

annual report

2011-12



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



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From the Directors Desk

The Institute stands at an interesting point of time: almost four years old, with the first batch of undergraduate students about to graduate and take next step in their career. This is a critical juncture to look back at what the Institute has done in the last one year and where it stands today. Some facts first:

1. The unique strategy IITGN adopted for faculty recruitment is proving far more successful than anticipated as evidenced from the outstanding quality of faculty we are recruiting. The key components of this strategy include: a) massive communication effort with academics, post-doctoral researchers and graduate students the world over, b) taking quick decision and making offers of appointment, c) offering additional financial incentives through donations by awarding Excellence-in-Research Fellowships, and d) focusing on outstanding credentials rather than the candidate's area of specialization.
2. The Institute is able to invite a good number of visiting academics from around the world. For instance, a Visiting Professor from Lisbon taught Anthropology, a younger colleague from France taught French language, and a colleague from EPFL in Switzerland taught Mechanical Engineering during the year.
3. The Institute implemented new futuristic B. Tech. and M. Tech. curricula, with tremendous innovations. The B. Tech. programme now starts with a five-week Foundation Programme, where the students focus on creativity, values and ethics, cultural issues, social engagement, sports and physical fitness.
4. The Department of Information Technology (DIT) of the Government of India has funded an incubation centre, and the Department of Earth Sciences of the Government of India has established the Varahamihira Chair in Earth System Science and Engineering. The Government of Gujarat has sanctioned Rs 10 crores for setting up a Centre of Excellence in Bio-Medical Engineering.
5. The path has now been cleared for us to take over the land to develop our permanent campus. A futuristic masterplan for the campus is almost ready. The Institute envisages a campus that promotes interaction between faculty and students, between the students, and between scholars of different disciplines. It is planned to be a 'green campus' with minimal energy consumption.



As we grow, we need to find new ways and means to retain and enhance our spirit of innovation and entrepreneurship, and maintain an enthusiastic environment wherein people feel empowered to do things, to take on challenges, to innovate, and not be scared of making mistakes.

Clearly, there is a lot happening in the Institute that its faculty, staff and students, as well as its well-wishers and supporters can be truly proud of. However, we still have a long way to go. While we will continue to do what we are already doing well, the Institute needs to develop new focus areas:

1. Development of permanent campus that will attract visitors and that will be conducive to great scholarly work for decades ahead.
2. Recruitment of the most outstanding Ph. D. and M. Tech. scholars who will bring glory to the country through their ground-breaking research.
3. To support excellence through donor funds (where public funds may not be used), we must significantly scale up our efforts to raise philanthropic funds.
4. To develop strategic partnerships with academic world as well as the industries. On one hand we wish to partner with top universities in the world, on the other hand we would like to engage the best undergraduate colleges in India.

A lot of what the Institute has achieved in its short life has been possible due to tremendous hard work and confidence of the faculty, staff and students of this Institute, and faith and encouragement of numerous well-wishers of the Institute, its Board and Senate members, and the officials in the Government of India and the Government of Gujarat. The Principal, faculty, and students of VGEC Chandkheda have been tremendous hosts to us. The generosity of Adani Group in providing their flats for accommodation of our students is exemplary. The funds raised from well wishers in its short span of life by the Institute can be a matter of envy for many well established schools with large alumni body.

It is too early for the Institute to claim world-class research that will address societal problems in a substantial way. However, the Institute can certainly claim numerous innovations in both curriculum and in governance. Any visitor to the Institute can easily sense the enthusiasm and positive energy all around, in students, staff and faculty. As we grow, we need to find new ways and means to retain and enhance our spirit of innovation and entrepreneurship, and maintain an enthusiastic environment wherein people feel empowered to do things, to take on challenges, to innovate, and not be scared of making mistakes. With huge investments being made on us, where numerous of our countrymen lack basic needs for a dignified living, it is important that we do not lose sight of our goals and the critical elements to achieve those goals.

Vision Mission and Values

Goals
Vision
Mission
Values
Principles

Goals

- ▲ To build and develop a world class institution to create and impart knowledge at the undergraduate, postgraduate and doctoral levels, contributing to the development of the nation and humanity at large.
- ▲ To develop leaders with vision, creative thinking, social awareness and respect for our values.
- ▲ To foster excellence in teaching and research to make a global impact.
- ▲ To engage in path-breaking research that would influence national policies.
- ▲ To pursue sustainable technological solutions to societal problems.
- ▲ To focus on lean engineering solutions for sustainable development.
- ▲ To be the leader for academic and industrial collaborations in various disciplines, nationally and internationally.
- ▲ To create awareness of the true significance of learning and teaching.
- ▲ To enrich local schools and communities through value added interactions.
- ▲ To encourage excellent communication skills as part of the institutional culture.
- ▲ To prepare students not just for their first job, but their last job as well.
- ▲ To establish the process of learning that is free, fulfilling, and an enjoyable experience.
- ▲ To provide an enabling environment to nurture critical and creative minds, and to propel them to greater heights of excellence in their pursuits.
- ▲ To create a vibrant atmosphere that breeds front runner innovators, scientists, engineers, entrepreneurs, academicians and thinkers of tomorrow.
- ▲ To provide opportunity for students to learn from wherever, however, and whatever they choose to study.
- ▲ To make IIT Gandhinagar the preferred destination for future generations of students, staff, and faculty.

Mission

IIT Gandhinagar, as an institution for higher learning in science, technology and related fields, aspires to develop top notch scientists, engineers, leaders and entrepreneurs to meet the needs of the society-now and in the future. Furthermore, in this land of Gandhiji, with his spirit of high work ethic and service to the society, IIT Gandhinagar seeks to undertake ground breaking research, and develop breakthrough products that will improve everyday lives of our communities.

Vision

- ▲ To shape IIT Gandhinagar into an exciting place for learning, teaching, and research.

Values

- ▲ Meritocracy
- ▲ Unparalleled quality and excellence
- ▲ Honesty, integrity, sincerity and devotion
- ▲ Trust and freedom with accountability
- ▲ Appreciation and celebration of creativity
- ▲ Willingness to try new ideas and allow mistakes
- ▲ Social and Moral responsibility
- ▲ Respect for every individual, and diversity
- ▲ Co-operation, collaboration and team work

Principles

- ▲ Lifelong commitment to learning
- ▲ Encouragement of merit
- ▲ Passion and motivation for work
- ▲ Professionalism
- ▲ Respect for law
- ▲ Concern for the improvement of the society
- ▲ Transparency in functioning of the Institute
- ▲ Dedication to the Institute

Academics

Programmes Offered
Major Highlights
Scholarships for Students
Distinguished Honorary Professors
Guest Professors
Distinguished Visitors
Conferences/ Symposia/ Workshops/Seminars
Invited Lectures
Short Courses

Programmes Offered

Undergraduate (B. Tech.)

Chemical Engineering
Electrical Engineering
Mechanical Engineering

Postgraduate (M. Tech. and D. IIT)

Chemical Engineering
Civil Engineering
Electrical Engineering (to start in July 2012)
Materials Science and Engineering (to start in July 2012)
Mechanical Engineering (to start in July 2012)
Post-graduate diploma in Engineering (D.IIT)

Doctoral

Chemical Engineering
Chemistry
Civil Engineering
Cognitive Sciences
Economics
Electrical Engineering
English
Mathematics
Mechanical Engineering
Philosophy
Physics
Sociology

Major Highlights

IIT Gandhinagar aspires to be a leader and a trend-setter in education. In this endeavour, the Institute enthusiastically encourages innovative and experimental approaches in education consistent with its mission and vision. Some of the recent initiatives that have been taken are outlined below.

Academic Advisory Council Meeting

The Institute has formed an Academic Advisory Council to guide/advise IITGN on matters pertaining to faculty recruitment, the role of young faculty in administration, feedback mechanisms on the Institute's progress, development of an academic master plan and administrative structures. The Council comprises of **Prof. Bakul Dholakia**, former Director, IIM Ahmedabad, **Prof. Paul Jennings**, former Vice-President and Provost, California Institute of Technology, Pasadena, USA, **Prof. Richard Miller**, President, Franklin W. Olin College of Engineering, Needham, MA, USA, **Prof. K. N. Panikkar**, Chairman, Kerala Council for Historical Research, Thiruvananthapuram, **Prof. Surendra Prasad**, former Director, IIT Delhi, **Dr R. Rangarajan**, Associate Professor, Physical Research Laboratory, Ahmedabad; **Prof. Dheeraj Sanghi**, Professor, Dept. of Computer Science, IIT Kanpur, **Shri Prafull Anubhai Shah**, Chairman, Board of Management, Ahmedabad University, **Prof. S. P. Sukhatme**, former Director, IIT Bombay, and **Prof. Satish Tripathi**, President, State University of New York, Buffalo, USA. This august group, in its first meeting on December 1, 2011 at the Institute, held extensive discussions on various issues. Visual Gallery at http://www.iitgn.ac.in/administr-ation_aac.htm.



Academic Advisory Council Meeting



Leadership Conclave

Each year the Institute invites the most eminent well wishers of the Institute from India and abroad to a day-long Leadership Conclave to benefit from their collective wisdom. Their rich and varied experience acts like a guiding hand for the Institute in its quest to best address short- and long-term strategic matters. The second Leadership Conclave was held on December 2, 2011. It was attended by **Prof. Bakul Dholakia**, former Director, IIM Ahmedabad, **Prof. Paul Jennings**, former Vice-President and Provost, California Institute of Technology, Pasadena, USA, **Dr Anil Kakodkar**, Chairman, Board of Governors, IIT Bombay, **Shri Sanjay Lalbhai**, Chairman and Managing Director, Arvind Mills Pvt. Ltd, Ahmedabad, **Dr Achal Mehra**, Editor, Little India Group, USA, **Prof. Richard Miller**, President, Franklin W. Olin College of Engineering, Needham, MA, USA, **Shri Kamal Nanavaty**, President, Strategy Development, Reliance Industries Limited, **Shri Kushal Sacheti**, CEO, Galaxy, New York, **Shri Maheswar Sahu**, Principal Secretary, Industries & Mines, Government of Gujarat, **Prof. Dheeraj Sanghi**, Professor, Dept. of Computer Science, IIT Kanpur, **Shri Arvind Singhal**, Chairman, Technopak Advisors Pvt Ltd. Gurgaon, **Prof. S. P. Sukhatme**, former Director, IIT Bombay and **Prof. Satish Tripathi**, President, State University of New York, Buffalo, USA in addition to a few IITGN faculty. The Conclave discussed various aspects related to positioning of the Institute vis-à-vis its aspirations, issues related to infrastructure development (in particular the new campus), fund-raising strategies and forging partnerships with various academic, industrial, and government agencies. Visual Gallery at http://www.iitgn.ac.in/administration_leadership.html.

New Undergraduate Curriculum

IITGN launched its new B. Tech. curriculum starting with a five-week **Foundation Programme** (July 19 - August 23, 2011) for the batch of 2011. The Programme focussed on social awareness and emphasized values, creativity, sports and physical activities, team work and communication. The inaugural address of the programme was delivered on July 19, 2011 by **Shri N. R. Narayana Murthy**, ex-Chairman, Infosys. The programme included a wide variety of activities such as debates, discussions, workshops on diverse topics (free-hand sketching, clay modeling, origami, photography, and dance & theatre), visits to places of special interest, presentations by

eminent persons, musical performances and games. Some of the speakers included **Ms Kalpana Sharma** (Gender Issues), **Prof. K. P. Jayasankar** (Urban Poverty), **Mr Jaideep Hardikar** (Farmer's Suicides), **Mr Devinder Sharma** (Agriculture Sector), **Prof. Sudarshan Iyengar**, **Prof. P. Balaram**, **Prof. P. V. Indiresan**, and **Prof. A. P. Kudchadker**. An Indian classical music recital on the Mohan Veena by **Pt Vishwamohan Bhatt** and a vocal recital by **Mrs Arti Anklikar-Tikekar**, were held on August 11 and August 18, 2011 respectively. The incoming students were also introduced to historical places through a field trip to Lothal, a Heritage Walk in the old city of Ahmedabad and a visit to the Calico Textile

Museum, Ahmedabad. On the last day of the Foundation Programme, the students organized a cultural performance to showcase their own talents. The concluding session of the Foundation Programme was held on August 23, 2011 and was attended by students, staff and faculty. In the course of the evening some of the new students shared their experiences of the five weeks. **Ajinkya Kulkarni**, Student General Secretary led the first year students to take a pledge to uphold the ideals of the Institute and abide by its rules. A visual gallery that captures the Foundation Programme is available at http://www.iitgn.ac.in/iit_gallery16.htm.

Outstanding Academic Performance to be Recognized

The Institute has set up a system to recognize every semester, undergraduate students with outstanding academic performance. A student with an SPI of 8.5 or more, and also satisfying other criteria set forth by the Academic Senate, is placed on the **Dean's List**. Each student on the Dean's List receives a letter of

appreciation from the Dean of Academic Programmes and a topical book.

IIT Gandhinagar Junior Fellowship

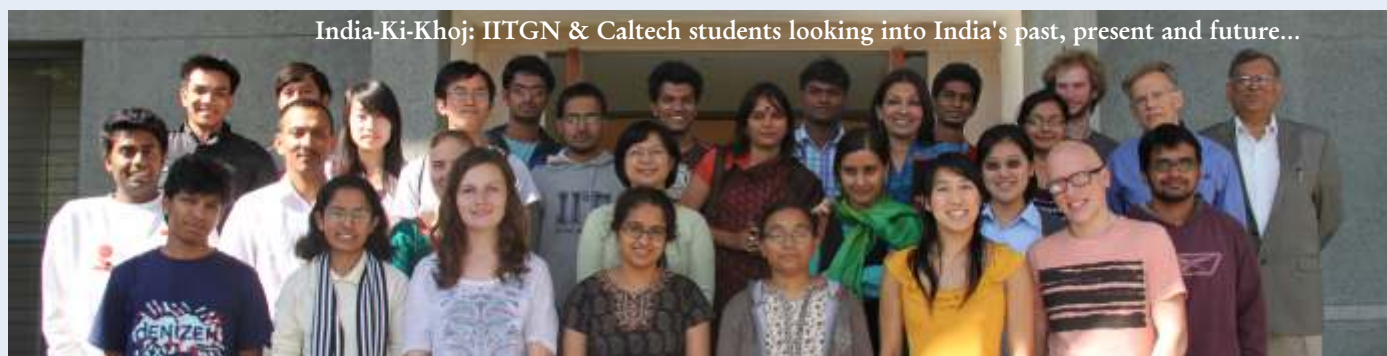
The Board of Governors has approved a proposal through which the Institute will encourage its graduating students to explore their professional interests in a somewhat unconventional manner. Initially four graduating students will be offered the **IIT Gandhinagar Junior Fellowship**. The awardees will spend one year at IITGN performing different tasks before embarking on a career of their choice.

New M. Tech. Curriculum

M. Tech. programmes in Civil Engineering and Chemical Engineering started at the Institute in July 2011 with an intake of 14 students. M. Tech. programmes in Electrical Engineering, Mechanical Engineering and Materials Science and Engineering will be started from July 2012. The admission process for all the five M. Tech. programmes has begun.

India-Ki-Khoj: IITGN & Caltech students looking into India's past, present and future...

Ten Caltech undergraduate students, hosted by IITGN and partnered with ten IITGN students, under a student exchange programme, embarked on a unique journey of social and cultural exploration of India through an event aptly named India-Ki-Khoj during December 12-21, 2011. It was like looking into a kaleidoscope to see India in its myriad hues. The event dwelled on themes as varied as the caste and community structures in India, ancient Indian civilization, challenges of globalization and liberalization, science and technology, media and advertising, economic reforms and their impact on the cultures of self and market, democratic institutions and non-governmental organizations. The programme was inaugurated by the eminent dancer and activist **Dr Mallika Sarabhai**. Lectures by leading academicians and thinkers such as **Mr Michel Danino**, **Prof. Suguna Ramanathan**, **Mr Santosh Desai**, **Prof. Howard Spodek**, and **Dr Sandeep Pandey** were supplemented by field-trips to Lothal (Indus Valley Civilization site), Sabarmati Ashram, and Bhasha, center for tribal languages and identity at Tejgadh, Chhota Udaipur, Panchmahal District. India-Ki-Khoj was coordinated by **Prof. Rita Kothari** and **Prof. Jaison Manjaly** from IITGN and **Ms Athena Castro** from Caltech.



Non-degree Students in Post-Graduate Programme

The Institute has been providing opportunities to full time students of other institutions to pursue course work or research for one or two semesters at IITGN. Starting spring semester 2010-11, this opportunity has been made available both at UG and PG levels to non-students as well. Interested persons can credit one or two courses at a time, or can do one or two semesters of full course load at IITGN.

Financial Support to students for Participation in Conferences

Students can now get partial financial support from the Institute to participate in conferences within India and abroad to present their work carried out at IITGN. The Board of Governors has approved this initiative to provide wider academic exposure and experience to the students and reward excellence. The Institute's one Ph. D. and two undergraduate students have availed the Institute's support to attend conferences this year. **S. Chandrasekaran**, a Ph. D. student, and **Yogesh Goyal**, Fourth Year, Chemical Engineering student attended conferences in Bangalore, while **Prathamesh Arvind Juvatkar**, Fourth Year, Electrical Engineering student attended one in South Carolina, USA.

Start-Early Ph. D. Fellowship

In order to attract students of IITs, NITs, and other top engineering colleges in the country to IITGN's Ph. D. programme, the Institute is offering direct admission to fourth year B. Tech. students regardless of whether they have qualified GATE. An additional fellowship of Rs 10,000 per month will be given to the students who qualify GATE.

Summer Research Fellowship for IITGN Faculty

The Institute has set up Summer Research Fellowships for faculty members in an effort to intensify research activities on campus during the summer when most faculty members do not have teaching

responsibilities. These fellowships aim to promote more collaborative research at the Institute and encourage faculty to explore the possibility of seeking external funding for joint proposals. The presence of faculty on campus also allows them to spend significantly more time with the graduate students to take stock of their progress and chalk out plans for the next academic year.

Young Researchers Conclave (YRC)

With a view to attract excellent teachers and researchers to Indian academia, in general, and to IIT Gandhinagar, in particular, the Institute invited 50 young researchers (postgraduate students and post doctoral researchers), of Indian origin from around the world to the first Young Researchers Conclave (YRC) held on December 27-28, 2011. The young researchers were exposed to the fast-changing scenario of research in India and the excellent research and teaching opportunities now available. Several eminent academicians were invited to address the conclave including **Prof. Surendra Prasad** (IITD), **Prof. Sanjay Mittal** (IITK), **Prof. Jaywant Arakeri** (IISc), **Dr Manish Gupta** (IBM), **Mr Uday Chand** and **Mr S. P. Singh** (Reliance). Several young faculty members of IITGN also participated in the discussions. The Conclave was organized by **Prof. Supreet Saini** (IITGN), **Sourindra Choudhuri** (Graduate Student, Princeton) and **Niranjan Srinivas** (Graduate Student, CalTech) and was sponsored by the Government of Gujarat. Further details on <http://www.iitgn.ac.in/YRC/YRC.html>.

PRL and IITGN to Collaborate Seamlessly

In an effort to pool local scientific and technological expertise, the Physical Research



Faculty Excellence Awards

IITGN has instituted awards for excellence for faculty in the field of teaching, research, institution building and outreach. These awards are a way of recognizing exemplary dedication. Dr A. P. J. Abdul Kalam presented the first set of Faculty Excellence Awards on November 11, 2011. The award for excellence in teaching was given to **Prof. Sameer V. Dalvi** (Chemical Engg) and **Prof. Sharmita Lahiri** (Humanities), while the award for excellence in institution building was given to **Prof. Jaison Manjaly** (Humanities) and **Prof. Supreet Saini** (Chemical Engg). Visual Gallery at http://www.iitgn.ac.in/iit_gallery13.htm



Laboratory (PRL) Ahmedabad and IITGN have agreed to seamlessly share their academic and research resources with each other. This is expected to significantly promote collaborative research and maintain a steady exchange of scientific ideas. The students of one Institute may credit courses and use research facilities at the other Institute. Faculty from both institutions will also be encouraged to deliver lectures and teach courses at the partnering institutions. A joint Ph. D. programme has also been initiated under which the participating students will obtain their degrees from IITGN. They will follow an academic programme recognized by both PRL and IITGN. An MoU to this effect was signed on November 17, 2011.

Summer Research Opportunity for Faculty of Other Engineering Institutions

The Institute strongly believes in inclusive growth and is conscious of the role it has to play in the development of the wider academic community of the country. This programme specifically aimed to help other institutes create better teaching and research environments. With this in mind the Institute invited faculty of other engineering institutions to provide them with the opportunity to participate in ongoing

research projects at IITGN, be mentored by an IITGN faculty and participate in laboratory development and help design new elective courses.

Institute Fellow Award

The Board of Governors has approved a system to recognize individuals whose contributions are expected to have a significant and long-lasting impact on the Institute, by conferring the **Institute Fellow Award** on them. The awardees may be from within or outside the Institute. The Fellowship will normally be awarded at the annual Convocation of the Institute and will include a citation and a plaque.

Children's Education Fund

In keeping with its strong sense of commitment to the well-being of its community members the Institute has set up the Children's Education Fund for children who are otherwise not eligible to receive the Institute's support but whose parents provide essential services to the effective functioning of the Institute. The beneficiaries include daily wage labourers and persons employed by the contractors. This fund provides Rs 5000 to every family per year to cover the cost of school education up to class 12.

Staff Excellence Award

The first set of Excellence Awards for the non-teaching staff were presented to **Mr R. T. Shah** (Asst Registrar, Finance & Accounts), **Mr Santosh Raut** (Jr Superintendent), **Mr Supresh Thaleshri** (Jr Lab Attendant) and **Mr Ganesh Thakore** (Office Attendant) on January 26, 2012 as part of the Republic Day celebrations.



Staff Skill Development Initiative

The Institute has initiated a programme to enable non-teaching staff to enhance their knowledge and skills through short courses and workshops conducted in-person or on-line. On successful completion of the training, staff members are reimbursed the registration fees.

The following staff members have taken advantage of Staff Skill Development Initiative of the Institute by attending locally available short courses during the year: **Mrs Ritu Agarwal** (Personal & Professional Success through Cybernetic Management), **Mr Santosh Raut** (Managerial Effectiveness),

Mr Pijush Majumdar (Challenges in Delegation), **Mr Piyush Vankar** (English Language Programme), **Mr Darshan Patel** (Basic English), **Mr Farhan Babu** (AutoCad with 3D), **Mr Gaurav Shukla**, **Mr Santosh Raut**, and **Mr Sanjeev Pandey** (Development Workshop for Secretaries/P. A.s), **Mr Shreejit Menon** (Office Management in Educational Institutions) and **Ms Panna Chaudhary** (Administrative Effectiveness, Strategies for Managing Libraries in the Future, and Librarians' Day and Seminar: Networking Libraries in Gujarat for Resource Sharing).

Scholarships for Students

New Merit Scholarships Instituted

IITGN has instituted several merit scholarships for outstanding performance in academics, sports, art and culture, and social work and leadership. These scholarships are different from the Merit-cum-Means scholarships and will be awarded only on the basis of achievements in respective fields. The scholarship carries a stipend of Rs 2,000 per month for 10 months. These Merit scholarships for the academic year 2011-12 have been awarded as follows:

Scholarship for Excellence in Academics

- ▲ Swetava Ganguli
- ▲ Prathamesh A. Juvatkar
- ▲ Yogesh Goyal
- ▲ Vipul Goyal
- ▲ Shruti Jain
- ▲ Pratham Shah
- ▲ Vibhav V. Katre
- ▲ Aishwarya Agrawal
- ▲ Dhwanil P. Shukla

Scholarship for Excellence in Sports

- ▲ Suresh Kumar Chaudhary
- ▲ Vrushiket Patil
- ▲ Vishvendra Joshi
- ▲ Shruti Jain

Scholarship for Excellence in Social Work & Leadership

- ▲ Sarthak Jain
- ▲ Monica Yadav

Merit-cum-Means Scholarships

Merit-cum-Means (MCM) scholarships were awarded to 74 students of the general and OBC categories during the year 2011-12. 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 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 29 students who did not qualify for MCM on merit but needed financial assistance.

All students of SC/ST category avail the

tuition fee waiver. In addition, 52 students in this category whose parents' income was 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.

Gita and Prithwish Goswami Scholarship

The Gita and Prithwish Goswami Scholarship carries Rs 1500 per month for 10 months. The Institute also awards the recipients a tuition fee waiver if they satisfy the income criterion for MCM scholarships. **Lingala Thrinath Reddy** is the recipient of this award for the year 2011-12.

S. C. Mehrotra Scholarships

The S. C. Mehrotra Scholarship carries Rs 1500 per month for 10 months. The Institute also awards the recipients a tuition fee waiver if they satisfy the income criterion for MCM scholarships.



Gunturu Anusha, a fourth year B. Tech. student and recipient of last year's S. C. Mehrotra Scholarship, continues to receive the scholarship.



Vipul Goyal, a third year B. Tech. student and recipient of last year's S. C. Mehrotra Scholarship, continues to receive the scholarship.



Yash Goyal, a second year B. Tech. student is the new recipient of S. C. Mehrotra Scholarship for the year 2011-12.

Distinguished Honorary Professors

- 1 **Prof. Suhas P. Sukhatme**, Professor Emeritus, Indian Institute of Technology Bombay, received his Sc. D. (Doctor of Science) from M.I.T. in 1964. Prof. Sukhatme is 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. Prof. Sukhatme is the recipient of many honours and awards including the Prince of Wales Gold Medal from BHU, 1958, the Shanti Swarup Bhatnagar Prize, 1983 and the Om Prakash Bhasin Foundation Award for Engineering, 2001. He was the first recipient of the Lifetime Achievement Award of the Indian Institute of Technology, Bombay in 2001. He was conferred an honorary Doctor of Science by the Banaras Hindu University in 2001. He was awarded Padma Shri by the Government of India in 2001.
- 2 **Prof. J. B. Joshi**, a Chair Professor at DAE-Homi Bhabha National Institute, is also the J. C. Bose Fellow of the Institute of Chemical Technology, Mumbai. He did his BE, ME and Ph.D in Chemical Engineering from the University of Mumbai in 1971, 1972 and 1977, respectively. He won the INSA young scientist medal in 1981, and the Amar-Dye-Chem Award for Excellence in Research and Development in 1983. Prof. Joshi has published over 300 papers and 50 monographs/book chapters/State-of-the-Art Reviews. Many of Prof. Joshi's designs and products are implemented in industry. He has also taken the initiative to promote science awareness among school going students.

Guest Professors

The following academicians are associated with the Institute as Guest Professors. In the capacity, a Guest Professor commits to spend at least ten days in a year at the Institute to contribute to its tryst with excellence.

- 3 **Dr Nikhil Balram**, President and CEO of Ricoh Innovations Inc., was conferred the 2011 Alumni Achievement Award by Carnegie Mellon University, Pittsburgh. Dr Balram is a renowned innovator and expert on display technology and consumer electronics. The products that he and his team have developed have won numerous awards. He has served in executive positions in several companies including Faroudja, Sage, Genesis Microchip, SONICblue, National Semiconductor and Marvell Semiconductor. He has numerous patents, technical papers and books. He received his BS, MS and Ph. D. degrees in Electrical Engineering, from Carnegie Mellon University.
- 4 **Prof. Vijay Gupta**, Director, GD Goenka World Institute, New Delhi 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 Gold Medalist in B. Tech. from IIT Delhi. He obtained his Ph. D. degree from the University of Minnesota in 1972.



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- 5 **Prof. Suchitra Mathur**, Associate Professor of English at IIT Kanpur, is a teacher and scholar in the fields of Indian English Literature, Feminist and 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 in 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.
- 6 **Mr Michel Danino**, a French citizen by birth, has been living in India since 1977 and is now an Indian citizen. As an independent student of the Indian civilization he has authored papers and books in French and English. 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 at cultural and higher educational institutions across the country on the origins of the Indian civilization from archaeological, ancient historical and cultural perspectives. He was visiting faculty at IIT Kanpur in February-March 2011 and delivered a series of lectures on Science and Technology in Ancient India. He has been Guest Lecturer at Amrita Vishwa Vidyapeetham, Coimbatore and Amritapuri campuses (since 2007), and is currently a visiting faculty at IIM Ranchi.
- 7 **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 B. Sc. and M. Sc. degrees from the University of Bombay and Ph. D. from University of Paris 6, France.
- 8 **Prof. K. S. Gandhi** received his Bachelors degree in Chemical Engineering from Andhra University (1962), his Masters degree from the Ohio State University (1965), and his doctorate from the University of California at Berkeley (1971). He has taught at IIT Kanpur (1971–86) and at IISc, Bangalore (1986–2005). His industrial experience includes work at J. K. Paper Mills, Rayagada and at Pilkington Brothers Research Centre in the UK. He is a member of the Indian Institute of Chemical Engineers, Fellow of the Indian Academy of Sciences and the Indian National Academy of Engineering.
- 9 **Prof. Dheeraj Sanghi** is Dean, Academic Affairs and 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 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 B. Tech. from IIT Kanpur, and MS and Ph. D. from University of Maryland, College Park.

- 10 **Prof. Dipan K. Ghosh** is currently the Provost (Vice-Chancellor) at the Navrachana University, Vadodara. He is a 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 one 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 has been awarded IITB's Best Teacher award in 2000. In 2011 he was awarded the Life-time Achievement Award of IITB for his contributions to Institution building.

- 11 **Dr Sandeep Pandey**, a full time social activist since 1993 obtained a Ph. D. degree from University of California, Berkeley, USA and was an Assistant Professor at IIT Kanpur until 1993. His present areas of work are diverse and include education for underprivileged children, human rights, empowerment of marginalized communities, struggles for strengthening democracy, Right to Information for transparency and accountability, Right to Food, employment guarantee schemes, people's politics, governance, communal harmony, nuclear disarmament and peace, India-Pakistan friendship, corporate accountability. He conducts a short course entitled 'Strengthening of Democracy at the Grassroots in India' that is very well received both in India and abroad. He also delivers lectures on various social issues and writes for Hindi, Assamese and Telgu newspapers on a regular basis. He has also served on Central Advisory Board on Education of MHRD, Government of India.

Distinguished Visitors

Visits by eminent personalities in diverse fields such as science, engineering, technology, and education inspire the students, faculty and staff of the Institute. IITGN hosts lectures by such distinguished individuals both by special invitation and if they happen to be in the area for some other engagement. Faculty and students are encouraged to meet the distinguished visitors and interact with them to imbibe the qualities that set them apart. Some of the eminent persons who visited the Institute during 2011-12 are:

- 12 **Dr A. P. J. Abdul Kalam**, former President of India visited IITGN on November 11, 2011 and delivered a characteristically inspirational speech to the students, staff and faculty members on the Development of India by 2020 and National Missions. He emphasized to the students the need for hard work, dedication and integrity. On the

Institute's request Dr Kalam also presented the Institute's first Faculty Excellence Awards.

- 13 **Mr August W. Schaefer**, Senior Vice President, Underwriters Laboratory (UL), Northbrook, USA visited IITGN on April 18, 2011. Three undergraduate students, Anchit Gaurav, Adnan Ansari,



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and Abhishek Umrao, demonstrated their laboratory set-up on research pertaining to kitchen fire safety to UL and IITGN officials. IITGN students also made a presentation on the National Fire Database and Kitchen Fire Safety in India. An IITGN-UL Research Lab has been set up by the students under the guidance of Prof. Chinmay Ghoroi. The lab is partially funded by UL.

- 14 **Mr Hideki Segawa**, Deputy General Manager of Ricoh Company Ltd, Tokyo visited IITGN on May 5, 2011 to discuss potential areas for collaborations in the field of social entrepreneurship where IITGN and RII collaborate to help potential entrepreneurs in rural India. He was accompanied by his colleagues Ms Eiko Nakamoto and Ms Ryohko Ezoe.
- 15 **Dr R. A. Mashelkar**, FRS, Chairman, Board of Governors, IITGN and an eminent scientist, addressed the students, staff and faculty of IITGN on September 3, 2011. In an inspiring speech interspersed with anecdotes, he recounted his scientific adventures and challenges. It was a memorable occasion for the large audience that had gathered to listen to him.
- 16 **Shri N. R. Narayana Murthy**, ex-Chairman, Infosys, visited IITGN on July 19, 2011. He obtained his B. E. degree from University of Mysore (1967) and M. Tech. from IIT Kanpur (1969), and later founded Infosys in 1981. He was the President of National Association of Software and Service Companies (NASSCOM) during 1992-94. He received the ET Businessperson of the Year award (2000-2001). IIT Kanpur conferred the

Distinguished Alumnus Award on Shri Narayana Murthy in the year 1998.

- 17 **Prof. M. Anandakrishnan**, an eminent educationist and currently Chairman of the Board of Governors, IIT Kanpur visited the Institute to interact with the faculty on January 22, 2012. He obtained his B.E (1952) from College of Engineering, Guindy, Madras University and Ph. D (1960), from University of Minnesota, USA. He was the first Science Counsellor at the Embassy of India, Washington, D.C. (1974-1978). Later, he served the United Nations (1978-1989) as the Chief of the New Technologies, and Deputy Director of the UN Centre for S&T for Development at New York and also as the Secretary of the UN Advisory Committee on S&T for Development. He is credited with the development and implementation of the 'Single Window admission System' for engineering institutions in Tamil Nadu. He was awarded Padma Shri by the Government of India in 2002. His other honours and awards include The Order of Scientific Merit from the President of Brazil (1996); Distinguished Leadership Award of the University of Minnesota (2003); Honorary Fellow of the Indian Society for Technical Education (2005); UGC National Swami Pranavananda Saraswati Award in Education (2006).
- 18 **Ms Tara Gandhi Bhattacharjee**, the granddaughter of Mahatma Gandhi and C. Rajagopalachari, currently Vice-Chair Person of the Kasturba Gandhi National Memorial Trust and of Gandhi Smriti & Darshan Samiti visited IITGN during March 13-16, 2012 and interacted with the IITGN community. She has adapted



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Gandhi's message of non-violence to the contemporary world by extending her support to environmental protection. She has contributed significantly to women's self-sufficiency and emancipation and has been working for the welfare of the spinners and the weavers of khadi.

- 19 Mr Rajendra S. Pawar**, Chairman and Co-Founder of the NIIT Group, graduated with a B. Tech. degree in Electronics from IIT Delhi in 1972. He is a member on the Prime Minister's National Council on Skill Development. He has served on the Prime Minister's National Task Force in 1998. He is on the Board of IIT Delhi, IIM Bangalore, IIM Udaipur, the Indian School of Business, Hyderabad, The Scindia School and SMVD University of Jammu & Kashmir. Mr Pawar is a member of the University Court of Delhi University, and has served on the board of IGNOU. An advisor to the Hunan Province of China, he has also been a member of Presidential International Advisory Council of the Government of South Africa for IT. He has been honored with the prestigious Nayudamma Award 2012, for his continued contribution to the IT industry. Government of India awarded him Padma Bhushan in 2011.

Other Visitors

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

Prof. Svetlana Brzev, British Columbia Institute of Technology, Canada; **Prof. Marcial Blondet**, Pontifica Universidad Católica del Perú; **Ms Marjorie Greene**, Earthquake Engineering Research Institute, California; **Prof. Andrew Charleson**, Victoria University, New Zealand; **Prof. V. Raghavendra** and **Prof. Joydeep Dutta**, IIT Kanpur; **Prof. A. K. Pani**, **Prof. Ram Puniyani**, **Prof. Mallikarjun Rao**, **Prof.**

Sharmila and **Prof. A. Ramanathan**, IIT Bombay; **Prof. Ravi Shankar P.**, **Prof. T. V. Anoop**, **Prof. Prashanth K. Srinivasan** and **Prof. Mythily Ramaswamy**, TIFR Bangalore; **Prof. M. T. Nair**, IIT Madras; **Prof. Polat Gulkan**, Cankaya University, Turkey; **Prof. Luis Esteve**, National University of Mexico; **Prof. Rama Bhargava**, IIT Roorkee; **Prof. S. Kesavan**, IMSc Chennai; **Prof. Pallavi Mahale** and **Prof. G. Naga Raju**, VNIT Nagpur; **Prof. Sundararaja Ramaswamy**, NIIT Neemrana; **Prof. Timothy Gonsalves**, IIT Mandi; **Prof. Raghavan Rangarajan**, Physical Research Laboratory, Ahmedabad; **Prof. Pradyumna Vyas**, National Institute of Design, Ahmedabad; **Ms Pratibha Pandya**, SEWA Reception Centre, Ahmedabad; **Mr Arvind Singhal**, Technopak Advisors Pvt. Ltd; **Prof. Raj P. Chhabra**, **Prof. Suchitra Mathur**, **Prof. Lilavati Krishnan**, and **Prof. Dheeraj Sanghi**, IIT Kanpur; **Prof. N. J. Rao**, Jaypee University of Engineering & Technology; **Ms Svati Bhogle**, Technology Informatics Design Endeavour (TIDE); **Ms Madhu Chadda**, IIT Hyderabad; **Dr K. N. Panikkar**, Kerala Council for Historical Research, Thiruvananthapuram; **Prof. Youseph Yazdi** and **Prof. Soumyadip Acharya**, Johns Hopkins University, USA; **Prof. T. Harinarayana** (Director) and **Mr Amin Petiwala** (Secretary) Gujarat Energy Research and Management Institute (GERMI); **Mr Pravinray D. Gandhi**, Director of Corporate Research, Underwrites Laboratories Inc.; **Mr Hitesh Jain**, **Mr Saurabh Sriparn**, and **Mr V. Jagdish**, Underwrites Laboratories India; **Dr Navdeep Mathur**, IIM Ahmedabad; **Dr Balaji Parthasarathy**, IIIT Bangalore; **Prof. Koshy Tharakan**, University of Goa; **Prof. Shiv Visvanathan**, DA-IICT, Gandhinagar; **Dr Tara S. Nair**, Gujarat Institute of Development Research, Ahmedabad; **Prof. Rajeev Sangal**, IIIT Hyderabad; **Prof. Suhita Chopra Chatterjee**, IIT Kharagpur.

Conferences/ Symposia/ Workshops/ Seminars

Conferences, Symposia, Workshops and Seminars on focus themes are important academic activities to stimulate discussions on different areas of importance. Many of these activities invite and receive participation from other organizations, which bring the additional benefit of increasing the Institute's visibility to the outside world. The following activities were organized during 2011-12:

- ▲ A workshop on **Variational analysis and optimization with applications to PDEs**



was organized by **Prof. D. V. Pai** of IITGN (Convener) and **Prof. Mythily Ramaswamy** of TIFR Bangalore (Co-convener) during April 1-4, 2011. A number of renowned mathematicians in this field from the country's top institutions participated. The workshop was supported by the Department of Science and Technology and the National Board for Higher Mathematics, Department of Atomic Energy. More details are available at http://www.iitgn.ac.in/pdf/Brochure_PDEs.pdf.

- ▲ IIT Gandhinagar, together with IIT Kanpur and Buildings Materials Technology Promotion Council (BMTPC) New Delhi, organized an international workshop on **Confined Masonry** on April 17-18, 2011. Invitees from Canada, USA, New Zealand, Peru and India participated in the deliberations.
- ▲ Two workshops on **Autodesk inventor** were conducted by **Mr Ramesh S. Pudale**, Education Solutions Specialist, Autodesk India (P) Ltd during July 13-15, 2011 and October 9, 2011.

- ▲ An international symposium **Spaces of Alterity – Literary and Dramatic Representations** was organized by **Prof. Pia Thielmann** during September 9-11, 2011. Twenty two delegates from Botswana, Portugal, Germany and India attended the symposium.

- ▲ A weekly lecture series on **Social Justice and Empowerment** was presented by **Prof. Sandeep Pandey** during August 24 - October 12, 2011. Several students and members of staff and faculty enthusiastically attended these lectures to increase their awareness about many issues that touch the lives of the common man. The lectures were very thought-provoking and laid bare the deficiencies of our democracy.

- ▲ A one-day national seminar on the **Contribution of women's writing to**



the cultures of peace was organized in collaboration with Zubaan on February 2, 2012. It was attended by members of the IIT community and other interested persons, and was coordinated by **Prof. Rita Kothari**, **Prof. Sharmita Lahiri** and **Prof. Arnapurna Rath**.

- ▲ An internal workshop on **Effective Teaching** was held on March 17, 2012. **Prof. Dheeraj Sanghi** (IIT Kanpur), **Prof. Suchitra Mathur** (IIT Kanpur) and **Prof. Sudhir K. Jain** (Director, IITGN) were the resource persons. Thirty-five faculty members participated in the workshop coordinated by **Prof. Sharmita Lahiri**.
- ▲ A brain-storming workshop on **Looking Beyond Engineering Education: Humanities and Social Sciences Programme at IIT Gandhinagar**, was held on March 31, 2012. The workshop attendees, scholars from IITs, IIITs and other universities, deliberated on wide-ranging issues connected with HSS. It was coordinated by **Prof. Jaison A. Manjaly** and **Prof. Rosa Maria Perez**. Details are available at http://www.iitgn.ac.in/hss_workshop.htm.
- ▲ **Dr Mihir Bholey**, National Institute of Design, Ahmedabad, April 15, 2011.
- ▲ **Surface water quality and wastewater treatment** by **Dr Ramesh Goel**, Civil & Environmental Engineering, University of Utah, May 25, 2011.
- ▲ **A career in fiber optics** by **Dr Arnab Sarkar**, Founder & Chairman, Advanced Optical Fiber Solutions, USA, August 8, 2011.
- ▲ **Granular media micromechanics and higher-order continuum theories** by **Prof. Anil Misra**, University of Kansas, Lawrence, USA, August 14, 2011.
- ▲ **Mobilized masculinities in contemporary India** by **Prof. Mangesh Kulkarni**, University of Pune, August 19, 2011.
- ▲ **Challenges for optimizing wind turbine performance, operation and maintenance** by **Dr Surendra N. Ganeriwala**, Founder and President, Spectra Quest, USA, August 19, 2011.
- ▲ **Unlocking the power of your gaming card for computational fluid dynamics applications** by **Dr Dominic Chandar**, Department of Mechanical Engineering, University of Wyoming, USA, September 1, 2011.
- ▲ **Synchronization of thermal and mechanical oscillations** by **Prof. Mihir Sen**, University of Notre Dame, USA, September 15, 2011.
- ▲ **Pulsating visions – idioms incarnate** by **Prof. Anabela Mendes**, University of Lisbon, September 16, 2011.
- ▲ **Story of optimal control** by **Prof. Mythily Ramaswamy**, TIFR, Centre for
- ▲ **Biomedical applications of lasers** by **Dr P. K. Gupta**, Raja Ramanna Centre for Advanced Technology, Indore, April 8, 2011.
- ▲ **Caste conflict: the myth and reality** by

Invited Lectures

The following invited lectures were delivered by experts who were invited to the Institute to share their insights in their respective fields to kindle scholarly interest in the students in a diverse range of topics. These lectures, attended by the students, faculty and staff, are delivered at a level that is easily understood by the uninitiated.

- ▲ **Biomedical applications of lasers** by **Dr P. K. Gupta**, Raja Ramanna Centre for Advanced Technology, Indore, April 8, 2011.
- ▲ **Caste conflict: the myth and reality** by

Short Courses

The following short courses were delivered by acknowledged experts in their respective fields.

- ▲ A short course on **Biology for Engineers** was conducted by **Mr Vikas Trivedi**, a graduate student at the California Institute of Technology, during August 2-4, 2011.
- ▲ A short course on **Climate change - politics, policies and facts** was conducted by **Mr Aditya Ghosh** and **Mr Chandra Bhushan** of Centre for Science and Environment, New Delhi, September 3-4, 2011.
- ▲ A short course on **Geotechnical aspects of earthquake engineering** was conducted by **Prof. Amit Prashant**, **Prof. Ajanta Sachan** and **Prof. Sudhir K. Jain**, of IITGN and **Prof. Debasis Roy** of IIT Kharagpur during February 27-March 01, 2012. It was attended by seventy engineers and senior professionals.

- Applicable Mathematics, Bangalore, October 13, 2011.
- ▲ **Uncomfortable truths about contemporary Britain: Black and South Asian British theatre in the UK** by Prof. Geoffrey Davis, RWTH Aachen University, Germany, October 18, 2011.
 - ▲ **Research informatics: a view inside the biotech industry** by Mr Sebastian Jayaraj, CEO, 10BioSystems, October 19, 2011.
 - ▲ **Photovoltaics: fundamentals and future prospects** by Prof. S. Ashok, Pennsylvania, State University, November 3, 2011.
 - ▲ **Petrol, diesel, and ethanol biofuels from grasses and plants** by Prof. Ram B. Gupta, Auburn University, USA, November 16, 2011.
 - ▲ **From the ground up: a comprehensive systems approach to the redesign of engineering education** by Prof. Richard Miller, President, Franklin W. Olin College of Engineering, USA, November 30, 2011.
 - ▲ **Lessons from the Christchurch earthquake 2011** by Dr S. R. Uma, GNS Science, New Zealand, December 20, 2011.
 - ▲ **Research opportunities & challenges in selected food engineering processes** by Prof. Mukund Karwe, Rutgers University, USA, December 30, 2011.
 - ▲ **The atomic nucleus and stars** by Prof. Umesh Garg, University of Notre Dame, USA, January 12, 2012.
 - ▲ **Existence theory of elliptic partial differential equations** by Prof. Lucio Boccardo, Università di Roma, January 15-17, 2012.
 - ▲ **Mathematics in ancient India, and black holes** by Prof. Samir Bose, University of Notre Dame, USA, February 2-3, 2012.
 - ▲ **Cross approximation and tensor decompositions** by Dr Jan Schneider, Max Planck Institute, Leipzig, Germany, February 2, 2012.
 - ▲ **Non-linear perspectives of health and disease in Ayurveda** by Dr Rama Jayasundar, AIIMS, New Delhi, February 3, 2012.
 - ▲ **Signal processing for stereoscopic 3D displays** by Dr Nikhil Balram, Ricoh Innovations, Inc., USA, February 8, 2012.
 - ▲ **E-learning in education** by Dr Muriel Grosbois, DILTEC, Université Sorbonne Nouvelle, February 15, 2012.
 - ▲ **A multi-period optimization based decision support system for strategic planning in process industries** by Prof. Goutam Dutta, IIM Ahmedabad, February 23, 2012.
 - ▲ **Magic and mass culture** by Dr Ranadhir Mitra, formerly of University of California and University of Pittsburgh, March 1, 2012.
 - ▲ **Can renewable energy sources meet India's future needs of electricity** by Prof. S. P. Sukhatme, Distinguished Honorary Professor, IITGN, March 14-15, 2012.
 - ▲ **Emerging trends in engines** by Prof. Pramod Mehta, IIT Madras, March 19, 2012.
 - ▲ **State of innovation and higher education in India** by Prof. Shyam Sunder, Yale School of Management, March 23, 2012.