-5](http://dx.doi.org/10.1007/s10915-011-9572-5), vol 53, no 2, pp 295-319, Nov 2012
 24. **Narayanan V** and Govindarajan R, *Secondary instabilities in incompressible axisymmetric boundary layers: Effect of transverse curvature*, Journal of Fluids Engineering, doi: <http://dx.doi.org/doi:10.1115/1.4005767>, vol 134, no 2, pp 024503(4), Feb 2012
 25. Nguyen T D and **Ranganath S**, *Facial expressions in American sign language: Tracking and recognition*, Pattern Recognition, doi: <http://dx.doi.org/10.1016/j.patcog.2011.10.026>, vol 45, no 2, pp 1877-1891, May 2012
 26. **Perez R M**, *Alimentação e codificação social. Mulheres, cozinha e estatuto*, Cadernos Pagu, doi: <http://dx.doi.org/10.1590/S0104-83332012000200008>, no 39, pp 227-249, July-Dec 2012
 27. Rai S, Wasewar K L, Chaddha M J and **Mukhopadhyay J**, *Utilization of red mud for making bricks*, Research Journal of Engineering and Technology, vol 4, no 1, pp 12-14, May 2013

28. **Sachan A**, *Strain localization patterns of cohesive soil with controlled microfabric under cyclic loading using DIA technique*, International Journal of Geotechnical Engineering, doi: 10.3328/IJGE.2012.06.04.467-484, vol 6, no 4, pp 467-484, Oct 2012
29. **Sachan A**, Vikash G and **Prashant A**, *Development of intermediate microfabric in Kaolin clay and its consolidation behaviour*, Geotechnical and Geological Engineering: An International Journal, doi: 10.1007/s10706-012-9557-7, vol 31, no 1, pp 23-34, Feb 2013
30. **Sachan A**, *Effect of intermediate microfabric on shear strength and strain localization response of Kaolin clay under compression and extension loading*, Geotechnical and Geological Engineering: An International Journal, doi: 10.1007/s10706-012-9581-7, vol 31, no 1, pp 213-228, Feb 2013
31. Sarpong K and **Datta B**, *Nucleic acid binding chromophores as efficient indicators of aptamer target interactions*, Journal of Nucleic Acids, doi: 10.1155/2012/247280, vol 2012, no 247280, pp 1-7, Sept 2012
32. Schmidt N W, Tai K P and **Mishra A**, *Arginine in α -defensins: differential effects on bactericidal activity correspond to geometry of membrane curvature generation and peptide-lipid phase behavior*, Journal of Biological Chemistry, doi: 10.1074/jbc.M112.358721, vol 287, no 26, June 2012
33. **Sharma S**, Volosin A and Schmitt M, *Preparation and electrochemical properties of nanoporous transparent antimony-doped tin oxide (ATO) coatings*, Journal of Materials Chemistry A, doi: 10.1039/C2TA00002D, vol 1 no 3, pp 699-706, March 2013
34. Sim C H, Rajmadhan E and **Ranganath S**, *Detecting people in dense crowds*, Machine Vision and Applications, doi: <http://dx.doi.org/10.1007/s00138-010-0280-1>, vol 23, no 2, pp 243-253, March 2012
35. **Subramanyam M**, Diez-Roux A V and Pilsner R J, *Social factors and leukocyte DNA methylation of repetitive sequences: The multi-ethnic study of atherosclerosis*, PLOS ONE, doi: <http://dx.doi.org/10.1371/journal.pone.0054018>, vol 8, no 1, pp e54018, Jan 2013
36. **Thareja P**, Golematis A and Street C, *Influence of surfactants on the rheology and stability of crystallizing fatty acid pastes*, Journal of the American Oil Chemists Society, doi: 10.1007/s11746-012-2161-4, vol 90, no 2, pp 273-283, Feb 2013
37. **Tyagi J**, *A global positive solution of a delay differential equation with indefinite coefficients*, Applied Mathematics Letters, doi: <http://dx.doi.org/10.1016/j.aml.2012.03.019>, vol 25, no 7, pp 1068-1070, July 2012
38. **Tyagi J**, *Generalization of Sturm-Picone theorem for second-order nonlinear differential equations*, Taiwanese Journal of Mathematics, doi: 10.11650/tjm.17.2013.2074,

vol 17, no 1, pp 361-378, Feb 2013

39. **Tyagi J**, *Positive solutions and global bifurcation of strongly coupled elliptic systems*, *Electronic Journal of Differential Equations*, doi: ejde.math.txstate.edu, vol 2013, no 82, pp 1-11, March 2013

40. **Tyagi J**, *On an eigenvalue problem involving singular potential*, *Complex Variables and Elliptic Equations*, doi: <http://dx.doi.org/10.1080/17476933.2011.625093>, vol 58, no 6, pp 865-871, 2013

41. Walke A and **Mohapatra N R**, *Effects of small geometries on the performance of gate first high- κ metal gate NMOS transistors*, *IEEE Transaction on Electron Devices*, doi: <http://dx.doi.org/10.1109/TELED.2012.2208647>, vol 59, no 10, pp 2582-2588, Oct 2012

Conference Papers

Papers in Conference Proceedings

1. **Chandrasekaran S*** and **Ragavan K**, *Sliding DFT assisted instantaneous symmetrical components method for estimating*

reference current to active power filter, 55th IEEE MWSCAS, Boise, USA, doi: 10.1109/MWSCAS.2012.6292233, pp 1168-1171, Aug 5-8, 2012

2. **Chandrasekaran S*** and **Ragavan K**, *Phase locked loop technique based on sliding DFT for single phase grid converter applications*, IEEE International Conference on Power Electronics, Drives and Energy Systems 2012 (PEDES 2012), CPRI, Bangalore, IN, doi: 10.1109/PEDES.2012.6484311, pp 1-4, Dec 16-19, 2012

3. **Jain S***, **Singhal G** and Ryan S, *Improving long term myoelectric decoding, using an adaptive classifier with label correction*, Proceedings of the 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob2012), Rome, IT, June 24-27, 2012

4. **Jain S K** and Pathak S, *Intensity based casualty models: Case study of Bhuj and Latur earthquakes in India*, Proceedings of the 15th World Conference on

Earthquake Engineering, Lisbon, PRT, CD Paper ID 4830, Sept 24-28, 2012

5. **Joshi C D***, **Lahiri U** and Thakor N V, *Classification of gait phases from lower limb EMG: Application to exoskeleton orthosis*, IEEE EMBS Special Topic Conference on Point-of-Care Healthcare Technologies, Bangalore, IN, doi: 10.1109/PHT.2013.6461326, pp 228-231, Jan 16-18, 2013

6. **Joshi K A*** and **Pindoriya N M**, *Impact investigation of rooftop solar PV system: A case study in India*, 3rd IEEE PES Innovative Smart Grid Technologies Europe (ISGT Europe), Berlin, GER, doi: 10.1109/ISGTEurope.2012.6465813, pp 1-8, Oct 14-17, 2012

7. **Kislay P*** and **Ragavan K**, *Analysis of back-EMF wave shaping on performance of PM brushless motor*, Power and Energy Conference at Illinois (PECI), 2013 IEEE, Urbana, IL, USA, doi: 10.1109/PECI.2013.6506046, pp. 125-129, Feb 22-23, 2013

8. **Kumar N***, **Manjaly J** and **Miyapuram K P**, *Role of error*

“ The vision and out-of-the-box thinking of IITGN is very impressive and I am very pleased to be able to help in the growth and success of this wonderful institution. ”

Prof Nikhil Balram
Guest Professor

monitoring mechanisms in attribution of sense of self-agency, 34th Cognitive Science Society Conference, Japan, pp 641-646, Aug 1-4, 2012

9. **Prasad R*** and **Damodaran M**, *Computational modeling of steady and unsteady low speed wing-in-ground effect aerodynamics, AIAA 51st Aerospace Sciences Meeting and Exhibition, Grapevine (Dallas-Fort Worth area), Texas, USA, doi: 10.2514/6.2013-497, Jan 7-10, 2013*
 10. Rai D C, **Jain S K** and Chakrabarti I, *Evaluation of properties of reinforcing bars for seismic design, Proceedings of the 15th World Conference on Earthquake Engineering, Lisbon, PRT, CD Paper ID 3720. Sept 24-28, 2012*
 11. Rai D C, Pradhan T, **Jain S K**, Shawki A and Hicyilmaz K, *Role of masonry in seismic strengthening of newly-built pharmaceutical plant buildings, Proceedings of the 15th World Conference on Earthquake Engineering, Lisbon, PRT, CD Paper ID 3704. Sept 24-28, 2012*
 12. **Rath A** and Mashe M, *Chronotopes in the chromosome: a chronotopic analysis of the Calcutta chromosome, in Dialogues with Bakhtinian Theory, Proceedings of the 13th International Mikhail Bakhtin Conference, Oct 2012*
 13. **Upadhyay A***, **Katre V V*** and **Chakraborty A L**, *Tunable diode laser spectroscopy with electronically controlled background RAM nulling, Proceedings SPIE 8421, OFS2012 22nd International Conference on Optical Fiber Sensors, 84216H, <http://dx.doi.org/10.1117/12.975190>, Oct 4, 2012*
 14. **Upadhyay A*** and **Chakraborty A L**, *Detection of methane at 1650nm and carbon dioxide at 2004nm using tunable diode laser spectroscopy, Proceedings of the International Conference on Fibre Optics and Photonics, OSA Technical Digest (online) (Optical Society of America, 2012), paper T2B.2, <http://dx.doi.org/10.1364/PHOTONICS.2012.T2B.2>, Dec 9-12, 2012, IIT Madras*
- Papers Presented in Conferences**
1. Chavan D S, Mondal G and **Prashant A**, *Permanent displacement of nailed soil slopes subjected to earthquake loading, 15th World Conference on Earthquake Engineering, Lisbon, PRT, Sep 24-28, 2012*
 2. **Damodaran M**, *CFD activities at IIT Gandhinagar, Academic Track Event of STAR-Indian 2012 Conference CD-Adapco, Bangalore, IN, Nov 1-2, 2012*
 3. Goyal S and **Palanthandalam-Madapusi H**, *Modeling thermal fluctuations of bio-filaments with Kirchoff Rods, Asian Conference on Mechanics of Functional Materials, IIT Delhi, IN, Dec 2012*
 4. Han X, Jallo L and **Ghoroi C**, *Using inverse gas chromatography to assess passivation of high surface energy sites of milled pharmaceutical crystals via dry coating of nano-silica, AIChE Annual Meeting, Pittsburgh, PA, US, Oct 28-Nov 2, 2012*
 5. Han X, **Ghoroi C** and Dave R N, *Particle engineering via dry*

- coating of micronized API powders for improved dissolution of directly compacted tablets with high drug loading*, AIChE Annual Meeting, Pittsburgh, PA, USA, Oct 28-Nov 2, 2012
6. Han X, Jallo L and **Ghoroi C**, *Passivation of high surface energy sites of milled ibuprofen crystals via dry coating*, AAPS Annual Meeting and Exposition, McCormick Place, Chicago, USA, Oct 14-18, 2012
7. **Jain A***, **Nyati P***, **Nuwal N***, **Ghoroi C**, **Ansari A*** and Gandhi P D, *UL-IIT Gandhinagar kitchen fire safety system*, International Conference on Suppression, Detection and Signalling Research and Applications (SUPDET 2013), Fire Protection Research Foundation, NFPA, USA, Feb 26-March 1, 2013
8. **Kothari R**, *Caste in a casteless language?: A translation view of Dalit literature*, FINDAS: International Workshop, Tokyo University of Foreign Study, Tokyo, JA, May 12, 2012
9. **Kothari R**, *We know what languages is?*, 4th Conference of the International Association for Translation and Intercultural Studies, Queen's University Belfast, Northern Ireland, UK, July 24-27, 2012
10. **Kothari R**, *Names are for other people's languages*, 5th Asian Translation Traditions Conference (ATT5), Ajman University of Science & Technology, United Arab Emirates, Nov 27-29, 2012
11. Kumar K A, Mukhopadhyay M and **Dalvi S V**, *Precipitation of ultra-fine particles by pressure reduction of gas expanded liquids: Experiments and mathematical modeling*, 10th International Symposium on Supercritical Fluids, San Francisco, CA, April 4, 2012
12. **Kumar M***, Gayen K and **Saini S**, *Role of intra-cellular and extra-cellular cues in triggering the switch from acidogenesis to solventogenesis in clostridium acetobutylicum*, The Energy and Materials Research Conference, Malaga, ES, June 20-22, 2012
13. **Kumar M***, **Goyal Y***, Gayen K and **Saini S**, *Dynamics and control of the clostridium acetobutylicum metabolic network*, Clostridium 12th International Conference on the Genetics, Physiology and Biotechnology of Solvent and Acid-forming Clostridia, Nottingham, UK, Sep 10-12, 2012
14. **Kuriakose S***, Sarkar N and **Lahiri U**, *A step towards an intelligent human computer interaction: physiology-based affect-recognizer*, 4th International Conference on Intelligent Human Computer Interaction (IHCI), Kharagpur, IN, Dec 27-29, 2012
15. **Lahiri S**, *Can a spirit of our own be expressed in the language of the colonizer*, Asian Conference on Literature and Librarianship, Osaka, JP, April 5-8, 2012
16. **Lahiri U**, *Characterization of surgical actions in mastoidectomy*, BioFest: International Bio Conference and Event, Hyderabad, IN, Dec 12-13, 2012
17. Mallick M and **Saini S**, *Targeting metallobeta lactamase: An insight from*

- homology drug modeling and virtual drug design for NDM1*, Molecular Modeling for Drug Design, Surat, IN, 2012
18. **Manjaly J** and **Mukherjee S***, *Critical analysis of dretske's tests for perception and awareness*, 20th Conference on Toward a Science of Consciousness (TSC 2013), Dayalbagh Educational Institute, Dayalbagh, Agra, IN, March 3-9, 2013
19. **Miyapuram K P**, *Computational methods in neuroimaging*, in NUiCONE 2012, 3rd International Conference on Current Trends in Technology, Nirma University, Ahmedabad, IN, Dec 6-8, 2012
20. **Miyapuram K P**, *Beyond blobs: Current trends in functional neuroimaging*, 22nd Annual Convention of National Academy of Psychology, Christ University, Bangalore, IN, Dec 10-12, 2012
21. **Miyapuram K P**, *Application of computational techniques in neuro-imaging*, IEEE International Conference on Intelligent Systems and Signal Processing, GH Patel College of Engineering and Technology, Vallabh Vidyanagar, IN, March 1-2, 2013
22. **Mukherjee S***, **Kumar N*** and **Manjaly J**, *Money modulates attribution of agency*, 20th Conference on Toward a Science of Consciousness (TSC 2013), Dayalbagh Educational Institute, Agra, IN, March 3-9, 2013
23. **Mukherjee S***, Nargunkar M and **Manjaly J**, *The effects of priming money on predictions of life-satisfaction at IITs: Preliminary findings*, National Conference on Positive Behaviour: Perspectives and Applications (NCPBPA-2012), Pondicherry University, IN, Sep 21-22, 2012
24. **Mukherjee S***, **Manjaly J** and **Kumar N***, *Effect of attentional scope and load on monetary donations*, Annual Conference of the Society for Judgment and Decision Making (SJDM), Minneapolis, USA, Nov 16-19, 2012
25. **Mukherjee S***, **Kumar N*** and **Manjaly J**, *For your eyes only: Simply priming money facilitates insight problem solving*, 22nd Annual Convention of National Academy of Psychology India (NAOP), Bangalore, IN, Dec 10-12, 2012
26. **Mukherjee S***, **Kumar N*** and **Manjaly J**, *Consequence of priming money on insight problem solving*, 100th Indian Science Congress at Calcutta University, Kolkata, IN, Jan 3-7, 2013
27. **Mukhopadhyay J**, *Challenges and opportunities with regard to environmental issues in non ferrous sector with special reference to aluminum*, National Metallurgist Day and Annual Technical Meeting 2012, Jamshedpur, IN, Nov 16-19, 2012
28. Nargundkar M, **Manjaly J** and **Mukherjee S***, *Privacy preferences of Indian youth: findings of a preliminary survey*, 22nd Annual Convention of National Academy of Psychology India (NAOP), Christ University, Bangalore, IN, Dec 10-12, 2012
29. **Nyati P***, **Jain A***, **Nuwal N*** and **Ghoroi C**, *Kitchen fire safety system*, *International Conference on Safety: Promoting a Culture of Safety*,

- Ahmedabad, IN, Oct 12-13, 2012
30. **Perez R M** and Siqueira A, *The Empire at the margins: Subaltern voices of Portuguese colonialism in India*, 22nd Conference for South Asian Studies (accepted for publication by Routledge), July 25-28, 2012.
31. **Rajiv A*** and **Palanthandalam-Madapusi H**, *An inverse, model approach for estimating constitutive laws from dynamic planar deformations of bio-filaments*, Asian Conference on Mechanics of Functional Materials, IIT Delhi, IN, Dec 2012
32. **Rath A**, *Imaginary portraits: visualizing Rabindranath through Walter Pater's aesthetic kaleidoscope*, Asian Conference on Arts and Humanities (ACAH) International, Osaka, JP, April 6-8, 2012
33. **Reddy S**, *Poet without a patron: Rebellion and redemption in medieval South India*, 5th Asian Translation Traditions Conference (ATT5), Ajman University of Science & Technology, United Arab Emirates, Nov 27-29, 2012
34. **Reddy S**, *Make it telugu: Legitimizing author, patron & text*, 5th Asian Translation Traditions Conference (ATT5), Ajman University of Science & Technology, United Arab Emirates, Nov 27-29, 2012
35. **Saini S**, *Network architecture and cellular behavior in bacteria*, International Conference on Networks in Biology, Social Science, and Engineering, Bangalore, IN, July 12-14, 2012
36. **Samanta T**, *Living arrangements and health of older adults in India: a multilevel analysis*, 2nd Asian Population Association Meeting, Bangkok, THA, Aug 26-29, 2012
37. Sankar R H and **Agarwal S***, *Behaviour of thin walled cylinders under pulse loading: an experimental and numerical investigation*, 57th Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM), Pune, IN, and Dec 17-20, 2012
38. **Sarkar S**, *Black hole thermodynamics: Beyond general relativity*, IAGRG 27, Srinagar, Uttarakhand, IN, March 7-9, 2013
39. **Sunny M M** and Mühlenen A V, *Conditions of capture: when and why an onset of motion captures attention*, 22nd Annual Convention of the National Academy of Psychology, Bangalore, IN, Dec 10-12, 2012
40. Thakker M, Shah D O and **Ghoroji C**, *Wettability measurement apparatus for porous material using modified washburn method*, International Conference on Nanotechnology - Nanocon 2012, North Carolina A&T State University, USA and Bhartiya Vidyapith, Pune, IN, Oct 18-19, 2012
41. **Thomas P S***, *Museum as metaphor: the politics of an imagined Ahmedabad*, 15th International Conference on Media and Utopia: Imagination, History, Technology, Allahabad, IN, Dec 17-19, 2012
42. **Thomas T***, **Miyapuram K P** and Bapi R S, *Inter-manual transfer of visuo-motor*

sequence learning, 22nd
Annual Convention of the
National Academy of
Psychology (NAOP),
Bangalore, IN, Dec 10-12, 2012

43. **Verma S***, Goyal S and
**Palanthandalam-Madapusi
H**, Simulation based analysis
of constitutive behavior of
microtubules, Asian
Conference on Mechanics of
Functional Materials, IIT
Delhi, IN, Dec 2012

Working Paper

1. **Kothari R**, *Moving words:
Shifting boundaries*, India's
Working, Tokyo University of
Foreign Studies, Tokyo, JP, no
10, Feb 2013

Posters Presented

1. **Gavasane R***, Ardhapurkar P
M and Atrey M D, *Prediction of
thermo-physical properties of
argon at cryogenic conditions
using modified benedict-
webb-rubin equation of state*,
National Symposium of
Cryogenics (NSC-24),
Ahmedabad, IN, Jan 21-24,
2013, poster no 750-128
2. **Gite H B*** and **Thareja P**,
Nano-particles self assembly
in liquid crystals,
Chemference 2012, Bombay,

IN, Dec 10-11, 2012, poster no
27

3. **Kotu S P*** and **Gupta S**, *Search
for a common link between
Alzheimer's and Parkinson's
disease*, BioFest: International
Bio Conference and Event,
Hyderabad, IN, Dec 12-13,
2012, poster no 75
4. **Mukherjee S***, Thakker M and
Thareja P, *Protein-
polysaccharide nano
complexes at air-water
interface*, Chemference 2012,
Bombay, IN, Dec 10-11, 2012,
poster no 1
5. **Popat V*** and **Padhiyar N**,
*Experimental study of
bechamp process for the
reduction of P-nitrotoluene*,
Chemference 2012, Bombay,
IN, Dec 10-11, 2012, poster no
33

Magazine/newspaper Articles

1. **Danino M**, *The lost river*, *The
Pioneer Magazine*, Sunday
edition, Oct 21, 2012
2. **Kothari R**, *Aachhe amaru
potanu sukh*, Chitralkha, (in
Gujarati) vol 52, no 3235, p 39,
April 23, 2012

3. **Kothari R**, *Will English
continue to rule the Indian
tongue*, Forbes India, Jan 5,
2013
4. **Kothari R**, *Of Indian cinema
and mythology: a 100 year
journey*, DNA Ahmedabad, p
4, Feb 25, 2013
5. **Mehta M**, *Make over Modi*,
Indian Express Ahmedabad, p
10, Dec 11, 2012
6. **Mehta M**, *Modi makes a
unique selling proposition*,
Ahmedabad Mirror, p 8, Feb 7,
2013
7. **Rath A**, *Women can safely
stroll in the streets at night*,
India Today, p 57, March 4,
2013
8. **Rath A**, *Catch a gold fish*,
*Fundamentals – IIT Bombay
Alumni Magazine*, Iss No 6, p
87, April 2013

Reviews

1. **Rath A**, *The poet and his
world: Critical essays on
Rabindranath Tagore*, edited
by Mohammad A Quyaum, in
Transnational Literature, vol
4, no 2, May 2012

STUDENT ACTIVITIES

Students are actively encouraged to participate in extra-curricular and co-curricular activities that enrich their overall academic experience and personal development. Students have excelled at such activities throughout the year and continue to initiate new ones.

Co-curricular Activities

Campus Placements

The organizations that recruited students during the first campus placements include Ricoh Innovations, BPCL, Grasim Industries, TCE, Finisar, JCB, Microsoft, Flipkart, Timetooth Technologies, Bank of India, Fluidyn India, Matheson K-Air, Magneti Marelli, Citrix, Fashion & You.com, Hospira Inc, Underwriters Laboratories India Pvt Ltd and DRDO. The Career Development Cell supports the students by arranging interactions with the experts from the industry and other IIT alumni, thereby allowing them to stay updated with the needs of

the job market. Out of a total of 59 students who sought placements, 54 were successful in securing placements to their liking.

Summer Internships

The institute is very proactive in helping students find internships in industries and research institutes in India and abroad. During the summer of 2012, a total of 200 students did their internships in universities, research institutes, PSUs and various industries. Out of these, 66 students went to research institutions such as BARC and ISRO, while 28 students went to foreign universities such as Caltech, Syracuse University and University of Notre Dame. As

many as 106 students spent their summers in industries such as L&T, TATA Power, Reliance Industries, National Instruments and Texas Instruments.

Mathematical Contest in Modeling

Eighteen students from the institute participated in a **Mathematical Contest in Modeling (MCM)**, a worldwide contest in which teams of undergraduates use mathematical modeling to solve real-life problems. The participation is the largest to date from any institute in India. The MCM is organized by the Consortium for Mathematics and its Applications (COMAP), a US-



based non-profit organization, and is held annually during the first week of February.

Conclave on Automotive Technology

Amalthea, the annual technical summit founded in 2010, was organized during Oct 13-14, 2012. The event mainly focused on three sectors namely designing, manufacturing, and entrepreneurship & innovation. The event was inaugurated by Senior IAS Officer **Mr Maheshwar Sahu**, Principal Secretary, Industry and Mines, along with IIT Gandhinagar Director **Prof Sudhir K Jain** and ACMA Director

Mr Vinnie Mehta. Renowned automobile designer **Mr Dilip Chhabria** interacted with the participating students and shared his ideas in the role of engineering in automotive design. Other speakers from the industry included **Mr Tom Chackalackal** (Ford India, Manufacturing), **Mr Nitin Nair** (MD, SIEMENS Automation), and **Mr Joachim Nell** (Head, Continental Tech Center India). Companies like Ford Motors, Siemens,

Continental, DC Motors Pvt Ltd visited IITGN and laid the foundations for future collaborations and setting up state-of-the art laboratories at the institute. The event was organized by **Harsh Gupta**, **Anshul Gupta** and **Shreyans Nahar**.



Conclave on Automotive Technology



Electrical Vehicle Contest

A hundred and fifty students participated in a research contest sponsored by Underwriters Laboratory (UL), Northbrook, USA, and IITGN to develop an electrical vehicle platform with the aim of improving the currently understanding of safety challenges for electrical vehicles in Indian conditions. An external review committee of EV industry experts comprising **Mr Vikram Gulati**, Director, National Automotive Testing and R&D Infrastructure Project, NATRIP, **Mr Mukesh Bhandari**, founder Chairman and CTO, Electrotherm,

Mr Chetan Maini, Chief of Strategy & Technology, Reva-Mahindra Reva and **Dr Pravinray Gandhi**, Director of Corporate Research, UL selected two

winning teams. These teams will spend time developing working prototypes at UL labs in Chicago during the summer of 2013. The members of the two winning teams are:

Team 1: **Madan Taldevkar, Vaibhav Gandhi, Kimaya Kale,** and **Prathamesh Bhat.**

Team 2: **Kishan Suthar, Shubham Gupta, Varun Gupta,** and **Shreyas Vaidya.**

Researchers' Ferret Confab 2012

The **Researchers' Ferret Confab 2012** was organized on April 14, 2012 with a vision of laying out an interdisciplinary platform to share research carried out by IITGN students. There were 16 oral

presentations and 9 poster presentations. The winners in the oral category were **Sudipta Das** and **Payel C Mukherjee**, while **Awaneesh Upadhyay** was the winner in the poster category.

Mechanism Mock-Up Display

The 2009 batch of mechanical engineering students held a

Mechanism Mock-Up Display

Open House on April 16, 2012 to display the gadgets they had built as part of the Kinematics and Dynamics of Machines laboratory course. The focus of this exercise was to identify a task to be simplified by a mechanism, and then to design a mechanism and build a workable model of their mechanism to address a specific problem. Thirty-seven students formed 13 groups and worked on gadgets like stair-climbing wheelchair, compact fried food oil extraction gadget, trash compactor, mechanism for moving shelf stacks, hand-cranked shoe polisher, in-situ sugar cane cutter and juice extractor, baby-bottle washer, luggage-seat integration mechanism, vada oil extraction mechanism, paint brush cleaning mechanism, pomegranate peeler, low-cost dish washer and crash guard for motorbikes.



Mean Mechanics 2012

A **mechatronic model-making workshop-cum-competition** was organized on April 5, 2012 for the first and second year students in which 114 students participated. The winning teams are as follows:

First position: **Arun Singh, Prashant Bahtewara, Adit Bharadwaj, Pradeep Nikhade, Poonam Chand** (2010 batch), and **Nitesh Udhani, Ankit Suchanti, Mohit Bajaj, Saksham Kohli** (2010 batch)

Second position: **Rajesh Patidar, Pankaj Gautam** (2011 batch)

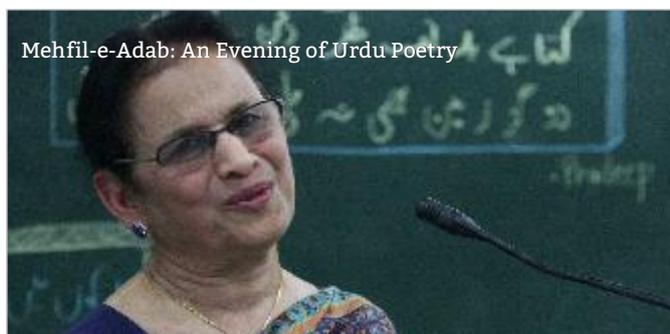
Third position: **Sahil Mehta, Gaurav Mahamuni, G N Laxmi** (2011 batch)

Science Day Observed

On April 1, 2012 IIT Gandhinagar observed Science Day to attract motivated and talented scholars to scientific research and to the PhD programme at the institute in particular. The event was attended by 60 students and 3 faculty members from different universities in the region. The attendees had backgrounds in physics, mathematics and chemistry.

Industry Visits

Prof Raghu Echempati organized two company tours for students on Feb 13, 2013 and March 6, 2013 as part of the Machine Design course. A group of 50 students visited PBL-Elecon Group Company, Vallabh Vidyanagar while 8 students visited the Indo-German Tool Room, Vatva, Ahmedabad. The students received firsthand experience of a variety of gearboxes used in industrial geared motors and a variety of machine tools including plastic injection molding machines.



Mehfil-e-Adab: An Evening of Urdu Poetry

An evening of Urdu poetry held on Feb 6, 2013 marked the end of the half-semester course on Urdu Script and Poetry by **Ms Hamida Banu Chopra** from the University of California, Berkeley who spent time at IITGN as a visiting

professor. A large audience comprising faculty, staff and students was enthralled by the poetry of famous Urdu poets recited by Ms Chopra and her students.

Life Skills Series

- A discussion session on the theme **The MS/PhD Application Process: Know How to Make Your Application Packet the Best** was held on Sept 12, 2012. The speakers for this session were **Prof Malavika Subramanyam, Prof Harish Palanthandalam-Madapusi,**

Prof Sudhanshu Sharma and Prof Shivakumar Jolad. Eighty-five students attended the session. The series is

coordinated by **Prof Sharmita Lahiri.**

- A two-day workshop on **Personality Development** was conducted by **Ms Rashmi Dutt** of Dialog Services for the first year B.Tech students during Oct 20-21, 2012.
- **Job Interviews: How to Nail**

“ IIT Gandhinagar is a dynamic institute with innovative programmes to create a vibrant and life-affirming learning environment for its students. ”

*Prof Suchitra Mathur
Guest Professor*



Them was held on Jan 12, 2013. A group of 4th year students comprising **Ekta Prashnani, Tarkeshwar Singh, Gaurav Dubey, Sauryaprakash Sinha, Mohit Verma, Dhruv Chokshi** and **Shyamal Kishore**, shared their successful job interview experiences with an audience of 60 students.

The session was coordinated by **Dhruv Chokshi** and **Shyamal Kishore**. **Prof Atul Bhargav** was the guest expert at the session.

Extra-curricular Activities

Blithchron 2013

The fifth edition of **Blithchron**, the two-day cultural festival of IIT Gandhinagar, was held during Jan 19-20, 2013. A record 19,000 visitors attended the festival in which contestants from about 30 institutes exhibited an array of



talents. There were more than 20 events including a rock concert, music shows, drama, a fashion show and games. The biggest attraction was the rock concert **Pronites** that featured the indie-rock band **Agnee**, and the event **String Theory** in which various bands from across the state were pitted against each other. The event **BMX (bicycle motocross)** on the second day attracted a large number of spectators as the professionals from Mumbai enthralled the audience with their stunts.

Halla Bol 2013

The 3rd edition of **Halla Bol**, the nightlong intracollege sports



festival, was organized during March 15-24, 2013. The festival comprised 11 entertaining games played over ten days. The traditional rules of the games were given a twist or two to make the games more unpredictable and fun to play and watch. More than **400 matches** attracted **2400 participants** from students, staff and faculty who formed mixed teams. A 50-member core-organizing team and over 40 volunteers worked diligently for the smooth conduct of the games that often extended past midnight. The event was coordinated by **Wasim Khan**, sports secretary and Prashant Patel, a student of chemical engineering.

Jashn-Intracollege Cultural Festival

Jashn 2012, the second intra-college cultural festival was organized during Oct 25-28, 2012. The fun events and competitions such as Screw'em, Jack of all

trades, photography and videography competition saw enthusiastic participation. The core organizing team comprised of **Ankit Suchanti, Nitai Bajaj,**

Mohit Bajaj, Ronak Khandelwal and Eepsit Tiwari.

Summer Camp 2012

The institute organized a four-week summer camp for IITGN students during June 18 through July 14, 2012. The camp comprised numerous activities centered on the theme of design. A total of 20 students as well as faculty and staff participated in technical projects and non-technical activities. The technical projects were coordinated by **Prof Raghu Echempati**. Students and staff enjoyed several non-technical activities that also had design themes. These included a workshop on **People, Markets and Society** that provided invaluable tips and advice on topics ranging from entrepreneurship, market behavior and survey design. The workshop involved sessions by **Prof Tannistha Samanta** (IITGN), **Dr Abhijit Kothari** (Tarun

Electrical Industries) and **Prof Rajneesh Krishna** (MICA, Ahmedabad). The campus fraternity also enjoyed a workshop on **Crafts and Mask-Making** conducted by **Mr Suguresh Sultanpur**, resident artist, MS University, Baroda. The **Incredible India Quiz** was organized as part of the events for the Summer Camp on June 29, 2012. The quiz was won by the team of **Animesh Mishra** (IIT-Roorkee) and **Nikhil Soraba** (NIT-Surathkal). The summer camp was coordinated by **Prof Bhaskar Datta**.

UDAAN- a Musical Evening

A musical evening was held on April 3, 2012 to bid adieu to the graduating pioneer batch of IIT Gandhinagar. The evening started with the opening address by **Prof D V Pai**, who was among the first professors to teach the pioneer batch. The event was attended by around 20 faculty members and their families besides the IITGN students. Some of the guests who took a trip down memory lane and shared their early experiences of life at IITGN were **Prof U A Yajnik**, the first dean of academic and students affairs IITGN, **Prof M R Patel**, principal of VGEC, **Prof Sudhir K Jain**, **Prof**

S L Narayanamurthy, Prof G K Sharma and **Prof D P Roy**. A mellifluous sitar recital by **Prof Srinivas Reddy** set the tone for the evening. This was followed by musical performances by students. The main announcement of the evening regarding the **IITGN Alumni Association** was made by **Vineeth Dasaraju**, ex-general secretary of the Student Gymkhana, and **Ajinkya Kulkarni**, general secretary, Student Gymkhana. The evening concluded with a sumptuous dinner and a group photograph.

Avant Garde: Visual Art Expo-cum-Workshop

IIT Gandhinagar celebrated the joys of colours and art with a three-day Visual Art Expo-cum-Workshop **Avant Garde** during May 1-3, 2012. A cross-section of IITGN family joined hands to learn and create their own works



Avant Garde: Visual Art Expo-cum-Workshop

of art. The workshop was conducted by artist **Mr Suguresh Sultanpur** from Baroda and comprised 22 participants. Segments of the workshop included painting, sketching, and print-making. The expo concluded with a display of the art works and a felicitation ceremony.

An Evening of Hindustani Classical Music

IITGN hosted an evening of Hindustani classical music on Sept 7, 2012 featuring **Prof Srinivas Reddy** on the sitar and **Sapan Anjaria** on the tabla. The artists performed the monsoon Raga Megh among other traditional compositions.

Visit to Lothal

Fifteen IITGN faculty members and eight students took part in a visit to the nearby Harappan port town of Lothal on April 8, 2012.

Mr Michel Danino, guest professor at IITGN, organized the visit and briefed the group on the site's features and importance. The visit to Lothal was intended to familiarize

faculty members and students with the ancient Harappan civilization and Gujarat's major role in early maritime activities in India. Lothal is a small Harappan port town approximately 80 km from Ahmedabad that was excavated between 1955 and 1960.

Web-Design Hackathon

The Coding Club organized a Hackathon on Introductory Web Design on Aug 24, 2012. The event witnessed the participation of more than 100 students. It was conducted by **Balaji Venkatesh, Hoosein Safdari** and **Kartik Saxena**, who are BTech students of electrical engineering.

Technology Vision 2035

As part of the **Technology Vision 2035** exercise, four IITGN students, **Nisarg Shah, Akshay Jain, Rajat Jain**, and **Susmita Purnima Kotu**, represented the Institute at the TIFAC (Technology Information, forecasting and Assessment Council) interaction session with **Dr Anil Kakodkar**, DAE Homi Bhabha Chair Professor and Chairman-TIFAC on Sept 16, 2012 at Delhi.

Reflections

The IITGN Counseling Service organized **Reflections**, an



interactive session with the 4th year BTech students on March 24, 2013. The event involved students sharing the experience of their journey at IITGN with faculty members, the director, dean of academic programmes and dean of student affairs, reflecting on their experience with their batch. The event was coordinated by **Ms Jasbir Thadani**, counselor, IITGN.

Special Occasions

Independence Day Celebrations

In keeping with IITGN tradition, the 66th Independence Day celebrations on Aug 15, 2012 began with the flag hoisting ceremony by the Director **Prof Sudhir K Jain**. On this occasion the director felicitated 75

students who had featured in the Dean's List 2011-12 (semester II). The students were given a copy of the book **Unheard Voices** by Harsh Mander

along with a letter of appreciation. The programme concluded with a cultural performance by the students.

Republic Day Celebrations

The 64th Republic Day celebrations on Jan 26, 2013 began with the faculty, staff and students participating in a **Green Run**. Later **Prof Sudhir K Jain**, the director, unfurled the national flag. The day concluded with a cultural programme by IITGN community.



Reflections

Awards and Recognition



Awards and Recognition

IITGN Annual Sports Awards

At a special awards distribution ceremony organized on April 26, 2012, the following awards were given in different categories on the basis of the performance of students in the academic year 2011-12:

IITGN Annual Sports Awards

Best player of the year:

Bhargav Kumar Thadem

Best upcoming player of the year:

Shivani Rani and Sane Parth Vishwas

Badminton open (singles) champion:

Harsh Paliwal

Badminton open (doubles) champion:

Kehbruce Singh and Purushottam Lal Suman

Inter-departmental championship (boys):

Mechanical Engineering team

Inter-departmental championship (girls):

Chemical Engineering team

Students on Dean's List Felicitated

A hundred and fifty three BTech students made it to the Dean's List (semester I), which recognizes the academic achievement of students with an SPI of 8.5 or more. The students received a

letter of appreciation and a topical book, **Indian Summer** by **Alex Von Tunzelmann**, from the director, Prof Sudhir K Jain.

One hundred and eighteen students featuring on the Dean's List (semester II) were felicitated by **Prof Sudhir K Jain, Prof Brian Brophy** and **Prof Wakankar** with a book, **The Last Lecture** by **Randy Pausch & Jeffrey Zaslow**; and a letter of appreciation.

Further details are available at http://www.iitgn.ac.in/academic_deanlist.htm.

“ UL is very fortunate to develop collaborations with IIT Gandhinagar with a focus on safety. This has helped promote UL Mission to improve safety in India through engaging students, fire engineering curriculum and safety conferences. ”

*Dr Pravinray D Gandhi
Guest Professor*



Keshav G Receives the Gandhian Young Technological Innovation Award

Keshav G Receives the Gandhian Young Technological Innovation Award

Keshav G, a 4th year student of mechanical engineering, received the **Gandhian Young Technological Innovation Award** for designing a machine to make incense sticks. The low-cost hand-driven machine, developed under the mentorship of **Prof Murali Damodaran**, was conceived with the objective to improve the livelihood of the poor women workers in India. The award was given by **Dr R A Mashelkar**, FRS, at IIM Ahmedabad on April 5, 2012 under the category of '**More-for-Less-for-Many**'. The competition, organized by **SRISTI** (Society for Research and Initiatives for Sustainable Technologies and Institutions, Ahmedabad), received over 5,000 entries from students of 45 universities across the country. The best 14 ideas were awarded.

IITGN Student Teams Selected for i-Create Spark-up Idea Fund Grant

The two teams comprising **Gourav Dubey, Abhijith Rajiv and Kaustubh**

Tripude and Yash Shah, Prateek Nyati and Shashank Agarwal, have been selected for support and mentoring under the initial Rs 50,000 Spark-Up Idea Fund Grant organized by the International Centre for Entrepreneurship and Technology (i-Create). The two teams will be mentored by stalwarts from the industry to extend the range of their innovations in their ideas on **motor cycle crash guard, deployable support system and low-cost automatic dish washer for Indian markets** respectively.

National Level Autodesk Student Design Competition

Shashank Agarwal and Dhwani Shukla, both 3rd students of mechanical engineering secured 3rd position at the **National Level Autodesk Student Design Competition** held in Chennai on Oct 20, 2012. They designed a unique electric-powered two-

wheeler, two of which can be joined to become a four-wheeler when needed. They received a cash prize of Rs 60,000 and a trophy.

Student Patents

Local scale, rotation and position-invariant word detection for optical character recognition, India PLW Ref 10010-03668, filed Dec 31, 2012. Inventors: **Sri Kaushik Pavani**, Research Scientist, Ricoh Innovations Pvt Ltd and **Ekta Prashnani**, undergraduate student, electrical engineering, IITGN.

Other Student Achievements

- **Bhaskarjyoti Das and Atharva Patil**, both 3rd Year BTech students, were declared the winners in the competitions named Silhouette and Emotions respectively, in the nationwide photography competition **Darkroom** conducted by Symbiosis Centre for Information Technology (SCIT), Pune on Jan 2013. Bhaskarjyoti Das was also declared the overall grand winner among around 500 entries.
- **Deep Dinesh Kumar**, a 4th year student of mechanical engineering, won the first prize



at the **All India Essay Writing Competition** held at IIIM Charusat. The topic of the essay was Brain Drain, Reverse Brain Drain and Globalization. Out of a total 125 entries, 17 essays have been adjudged as the best essays based on Creativity, Originality of Ideas, content, logical development and language. **Mihika Shah**, a 2nd year student of chemical engineering, stood third for the topic **Corruption, Polity and Indian Economy**.

- The team comprising **Sunil Patidar, Rohit Chouksey** and **Prashant Patel**, all 4th year students of mechanical

engineering, was one of six finalists from among 1,000 teams to present their design of **Overhead Transport System (OHT)** at **Mind Rover 2013**, a national competition organized by Tata Motors. The objective was to propose ideas on future transport solutions for India in personal and commercial sectors.

Sports News

Gully Cricket Tournament

A friendly Gully Cricket Tournament was organized for the entire IITGN community during May 28-30, 2012. A total of 12 teams participated in the

event. The teams BTech2 and BTech3 played the final match on May 30, 2012 with Team BTech2 comprising **Ankur Meena, Mohit Bajaj, Nitesh Udhani, Shivanshu Arora, Akshay Pingale** and **Devendra SinghYadav**, winning the title.

Genesis Cup 2012

The men's basketball team of IITGN won a silver medal at the first ever Genesis Cup held at H L College of Commerce, Ahmedabad on Aug 22, 2012. **Ravi Kumar** was one of the top scorers and won the trophy for the Most Promising Player of the tournament.



State Level Swimming Tournament

Parth Sane Vishwas won two bronze medals in the 50m backstroke and 50m butterfly competitions at the state-level swimming tournament. The event was organized by the Gujarat State Aquatic Association during Sept 8-9, 2012.

Girls Basketball Team Wins Championship Title at Concours 2012

The girls basketball team won the championship trophy at Concours 2012 held on Nov 4, 2012, at DAIICT, Gandhinagar. The performances of **Shubhangi Bansude, Ritu Gavasne, Shivani Rani, Mishita Jaiswal** and **Sanchayni Bagade** were commendable.

Men's Basketball District Championship 2012

The IITGN men's basketball team won the runners-up title at the district championship on Nov 7, 2012 with **Suresh Choudhari** emerging as the top scorer. The men's basketball team secured the 1st rank at the college level and 2nd rank at the senior level in the district of Ahmedabad.

Petro Cup 2013

The men's basketball team defeated PDPU 65-38 to win the **Petro Cup title** for the third year in succession with outstanding

48th Inter-IIT Sports Meet 2012

Students of IITGN performed exceedingly well at the 48th inter-IIT sports meet held at IIT Roorkee. **Shivani Rani** won the gold medal in discus throw (women) event and in the process she set a meet record of 26.49m. She also struck gold in the shot put event. **Umesh Singh** won a silver medal in javeline throw with a fine throw of 45.95m. IITGN secured the 9th position in the general championship category for men's and the 11th position in the women's category.

48th Inter-IIT Aquatics Meet 2012

Parth Sane Vishwas won the gold medal in the 50m butterfly event at the 48th Inter-IIT Aquatics Meet 2012 held at IIT Roorkee, to defend the title he had won in 2011-12. He also won silver medals in 100m backstroke and 100m freestyle and a bronze medal in 50m freestyle. **Animesh Kumawat** won silver medals in 400m freestyle and 1500m freestyle and bronze medals in 200m freestyle and 200m backstroke. The IIT Gandhinagar team secured 4th position among 13 participating IITs.



performances from **Suresh Choudhari** and **Ravi Pal**. In the women's category, **Shivani Rani** won gold medals in discus throw, shot put and javelin throw. In the men's category, **Umesh Singh** won gold medals in discus throw and javelin throw, whereas **Chetan Patil** won silver medal in discus throw and bronze medal in shot put.

Inter-department Table Tennis Championship 2012-13

The electrical engineering team, comprising **Chetas Joshi** (captain), **Ameya Joshi**, **Rajat Choudhary**, **Shubham Ranka**, and **Lingala Thrinath Reddy** won the final match against the chemical engineering team by 3-0 on Feb 7, 2013.

Capital Season League (CSL)

With the joint effort of the sports departments of IIT Gandhinagar, Pandit Deendayal Petroleum University (PDPU) and Gujarat National Law University, the first edition of CSL, featuring volleyball and basketball, was held during March 11-18, 2013. IIT Gandhinagar won the basketball tournament while in volleyball it came a close second to PDPU. IITGN students **Ravi Kumar** and

Endla Naveen Kumar bagged the title of **Player of Tournament** in basketball and volleyball respectively. **Wasim Khan** (sports secretary) and **Aditya Samant** (basketball secretary) facilitated the smooth conduct of CSL.

Other Sports Events

Chetas Joshi, senior undergraduate, secured 3rd position in the **table tennis tournament** at **Khel-Mahakumbh 2012-13**. He won a cash prize of Rs 2,000 and represented Ahmedabad at the inter-district table tennis championship at Rajkot.

Other Student Activities

- A report by PhD student **Payel C Mukherjee**, on **X Theory/Praxis Course** (June 18-July 14, 2012) jointly organized by the Center for Contemporary Theory Baroda and Osmania University Hyderabad has been accepted for publication in the bi-annual Newsletter of the **Forum of Contemporary Theory**.
- **Neeraj Kumar**, a PhD student attended the summer school on "Dynamics of Consciousness" in Poland during July 20 to July 28, 2012 organized by the European Society of Cognitive Psychology.

- **Sumitava Mukherjee**, a PhD student visited University of New South Wales, Sydney, Australia as a visiting research student during Aug 14-29, 2012.
- **Alpana Thorat** and **Debika Choudhury**, research scholars of chemical engineering, and **Pavni Pandya**, an MTech student of civil engineering, participated in the **Women Engineers Leading Global Innovation Symposium**, Bangalore, Aug 29-31. Thirty-five women engineers from India and an equal number from the US attended this symposium.

EXTERNAL RELATIONS

IITGN has been constantly building strong and mutually beneficial relationships with internationally renowned universities, organizations and academic institutions. Several partnerships have been forged in the last year benefitting students and faculty at large.

International MoUs

Organization/Institution	Objective	MoU signing date
University of Massachusetts, Lowell, USA	Cooperation in education and research	07-05-2012
University of Saskatchewan, Saskatoon, Canada	Academic cooperation	01-07-2012
California Institute of Technology (Caltech), Pasadena, USA	Undergraduate student exchanges	04-10-2012
Underwriters Laboratories Inc, Chicago	To support excellence in fire engineering	28-12-2012
University of Saskatchewan, Saskatoon, Canada	To establish a program for academic cooperation in areas of mutual interest	09-01-2013
Columbia Water Centre, Columbia University, New York, USA and Gujarat Ecology Commission, Government of Gujarat (under Vibrant Gujarat Global Investor Summit-13)	To carry out project on environmental monitoring to check natural resources degradation in Gujarat	11-01-2013
Quanser Consulting Inc, Markham, Canada	Academic and research collaboration	11-01-2013
Ricoh Company Ltd, Japan	To support the establishment of the Design and Innovation Centre	28-01-2013
Embassy of France	French language tutor programme	28-02-2013

National MoUs

Organization/Institution	Objective	MoU signing date
Tata Consultancy Services, Chennai	Intensifying academic cooperation	07-05-2012
Central Public Works Department Government of India	Construction of new campus of IIT Gandhinagar	15-05-2012
International Centre for Entrepreneurship and Technology (iCreate), Ahmedabad	To promote entrepreneurship, innovation and technology	21-05-2012
Dhirubhai Ambani Institute of Information and Communication Technology (DAIICT)	To promote and enhance academic interaction and communication	02-07-2012
Cranes Software International Ltd, Bangalore	Teaching/research lab setup	06-07-2012
Cranes Software International Limited, Bangalore	C2000 microcontroller lab setup	06-07-2012
Cranes Software International Limited, Bangalore	Analog teaching lab setup	06-07-2012
Fields of View, Bangalore	Joint research, exchange of researchers	17-10-2012
Industries Commissionerate, Government of Gujarat	To set up a centre of excellence at IIT Gandhinagar	18-10-2012
Institute of Technology, Nirma University, Ahmedabad	To exchange faculty and students, and to collaborate in joint research and various events	09-01-2013
The Maharaja Sayajirao University, Baroda	To exchange faculty and students, and to collaborate in joint research and various events	09-01-2013
Pracsol Health India Pvt Ltd (PHIPL), Kolkata	To promote joint research and development of biomedical information processing/ instruments, healthcare/lifestyle products and security systems	10-01-2013
Centre for Development of Advanced Computing (C-DAC), Bangalore	To promote research and engineering of technologies, architectures, standards and applications in HPC and grid computing	12-02-2013
Xylem Water Solutions India Pvt Ltd, Vadodara	Academic cooperation in areas of mutual interest	27-02-2013

Summer Internships in Foreign Institutions in 2012

Host Institution	Student Name	Discipline
Washington University, St Louis, MO, USA	Shalinee Kavadiya, Akanksha Jagwani	Chemical
University of Saskatchewan, Canada	Mohit Verma	Chemical
University of Wisconsin-Madison, Madison, WI, USA	Susmitha Purnima Kotu	Chemical
National University of Singapore	Chetas Joshi	Electrical
Syracuse University, USA	Shubham Agarwal	Electrical
University of Notre Dame, Notre Dame, Indiana, USA	Shubham Ranka	Electrical
University of Strathclyde, Glasgow, Scotland	Prashant Patel	Mechanical
University of Washington, Seattle, WA, USA	Abhijit Rajiv, Varun Gupta	Mechanical
University of Rhode Island, USA	Shyamal Kishore	Mechanical
California Institute of Technology, Pasadena, USA	Shruti Jain	Chemical
	Jainil Parekh, Pritesh Sankhe, Satyendra Singh Jadaun	Electrical
	Rohit Chouksey, Mohak Patel	Mechanical
Underwriters Laboratories, USA	Divyank Singh, Ravi Teja	Chemical
	U Revanth Venkata Sandeep	Electrical
	Abhilash Patel, Shubham Chauhan	Mechanical

Students Scheduled for Summer Internships in 2013

Institution	Student Name	Discipline
Duke University, USA	Sunil Nair, Balaji Venkatesh, Yash Goyal, Shashank Tyagi	Electrical
Syracuse University, USA	Adit Bhardwaj, Smit Soni	Electrical
University of Saskatchewan, Canada	Mayank Jhalaria	Chemical
University of Notre Dame, Indiana	Hoosein Safdari	Electrical
University of Washington, Seattle, WA	Aishwarya Agarwal Ankita Sharma	Electrical Mechanical
Washington University, St. Louis, MO	Smit Shah	Chemical
California Institute of Technology, Pasadena, USA	Deepti Chopra, Nitesh Udhani, Shivam Tripathi, Kartik Saxena, Nishank Jain, Pamarthi Chandra Kanth	Electrical
	Dhwanil Shukla, Shashank Agarwal	Mechanical
Texas A&M University	Akshay Jain, Pranav Bagaria	Chemical
Purdue University	Nandan Paresh Vora	Chemical
University of California-Merced	Shaliwahan Singh Rathore	Mechanical
Underwriters Laboratories, USA	Kishan Suthar, Shubham Gupta, Kimaya Kale, Vaibhav Gandhi	Electrical
	Shreyas Vaidya, Varun Gupta, Janardan Taldevkar, Prathamesh Bhat.	Mechanical

Students of the 2009 Batch Expected to Pursue Higher Studies Abroad

Name	Institute	Programme	Discipline at IITGN
Ekta Prashnani	University of California, Santa Barbara	MS and PhD (Electrical and Computer Engg)	Electrical
Narendranath Balasubramoni	Cornell University, USA	MS (Electrical and Computer Engg)	Electrical
Susmitha Purnima Kotu	Texas A&M University, College Station	PhD (Chemical Engg)	Chemical
Shruti Jain	University of Texas at Austin	PhD (Chemical Engg)	Chemical
Pratham Shah	Carnegie Mellon University	Master of Product Development	Mechanical
Mohak Patel	Brown University at Providence, USA	PhD (Mechanics of Solid)	Mechanical
Aditi Dighe	Duke University	PhD (Electrical and Computer Engg)	Electrical
Chetas Joshi	Purdue University	MS (Electrical and Computer Engg)	Electrical
Suresh Ramasamy	Carnegie Mellon University	MS (Mechanical Engg)	Mechanical
Abhijith Rajiv	University of Washington, Seattle	MS (Mechanical Engg)	Mechanical
Shalinee Kavadiya	Washington University, St Louis	PhD (Department of Energy, Environmental and Chemical Engg)	Chemical

Students of the 2009 Batch Expected to Pursue Higher Studies in India

Name	Institute	Programme	Discipline at IITGN
Dipesh Dayama	IIM Ahmedabad	Post Graduate Programme in Management (PGP)	Mechanical
Bobbur Abhilash Chowdary	IIM Calcutta	Fellow Programme in Management (PhD)	Electrical
Sushant Kumar Suman	NID Ahmedabad	(MDes) Furniture and Interior design	Chemical
Shrankhla Narya	Srishti School of Arts, Design and Technology, Bangalore	ADP in Aesthetics and Critical Studies	Chemical
Monica Yadav	Tata Institute of Social Sciences, Mumbai	MA in Development Studies	Chemical
Hima Teja	IIT Kharagpur	Joint MTech/MCP-PhD (Chemical Engg)	Chemical



Reaching Out

- **Prof Sudhir K Jain** was the Special Guest of a Caltech Y Friends Dinner **Adventures in India** at Caltech on April 19, 2012 where Caltech students shared their experiences of participation in **India-Ki-Khoj** at IITGN. Prof Jain spoke about the importance of international exchange programmes.
- **Prof Jain** made a presentation on IITGN to the IIT Council on Jan 7, 2013.
- **Prof Jain** was Chief Guest at the 59th Annual Conference of the Indian Association of Cardiothoracic Surgeons, Mumbai, Feb 14-17, 2013.
- **Prof Jain** attended the annual meeting of the Earthquake Engineering Research Institute (EERI) in Memphis, Tennessee during April 10-13, 2012. He took the opportunity to visit a number of universities and organizations in the US to build relationships, recruit faculty and seek donors. Prof Jain visited the University of Notre Dame and the University of California, Berkeley. He had meetings with leaderships of EPIR Technologies (Chicago) and

Hospira (Chicago). **Ms Anjali Joshi** hosted a meeting of potential friends of IITGN at her home in San Francisco area while **Mr Navneet Chugh** hosted a similar meeting in his office for those based in Los Angeles region.

- **Prof Jain** and **Prof D V Pai** participated in the Young Researchers Meet in Stanford University during May 26-27, 2012 with a view to build connections with potential faculty candidates in Mathematics and Computer Science.
- **Prof Jain** participated in the **Shastri Engaging India: Human and Social Dimensions of Science and Technology Conference** and made a presentation on **IITGN: A Laboratory for Experiments in Education**, University of Calgary, June 3-4, 2012. He also took this opportunity to visit Stanford University, Ricoh Innovation Centre (Menlo Park), and Caltech. He visited and signed a MoU of mutual collaboration with the University of Saskatchewan.
- **Prof Jain** participated in the

Young Investigators Meet (YIM) at MIT Cambridge and delivered a talk **IITGN: An Opportunity to Partner with Success**, Oct 6-8, 2012. This is an annual event to connect aspiring faculty candidates of Indian origin in the US with academic institutions in India. IIT Gandhinagar was one of the main sponsors of the YIM this year as well.

- **Prof Jain** delivered the Presidential Address of the Indian Archaeological Society at the Joint Annual Conference of the three societies, viz Indian Archaeological Society, Indian Society for prehistoric and Quaternary Studies, and Indian History and Culture Society, at M S University of Baroda, Nov 22, 2012; delivered a talk on **PR Challenges of an Educational Startup: The IITGN Story** at Public Relations Society of India (PRSI), Ahmedabad, Feb 27, 2013; and also delivered a lecture on **Building an Institution: The IITGN Story** at Goa Institute of Management, March 30, 2013.