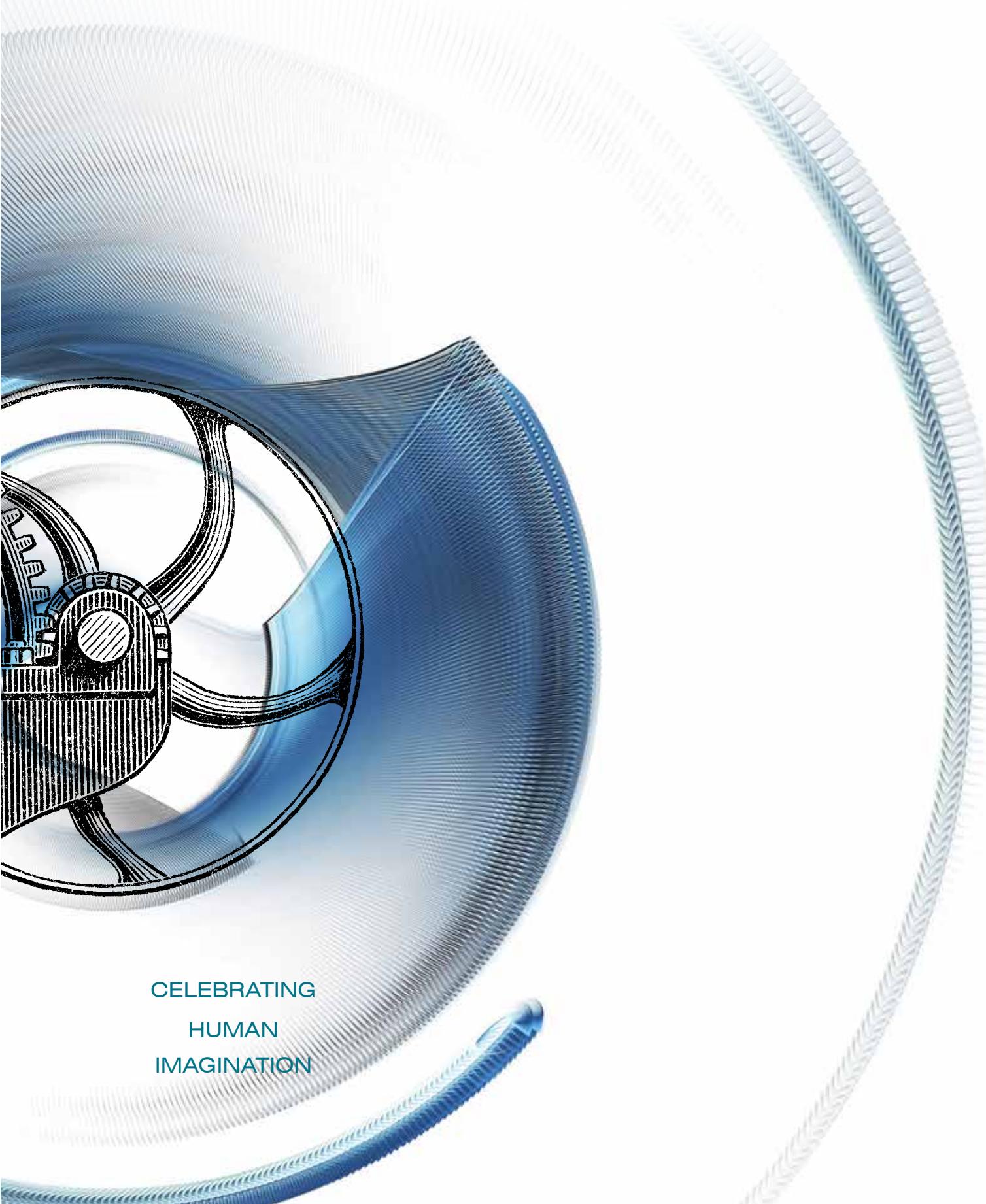




INDIAN INSTITUTE OF TECHNOLOGY HYDERABAD

Annual Report 2012 - 13



CELEBRATING
HUMAN
IMAGINATION

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CORE FACULTY

- Biomedical Engineering (BM)
- Biotechnology (BT)
- Chemical Engineering (CH)
- Chemistry (CY)
- Civil Engineering (CE)
- Computer Science & Engineering (CSE)
- Electrical Engineering (EE)
- Engineering Science (ES)
- Liberal Arts (LA)
- Materials Science & Engineering (MSE)
- Mathematics (MA)
- Mechanical Engineering (ME)
- Physics (PH)



Total Faculty Strength
as of 31 March 2013

99

FROM THE DIRECTOR

IIT Hyderabad - In Exploratory Mode, Always

IIT Hyderabad has a vibrant research and development ambiance and an innovative academic ecosystem. Most faculty have sponsored research projects and are publishing vigorously in international as well as national fora. The fact that the faculty have over 70 sponsored research and consultancy projects with a sanctioned amount of Rs 60 crs, and interactions with nearly 20 industries is itself a testimony to the vibrant research culture at IITH.

There are several centers to promote and accelerate research. Some of these are Center for Nano-X, Center for Cyber Physical Systems, Center for X-Materials and Center for High Performance Computing. One of the biggest strengths is multi-disciplinarity - there are several areas where faculty from more than one area come together to work on problems, e.g., computer and communication networks, drug delivery systems, multi-scale science, sustainable development, to name a few. There is a major multi-institutional research project as part of the IITH-Japan collaboration - DISANET: Information Network for Natural Disaster Mitigation and Recovery.

Innovations at IITH are all-pervasive, be it fundamental research or academics. A couple of

years back we started the novel concept of fractional credit courses - this was utilized to launch the B.Tech. Minor in Entrepreneurship taught exclusively by people from industry. This August, we take another leap, perhaps a leap into the unknown, by starting for the first time, what we refer to as the 'Fractal Academic Program in Electrical Engineering'. By 2014, we plan to have Fractal Academics in all departments. More on this on the IITH webpage.

IITH has a dynamic faculty in all disciplines; in August 2013 it stands at 115. In August 2013, IITH will have nearly 1350 students in 12 academic departments. Of 1350, there will be approximately 260 PhD students, 290 M.Tech. and M.Phil. students, 100 M.Sc. and the rest B.Techs. in seven engineering disciplines. Thus IITH has a now thriving student body, full of energy and a large number of student activities keep the campus very vibrant and alive.

Campus development is progressing at an accelerated pace. Construction of the campus has commenced, and we should be moving to the permanent campus in July 2014. The first phase will have three academic department buildings, eight men student hostel blocks and two blocks for women students, a dining



hall, faculty and staff housing. The next phase of activity has started and we hope to create buildings for all the remaining departments, and various other building so that IITH will be able to house 6000 students by 2017.

IITH has very active collaboration and this is on all fronts - research, academics and infrastructure development. This is a unique collaboration which will help propel IITH to be among the best in the world. There are plans to have active research collaboration in several areas - like nano-science and nano-technology, energy and environment, next-generation communication technologies, sustainable development, and design and manufacturing. At the infrastructure level, besides several academic buildings, Japanese architects are designing iconic structure to reflect the friendship between Japan and IIT Hyderabad. These buildings are the Knowledge Center (library), Technology Incubation and Research Park, Convention Village, Guest House and Sports and Cultural Complex.

IITH has launched its technology business incubator and two companies have started functioning in the incubator.

IITH has MoUs and active collaboration with eight leading US universities and four leading Japanese universities. IITH has had several visiting faculty from USA, France, and Canada who taught fractional credit courses.

IITH is profoundly thankful to MHRD for providing all the support in IITH's quest for excellence and world eminence.

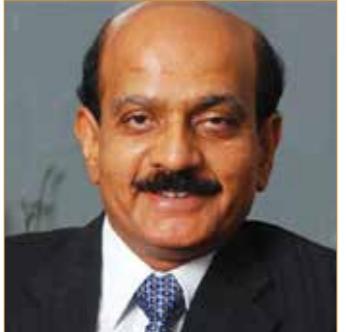
IITH is extremely thankful to Ordnance Factory, Medak for providing a beautiful campus while in transition, and the necessary infrastructure to accommodate the students, faculty, and some state-of-the-art research laboratories.

IITH is creating a unique holistic educational ecosystem that will foster cutting-edge research, learning and entrepreneurship. It is providing an environment wherein students and faculty are not afraid to experiment and celebrate their imagination.

Prof UB Desai

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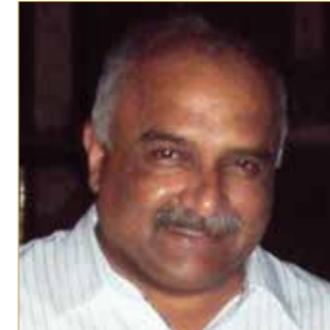
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FROM THE DEANS

Since 2009, IIT Hyderabad has made rapid progress in the hiring of faculty. The total number of permanent faculty now on the rolls is 108. The reason for the rapid growth is not difficult to see, as every one of the 11 departments typically has two selections for permanent posts each year. However, even with all the pressure for rapid growth, there has been a very conscious effort not to relax standards: although almost all the hires have been at the level of Assistant Professor, fully 60% of them have had extensive post-doctoral experience, and two-thirds have either PhDs or post-doctoral experience abroad. In the last year, we have had around 150 journal / conference publications and 40 sponsored projects, which is good for such a young institution.

Encouraging as these numbers are, there is no place for complacency: IITH is set to expand from its current student strength of around 1100 to more than 6600 in 2018 - a six-fold increase in student strength in just five years! (The reason for this is that IITH has received a very large loan from the Government of Japan for its development). To handle such a student number we would need a faculty strength of 600 - or at least 400 - by 2018. So the rate of hiring will be sustained, even accelerated, in the foreseeable future. There are many reasons that a young academic would find it best to join IITH - over all the other opportunities offered at other academic institutions in India - it is poised for a very rapid growth, there are large amounts laid out for laboratory and other infrastructure development and for the purchase of equipment (which is a specific item in the Japanese loan), and as the faculty age is very low, responsibility comes very early upon joining IITH (very often in the first few weeks!). IITH therefore offers a vibrantly dynamic place for young men and women (from whom we actively encourage applications) to have a great academic career.

Vinayak Eswaran
Professor, HoD & Dean - Faculty



Ever since IITH started functioning from August 2008, new UG / PG programs were continuously introduced every year, reaching the current strength of 1073 students across all programs. The academic year 2012-13 is particularly significant, as the first batch of PhD students will be graduating from IITH along with the 2nd and 3rd batches of BTech / MSc and MTech, respectively. As many as 188 students will be awarded degrees during the 2nd convocation, to be celebrated on August 7, 2013.

Inventions and innovations are the two key driving forces for the vision of this Institute. The same concept and spirit has been taken further in the conduct of the academic activities. The flexible and modular education system adopted by IITH allows experts from industry, academia and other spheres of life to offer Fractional Credit Courses of 0.5, 1, ...2.5 credits, adding a new dimension to our teaching model.

During the year 2012-13, IITH started a new BTech program in Engineering Science, wherein the student does the basic courses in the first four semesters, which provides breadth and specializes in any field of his / her choice in the last four semesters, which provides enough depth. The vibrant research atmosphere at IITH attracts a large number of summer interns from different parts of the country. Continuous improvement in teaching through student feedback helped our faculty to achieve a remarkable average rating of >4 (out of 5) across the Institute.

Faiz Ahmed Khan
Professor, HoD & Dean - Academics



We have started construction of buildings, facilities and supporting infrastructure on our 576-acre permanent campus. The beginning of the construction activity on permanent campus was the culmination of detailed planning and design efforts of the past few years involving development of the master plan for phased growth, architectural and structural designs of buildings, facilities planning and infrastructure design, urban planning, coordination with governmental agencies for permits and clearances and planning the execution stage.

We have given careful consideration to the impact of proposed growth on the environment and the surroundings. Designs for the buildings currently under construction confirm to very high environmental standards with considerations of energy and material usage. With the use of latest construction technology, we are planning to complete the construction to accommodate a student strength of 2000 and transition to the permanent campus in 2014.

We are currently also planning for the next phase of expansion to accommodate 5000 students and a total strength of 6000 by July 2017. The architectural design and development of few iconic buildings, which will have a distinctive Japanese signature, are currently being performed by the Department of Architecture, University of Tokyo. With inspiring architecture and innovative designs we aim to deliver a world-class campus which will promote a sense of excellence and make IITH an exciting place for learning with an environment conducive for inquiry.

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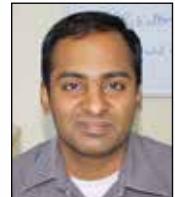


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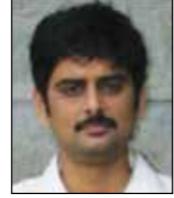
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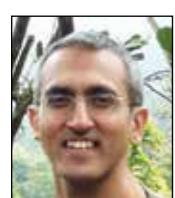
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MATERIAL SCIENCE AND ENGINEERING

MATERIAL SCIENCE AND ENGINEERING

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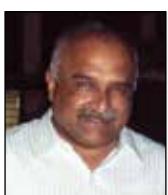
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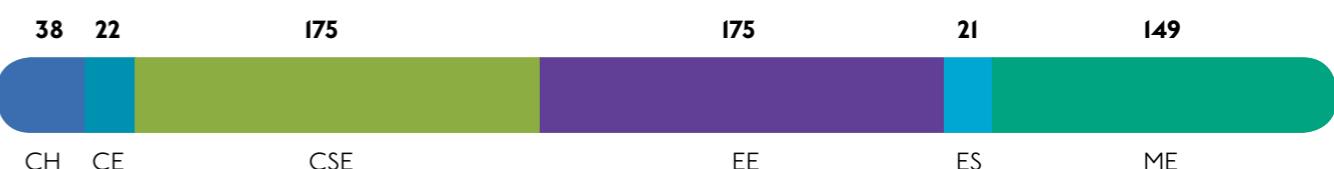
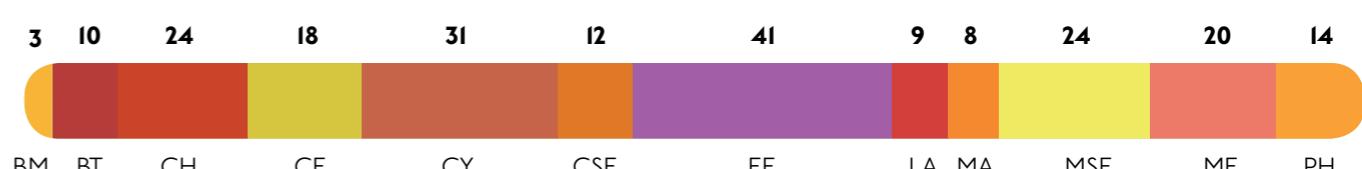
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PHYSICS

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STUDENT COMPOSITION

B.Tech. (580)**M.Tech. (224)****M.Sc. (56)****PhD (212)**

BM - Biomedical Engineering; BT - Biotechnology; CE - Civil Engineering; CH - Chemical Engineering;
CSE - Computer Science & Engineering; CY - Chemistry; EE - Electrical Engineering; ES - Engineering Science; LA - Liberal Arts;
MA - Mathematics ME - Mechanical Engineering; MSE - Materials Science & Engineering; PH - Physics

FRACTIONAL CREDIT COURSES

(Aug-Dec '12 & Jan-May '13 Semesters)

Name	Particulars
Mr JP Sahu	Integrator & Strategic Initiatives Knoltus
Mr T Srinagesh	CEO of Pragnya Advisors Private Ltd (PAL)
Mr Ajay Choudary	Former Chairman, BOG, IIT Hyderabad
Dr Navrotze Contractor	Cinematography
Dr Seshadri	
Dr T Bheemarjuna Reddy	Assistant Professor, IIT Hyderabad
Dr V Chandrasekhar	Senior Professor and Dean, Tata Institute of Fundamental Research
Dr Soban Babu	Assistant Professor, IIT Hyderabad
Dr NR Arvind	Assistant Professor, IIT Hyderabad
Dr S Kalyanasundaram	Assistant Professor, IIT Hyderabad
Dr Vijay Mann	IBM Research, IBM
Dr Anil Kumar	IBM
Dr Sateesh Andra	Ventureast
Dr Ramesh Loganathan	Progress
Dr Santanu Paul	CEO and MD, Talent Sprint



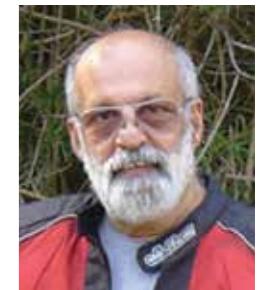
Dr Ajai Chowdhry



Mr JP Sahu



Mr T Srinagesh



Dr Navrotze Contractor



Dr Seshadri



Dr T Bheemarjuna Reddy



V Chandrasekhar



Dr Sobhan Babu



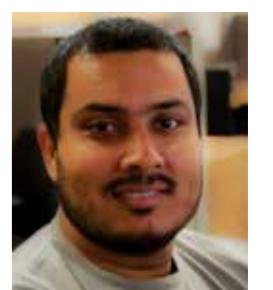
Dr NR Arvind



Dr S Kalyanasundaram



Dr Vijay Mann



Dr Anil Kumar



Dr Sateesh Andra



Dr Ramesh Loganathan



Dr Santanu Paul

INDUSTRY INTERACTION

IIT Hyderabad keeps very close interaction with industry. A number of research / consultancy projects are already underway or are in various stages of discussion.

The Department of Electrical Engineering has close interaction with LV Prasad Eye Institute, Achira Labs Pvt Ltd, Uurmi Systems, Continental Hospital, and National Institute for Nutrition (NIN).

The Department of Civil Engineering collaborates with Water and Power Consultancy Services (WAPCOS), L&T Ramboll, Ramky Enviro Engineering Ltd, Greater Hyderabad Municipal Corporation, NR Polymers, Andhra Pradesh Pollution Control Board, National Geophysical Research Institute, and National Aerospace Laboratories.

The Department of Chemical Engineering works with RCI (Defence Research & Development Organization (DRDO), National Mineral Development Corporation (NMDC), Tega Industries, Vedanta and Bhabha Atomic Research Center (BARC)-AMD. Discussions are ongoing with the Aditya Birla Group.

The Department of Mechanical Engineering has very fruitful collaborations with GE Technology Center, Mercedes-Benz Research & Development India Pvt Ltd, Military College of Electronics and Mechanical Engineering (MCEME), Non-Ferrous Materials Technology Development Centre (NFTDC), Tojym Steel, and Indian Space Research Organization (ISRO).

The Department of Materials Science and Engineering has collaborations with Defence Metallurgical Research Laboratory (DMRL)-DRDO.



LV Prasad Eye Institute



AP Pollution Control Board



आर सी आर्ड
RCI - DRDO



एन एम डी सी
NMDC



Mercedes-Benz



IITH-JAPAN COLLABORATION

Collaboration Advisory Committee



Dr Yoichiro Matsumoto
(Chair)

*Managing Director, Executive Vice President of the University of Tokyo
Professor Graduate School of Engineering*



Dr Yuichiro Anzai
(Advisor)

*Professor of Information and Computer Science, Faculty of Science and Technology
Executive Advisor for Academic Affairs and Former President of Keio University*



Dr Toshifumi Ise
(Environment & Energy)
*Professor, Division of Electrical, Electronic and Information Engineering
Graduate School of Engineering, Osaka University*

The collaboration between IIT Hyderabad and Japan is the result of a policy decision taken in 2007 by Dr Manmohan Singh, Prime Minister of India, and Mr Shinzo Abe, the then Prime Minister of Japan. The IITH Consortium of Japan was established in August 2009 as an umbrella organization of government, academia and industry from Japan, aiming to promote collaboration with IITH.

Regular exchange of faculty and students with various Japanese universities takes place under this collaboration. Occasionally, leading Japanese scholars from academia, industry, and the Government of Japan visit IITH and deliver special lectures to enhance the knowledge and networking among likeminded researchers in India and Japan.

In addition to knowledge dissemination through collaborative academic projects and exchange programs, this collaboration will also result in the design and construction of some iconic buildings in the campus. These buildings, designed by the Department of Architecture of University of Tokyo, will have a distinctive Japanese signature.

Five thrust areas have been identified for academic collaboration:

- Nano-Technology and Nano Science
- Next Generation Communication Technologies
- Environment and Energy
- Design and Manufacturing
- Sustainable Development



Dr Yozo Fujino
(Civil & Urban Engineering)
Professor for Bridge and Structure, Dept. of Civil Engineering, The University of Tokyo



Dr Jun Murai
(Digital Communications)
*Dean / Professor, Faculty of Environment and Information Studies
Former Vice-President of Keio University
Founder of WIDE Project
Chair of AI3 Project
Chair of SOI Asia Project*



Dr Yasuhiko Arakawa (Nanotechnology & Nanoscience)
*Director, Institute for Nano Quantum Information Electronics
Professor, Institute of Industrial Science, The University of Tokyo
Member, Science Council of Japan*



Dr Takahiro Ohno
(Design & Manufacturing)
*Dean International Affairs Division
Professor Faculty of Science and Engineering, Waseda University*

NEW CAMPUS DEVELOPMENT

Dr Pallam Raju, Hon'ble Minister of HRD, inaugurated the construction of the new campus on March 2, 2013. Mr BVR Mohan Reddy, Prof UB Desai, Mr Jagga Reddy, MLA Sangareddy, other BoG members, faculty and students of IIT Hyderabad were present during the occasion.



Dr Pallam Raju inaugurating the construction of new campus at Kandi.

The first phase of the construction of permanent campus of IIT Hyderabad, which includes development of infrastructure facilities and a total built-up area of 19 lakh square feet, started in November 2012. The 576-acre campus consists of an academic area, a residential area for students, and a residential area for faculty and staff. The initial phase of construction is planned to accommodate 2000 students, 150 faculty and 150 staff. The initial phase of construction will also provide infrastructure



Academic Department



Dr Pallam Raju planting a sapling after inaugurating the campus construction

facilities which are essential for supporting the operation, living, academic and research activities on the permanent campus. IIT Hyderabad is planned as a residential campus based on concepts of sustainable development and living for an institute of national importance. The initial phase of construction is scheduled to be completed by December 2014. This will be further expanded to accommodate 5000 students and a total population of 6000 by July 2017 through funding from Japan. The architectural design and development of a few iconic buildings, which will have a distinctive Japanese signature, is currently being performed by the Department of Architecture of University of Tokyo.

The development of the campus is being undertaken in an environmentally responsible manner with



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due consideration for the impact of the planned growth on the surroundings following an approval of the environmental impact assessment plan by the Ministry of Environment and Forests. It is planned to develop a 'green' campus with the objective of achieving self sufficiency in power through a grid

integrated 5 MW solar power generation capability. An integrated water management system, which minimizes reliance on external water supply and relies on management of water through harvesting, on-site storage and recycling, is being developed for implementation.

All buildings have been designed considering state-of-the-art strategies of planning and architecture to minimize power consumption, while keeping a high emphasis on aesthetics, safety and comfort. Unique features such as radiant cooling systems which provide thermal comfort while minimizing power consumption have been incorporated in the design of buildings. All buildings on the permanent campus have been designed to very high standards, aimed at achieving 4-star GRIHA rating. The vision for building design is inspired by the rapid growth of urban India and is reflective of the rising confidence in its sustained growth and progress. The buildings have been designed to inspire a sense of innovation and incorporate several cutting-edge features requiring the use of innovative construction techniques and materials.

The master-plan of IIT Hyderabad has been developed with the objective of harmonizing the learning and living environments, while allowing modular flexibility to accommodate future growth.



Faculty Housing

The buildings have been planned to allow natural opportunities for interaction between academics of different disciplines to come together and undertake research on cutting-edge interdisciplinary domains. Phase-wise growth of the buildings and infrastructure to support the projected growth of students and the associated increase in faculty and staff has been planned in such a way that the expansion is minimally disruptive to the on-going academic and research activities, with the additional

capability of scaling to a total population of 30000 and a student strength of 20000. With the large intake of students and infrastructure proposed for the Institute, IITH expects to be in a distinctive position among other IITs.



Hostel



Staff Housing

CAMPUS EVENTS

Convocation

IIT Hyderabad held its first convocation ceremony on 6 Aug 2012. Dr C Rangarajan, Chairman of the Prime Minister's Economic Advisory Council presided over the function. A total of 101 B.Tech students, 75 M.Tech students and 7 M.Sc. students received their degree during the convocation function. 16 Gold medals were distributed for excellence in academics. Apoorva Mahindra of B.Tech Electrical Engineering received the President's Gold Medal.



Special Correspondent

HYDERABAD: Chairman of Economic Advisory Council C. Rangarajan on Friday said that the Indian economy was currently passing through a difficult phase as growth had slowed and inflation remained high.

The fiscal and current account deficits also stood at a high level. These issues had to be addressed if the country was to achieve a sustained high growth rate, he said addressing the maiden convocation of Indian Institute of Technology, Hyderabad.

The developments should not, however, cloud the fact that the average annual growth rate had been 8.3 per cent over the seven year period beginning 2005-06.

The country's per capita Gross Domestic Product would increase from the current level of \$1600 to \$8,000-\$10,000 by 2025 only if the country grew at 8 to 9 per cent per annum.

Only then the country would become part of the

middle income group of countries, he added.

The convocation saw 183 students of classes 2011 and 2012 receiving B.Tech, M.Tech and M.Sc degrees in the disciplines of engineering, sciences, mathematics and liberal arts.

1,042 students

IIT-H Director Uday B. Desai said the campus now had 1,042 students, including 570 in B.Tech, 56 in M.Sc and 221 in M.Tech courses.

There were 93 members of the faculty in 12 departments. A new B.Tech programme 'Engineering Sciences' was launched which gave students the chance to specialise in any discipline of their choice.

They would have to take courses in all aspects of engineering in the first five semesters and then specialise in whichever discipline they wanted in the last three semesters.

Chairman, Board of Governors, Ajai Chowdhry, also spoke.

ELATED: The first batch from the IIT-H at the convocation on Friday. PHOTO: G. KRISHNASWAMY



The Hindu, 11 Aug 2012





Foundation Day

The 5th Foundation Day of IIT Hyderabad was celebrated on 2 March 2013. Dr Pallam Raju, Hon'ble Minister for Human Resources Development, was the Chief Guest. After delivering the Foundation Day lecture, he distributed awards for excellence in academics and teaching.



Dr Pallam Raju distributing excellence in academics and teaching awards

IITH in the News

IIT-H permanent campus by year-end

**DC CORRESPONDENT
HYDERABAD, MARCH 2**

IIT-Hyderabad, which is operating from a temporary campus in the Ordinance Factory since 2008, will move to its permanent campus by August 2014.

Union minister for human resource development Dr M.M. Pallam Raju on Saturday laid the foundation for the academic block-I at Kandi on the occasion of the fifth

Foundation Day of IIT-Hyderabad.

The block-I will house three engineering departments — chemical, Civil and mechanical.

Mr Raju said the Centre will extend financial assistance to IIT-Hyderabad to complete the construction of phase-I this year-end.

He said Japan has agreed to grant ₹300 crore for the development of IIT-Hyderabad's permanent campus.

Later, delivering

Foundation Day lecture, Mr Raju stressed on the need for quality higher education in the country.

He also distributed Excellence in Academics Awards to students and Excellence in Teaching Awards to the faculty.

Prof. Desai, the institute's director, said the institute is creating a unique holistic educational ecosystem that caters to



Union HRD minister Pallam Raju presenting the Excellence Awards at IIT-H on Saturday.

— DC



IIT-Hyderabad holds its first convocation ceremony



Single-Credit Freshman Project

In 2011, IITH had introduced a single-credit freshman project course for 1st year B.Tech students, to promote out-of-the-box thinking and encourage the young minds to pursue creative work early on. Every 1st year student thoroughly enjoyed the unique experience of independently pursuing his / her project with the help of a faculty advisor.

A few modifications were introduced to the course structure in 2012, which encouraged the students to select a design project of their choice and select their own teams. They were also given the option of taking advisory help from any faculty / senior

student(s). The results were impressive, with most groups developing a working model of their design and demonstrating their projects along with a poster presentation on 26 January 2013. Among the 70-odd projects displayed, the faculty selected 'Microbial Fuel Cell' as the winner. Other projects that received special appreciation were: Avionics, Boolean Algebra Solver, Mobile Control Home Appliances, Reducing Exposure to Mobile Phone System, Witiricity, and Electronic Switch Control through RF.

Details are available at: <http://www.iith.ac.in/administration/indeproj.html>

Innovative Mini Project Results - Orientation Program 2012

Innovative mini projects were carried out as part of the 'Orientation Program 2012', and demonstrated at the Independence Day celebrations on 15 August 2012. The top three projects were:

- ♦ Given a solar cell circuit, develop an algorithm to find the load it can support and time for battery to charge (can display on eight-bit LCD)
- ♦ Developing a basic Android App for Campus Website - Part 1
- ♦ A baby step towards 3D multimedia

The following projects (listed in alphabetical order) were also demonstrated:

- ♦ A simple model to explain the different crystallographic planes in silicon
- ♦ Calculating the path of a projectile in a real atmosphere
- ♦ Control of electrical load with wireless modules (bluetooth)
- ♦ Crowd-sourcing for mobile healthcare
- ♦ Design a machine to align the A4 printed paper & separate out the unprinted paper
- ♦ Developing a basic Android App for Campus Website - part 3
- ♦ Developing a tool for Campus Networking Monitoring and Visualization
- ♦ Developing an Android App for Campus Bus Tracking in Real-time

- ♦ Experiencing the beauty of car design: Racing Car
- ♦ Flow properties of chocolate: what do people like?
- ♦ Fluid dynamics associated with a cricket ball
- ♦ Higgs Discovery: A road map to the origin of mass in the Universe
- ♦ Micro-heating floor cleaning system
- ♦ Piezoelectric Energy Harvesting
- ♦ Pollution monitoring: technical challenges
- ♦ Rear wheel lift control mechanism under high deceleration conditions
- ♦ Shape optimization of common object(s) using photoelasticity
- ♦ Wireless network formation using MSP430 micro-controller and GSM Modem by sms method
- ♦ Wireless network formation using MSP430micro-controller and wifi module
- ♦ Wireless network formation using MSP430micro-controller and zigbee module

Winners of Robotics Competition

- ♦ **1st Prize:** Ankush Bansal, Arun R, Dipin K Nair, Kenneth Joseph Paul, Navaneeth T Chandran, Ronak Chaudhary
- ♦ **2nd Prize:** Abhay Gupta, Atul S Vivek, Bastin Joseph, D Raj Kripal, Shalu S Kumar, V Kalicharan
- ♦ **3rd Prize:** Anuj Parmar, Nilesh Negi, Piyush Sharma, Richik Mahendra Jaiswal, Vishal Hirani, Vivek DS

IITH Sets Up a 'Green Office'

A 'Green Office' has been set up at IITH, comprising volunteers from students, faculty, and staff. The Green Office is organized into five committees - in charge of Green Audit, Campus Biodiversity, Solid Waste Management, Energy Conservation and Outreach - each led by a faculty member. The activities of the Green Office are coordinated by a Convener (faculty), who reports to the Dean, Planning.

The Green Office subjects itself to a 'Green Audit' by a panel of external experts. An important activity

underway is the plantation of trees in the permanent campus of IITH, in consultation with 'Prakrti', the Institute's Nature Club. The Green Office has taken up a comprehensive Solid Waste Management Program, to include recycling of paper, plastic, metal scrap and packing material. It is also taking several other eco-friendly and energy conservation measures. A 'Center for Sustainable Development' is being planned, which will suggest environment management topics that can be included in the regular course curriculum.

FEM 2012

Prof JN Reddy, Distinguished Professor and inaugural holder of the Oscar S. Wyatt Endowed Chair in Mechanical Engineering at Texas A&M University, Texas delivered lectures at the short course on Finite Element Method (FEM 2012) with applications to solid mechanics, heat transfer and fluid mechanics. FEM 2012 was organized from 19-21 December 2012 by the Department of Civil Engineering, IIT Hyderabad. The course was aimed at students, analysts and researchers who are involved with the analysis of differential equations arising in engineering and applied science, and who are using commercially available finite element packages to analyze problems in the aeronautical, automobile, mechanical, civil and other engineering industries. The distinguished participants included people from academia, industry and various national R&D labs. The course also enabled the participants to be able to write their own FEM software.



ICCMS 2012



The fourth International Congress on Computational Mechanics and Simulation (ICCMS 2012) was a highly successful event organized by IIT Hyderabad on 9-12 December 2012. The Congress provided a forum for scientists, engineers and academicians around the globe to interact and exchange ideas and establish relationships for future collaboration. The Congress included distinguished plenary, keynote and invited

speakers covering the complementary roles of theory and numerical experimentation in engineering and sciences. 380 delegates representing 16 countries participated at the Congress. A total of 450 research papers were presented in 51 technical sessions during the three days of the Congress. Some of the papers presented at the Congress have also been brought out as special publications in a few leading journals.



Clubs at IIT Hyderabad



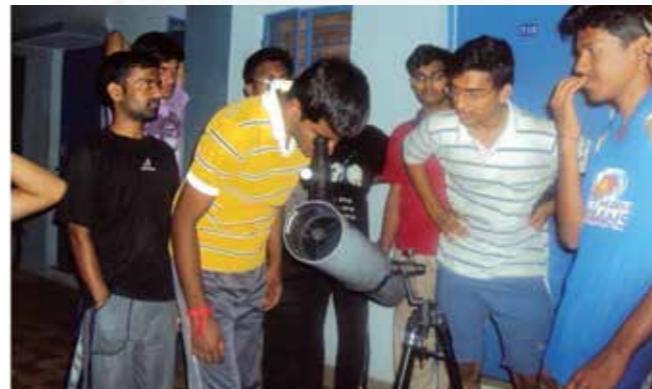
Dr Anand Mohan presenting a memento and T-shirt to the winner of Prakriti logo competition



Prakriti: The Nature Club

Prakriti, the Nature Club of IITH, was launched during the year. Its logo was designed by TS Iqbalso. The Club undertook an extensive waste management program in 2012-13, collecting, segregating and recycling wastes based on their nature of degradation. Red, blue and green bins were placed at several locations on the campus for collecting paper, plastic and bio-degradable wastes respectively. In September 2012, under an 'Adopt a Plant' program, Prakriti distributed and planted aromatic plants in various faculty offices. On 23 March 2013, IITH observed 'Earth Hour' by switching off all electric lights / other appliances from 8.30 to 9.30 pm. There was an 'Earth Race', a documentary film titled 'Home' was screened, and prizes were given away to winners of the 'Earth Race' and to TS Iqbalso.

...Clubs at IIT Hyderabad



Cepheid: The Astronomy Club

Humans have always been fascinated by what lies beyond this earth, and have continuously tried to discover and understand the universe and its many wonders. Members of 'Cepheid' also share this passion for exploring the universe, and seek to share their findings with others.



Endeavour: The Science Documentary Club

'Endeavour' seeks to imbibe and acquire scientific knowledge, and enable the curious and ignited minds of IIT (Inspire, Innovate and Transform) to discover and unravel the mysteries of science and thus become the fountainheads of scientific thinking. The Club regularly organizes documentaries, discussions and quizzes on science and engineering.



The Arts Club

Fine art or the fine arts encompass art forms developed primarily for aesthetics and / or concept rather than practical application. The Arts Club promotes various events relating to drawing, painting, posterizing, sketching, etc.



Torque: The Automobile Club

'Torque' is a haven for all automobile enthusiasts who just can't know enough of automobiles and want to know more. 'Torque' organizes automobile quizzes and other events to update their knowledge of automobiles, and also conducts creative activities in this domain.

...Clubs at IIT Hyderabad**The Dance Club**

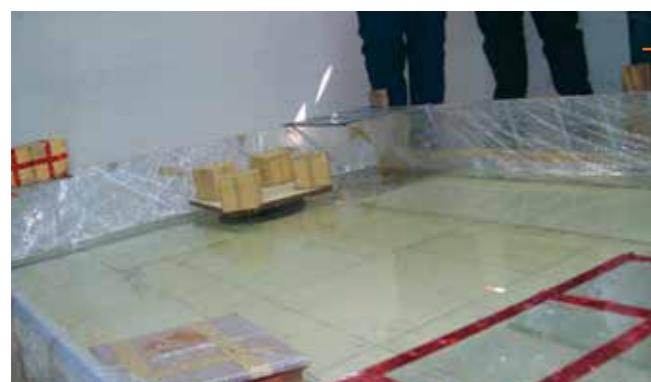
The Dance Club is a part of the cultural domain of Student Gymkhana. It performs regularly in 'Elan', and makes its own name in many other competitions. The Club is driven by the motto 'Dance is a poem of which each movement is a word'.

Rang de Manch: The Drama Club

Drama is defined as the specific mode of fiction represented in performance. 'Rang de Manch' tries to bring out the underlying talents of drama elements like acting, directing, writing scripts, etc. The club has performed in various inter-college cultural fests.

**Elektronica: The Electronics Club**

Elektronica is for those who love tweaking with electronic gadgets. It helps members to understand the seemingly incomprehensible electronic gadgets in the world today, and assists in developing devices conceptualized by them. Students do various projects in the club, some of them under faculty mentorship. The projects are also considered for improving the e-infrastructure of the Institute.

**Behind the Lens: The Movie Club**

The movie is said to be the most powerful medium of this generation. The club is a meeting place for all who are interested in movies, a place where they can share their views with other movie buffs, and also learn of the many exciting updates. The club encourages budding directors, amateur photographers, wannabe actors and for that matter anyone who just likes watching movies.

**...Clubs at IIT Hyderabad****The Music Club**

Berthold Auerbach had observed, 'Music washes away from the soul the dust of everyday life.' Music is also said to be 'the easiest way to talk with god'. With some people who wash their everyday stress and some music fanatics who walk on the divine path of music, the Club produces a variety of talents.

**Infero: The Programming Club**

Henry Ford had quipped, 'Most people spend more time and energy going around problems than in trying to solve them.' Infero has a bunch of fellows who take care of everyone's problems in their own nice geeky way. They think logically, reason out the problem, and develop suitable programs to prove that computer science can revolutionize the art of problem solving for one and all.

**The Quiz Club**

The Quiz Club is a constituent of the Institute's Literary Council. The Club organizes General, Sports, Political, Geography and other quizzes. It also organizes popular literary events and challenges like Spell Bee, Guess Who, etc

**Robotics: The Robot Club**

The Club works with the simple goal of exposing students to the ever wondrous field of robotics. Armed with the support of the institute, the knowledge pool and bubbling enthusiasm of its members, Club aims to provide the opportunity and materials to harness the students' creativity and ingenuity.

International Women's Day Celebrations

IIT Hyderabad celebrated International Women's Day on 5 April 2013. The Chief Guest at the celebrations was Ms Reema Gupta, Associate Director, SRITNE, Indian School of Business, Hyderabad. Prof UB Desai, Director, IIT Hyderabad delivered the Welcome Address, which was followed by a motivational talk by Ms Reema Gupta on women in Science and Technology. The official logo of the Women's Cell of IIT Hyderabad was launched on this day, and the winner of the logo design competition, Ms Swasti Arya, was awarded a special prize.



Visitors to the Campus



On 8 February 2013, noted film actor **Ms Amala Akkineni** addressed the students and described her journey through the world of films, which has won her considerable acclaim. She also spoke of her efforts for Blue Cross of Hyderabad (which works for the welfare of animals). Sharing her passion for environment protection, she urged the students to do all they could to prevent adverse climate change.



On 15 February 2013, IITH students had the privilege of hearing engineer-turned-filmmaker **Mr Nagesh Kukunoor** reminisce about his own college days as a Chemical Engineering student at Osmania University, after which he, while working as a Chemical Engineer in the US, decided to follow his own dream of making it big in the world of cinema. The audience was spellbound by his description of how he made his popular film '*Hyderabad Blues*'.

Student Activities



Gymkhana Day

Gymkhana Day was held on 3 April 2012. The newly elected 'Student Gymkhana' took an oath to preserve and sustain the constitution of IITH. Certificates, medals and trophies were given away to winners of various cultural, technical and sports competitions, as well as to teams like 'Elan', 'E-Cell', TPC, Class Rep, Mess Secretaries and Student Mentors.

Friendship Race

A 'Friendship Race' was held on 5 August 2012, in which hundreds of participants - including students, faculty and staff of IITH - took part in a 5-km run on the ODF campus. It was a fun-filled bonding experience, with the winners getting prizes from the Director on Independence Day (15 August).



'Nvision'

'Nvision', the annual intra-institute technical fest of IITH, was held on 13-14 October 2012. The event witnessed activities in a wide range of domains including robotics, electronics, astronomy and cyber security. Microsoft was the EML Partner for the fest.

'IITH's Got Talent'

On 17 October 2012, the Cultural Council of IITH organized 'IITH's Got Talent' in the hostel premises. The event served to bring out several hidden talents in the students in dance, music, drama and other fields.



...Student Activities**Freshers' Nite 2012**

Freshers' Nite 2012 was held on 2 November 2012. It was a fun-filled event, in which the 'freshmen' were led by their seniors. There was a wide range of activities, including music, dance, drama, stunts, and 'Mr Fresher' and 'Miss Fresher'. The event served to welcome the newcomers into the IITH family and to help make friends.

IITH Basketball League 2013

The IITH Basketball League was held on 7 January 2013. Eight teams participated with gusto in the round-robin tournament. Team 'Dabang the Fire' won the tournament, which witnessed plenty of playing talent.

**Pan-IIT Meet**

On 10 February 2013, a Pan-IIT Sports-cum-Cultural Meet was held at IITH. IIT alumni gathered on the campus with their families for a fun-filled day that included basketball, cricket, badminton and football. There was plenty of amusement for the children too.

**...Student Activities****'Sanskritic Sandhya'**

The Student Gymkhana of IITH arranged a 'Sanskritic Sandhya' (Traditional Day) on 19 February 2013, in association with Society for the Promotion of Indian Classical Music And Culture Amongst Youth (SPIC MACAY), which promotes traditional Indian art forms in educational institutions across India. IITH students were turned out in traditional Indian costumes. A classical musical concert by Shri Ritesh and Shri Rajnish was the highlight of the evening.

**'Fusion Nite'**

The Institute's Cultural Council organized a 'Fusion Nite' on 8-9 March 2013 in the hostel premises. It was a great platform for IITH students to display their talent in dancing, singing and instrumental music.

IITH Students at Other IITs**Inter-IIT Sports Meet, IIT Roorkee**

A team of 110 IITH students (90 boys and 20 girls) participated in the 48th Inter-IITH Sports Meet that was held at IIT Roorkee on 17-24 December 2012. The boys took part in football, volleyball, cricket, field hockey, badminton, table tennis, lawn tennis and athletics; the girls took part in badminton, table tennis, lawn tennis, volleyball and athletics. IITH won the bronze medal in football, and reached the quarterfinals in cricket, basketball, hockey and badminton. Overall, the IITH team was placed 8th in a fray of 15, edging out several older IITs.

...Student Activities

'Tech Fest', IIT Bombay

Twelve IITH students participated in 'IITB Techfest', the popular UNESCO-sponsored annual Tech Fest of IIT Bombay, which was held on 3-5 January 2013. Students from all over India gather at 'Techfest' - the largest tech fest in Asia - to develop and showcase their technical prowess. Team 'Gridmaster' of IITH won the First Prize at the zonal level.



'Jugaad', IIT Kanpur

On 15-16 March 2013, IITH students took part in 'Jugaad', an inter-IIT Technical Summit organized by IIT Kanpur. The Summit sought to foster an innovative attitude amongst the students for providing practical solutions to everyday problems.

An IITH team (Jayant, Praveen and Vignesh) won the First Prize in the 'Luggage Tracking System' competition. The team presented a plan to reduce thefts of luggage bags by using a tracking system equipped with GSM, GPS and cc2500 modules.

Another IITH team (Prashant, Ranit and Ankush) presented an 'Air Refilling System for Cycle' powered by one's feet, using a simple air-pump with a slider-crank mechanism that is mechanically powered by a pedal.



'Rendezvous', IIT Delhi

In October 2012, a contingent of 15 IITH students participated in 'Rendezvous', the annual cultural festival of IIT Delhi that draws nearly 30,000 students from over 300 colleges across India. The IITH team took part in a number of fun events organized in the four-day cultural fest.



Social Service through NSS



Driven by their belief that education is the best tool for creating an India with equality in thought and opportunity, NSS volunteers of IITH regularly visited government schools in the Institute's neighborhood and conducted classes in general mathematics, general science, general awareness and communicative English for VI-X Standard students. Audio visual quizzes and presentations were also used to get the students involved and also to expose them to new world technologies like tablets and laptops.

Other NSS activities included:

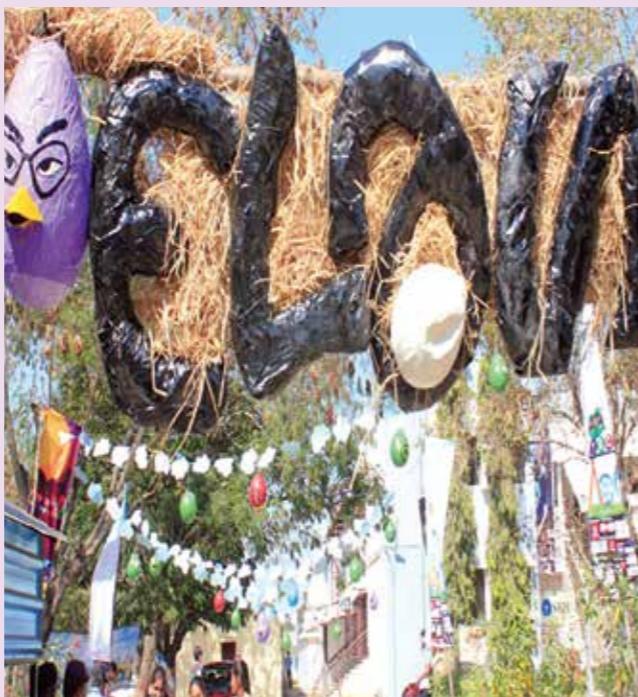
- ♦ Environment awareness programs, tree plantation / maintenance drives (providing saplings at a sponsored price of Re 1 per selling sapling), etc.
- ♦ Painting competitions to raise school students' awareness of traffic safety rules. Prizes were awarded to the winners and school teachers who had cooperated in the effort.
- ♦ 'Vastradaan', a clothes donation drive, was held in September 2012, which drew enthusiastic participation from IITH students. With the help of 'Manavata', a local NGO, the donated clothes were distributed among 98 poor families in a city suburb.



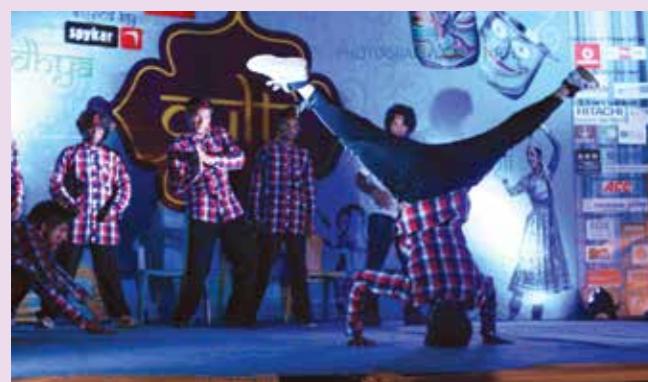
'Elan 2013'

'Elan', the annual Techno-Cultural Fest of IITH, was held on 18-20 January 2013. It included workshops in several domains. The 'Cyber Forensics and Exploration' workshop was a great networking opening for security enthusiasts and ethical hackers across India. The '3D Game-Development' workshop was conducted by Bhramm Technology, a Kanpur-based firm run by IIT Kanpur alumni. The 'Android Botix' workshop showed the participants how to control a robot using an Android OS-enabled smartphone with the help of an app. Other technical events included Aqua Dance, Junkyard Wars, Robo Epic, Code Swallow, Wall E, Electronic Bloopers, Electronic Champs, Robo Wars, Ojo Cad, Pirates, Poster Presentation, Automobile Quiz, Celestial Inquisition, Drag Me To 3D, Zodiac, App Guru, Got Robot, Project X, Tech Charades, Big Quiz, Science Quiz, and Save the Website.

Literary events included Aircrash, Debate, Green Quiz, Literary Quiz, Opentale, GK Quiz, Extempore, Guess Who, Hyd Quiz, Jam, Mr Detective, Political Potpourri, SochoHatke, Sweetheart, Turncoat, Whose line is it anyway, Crossword, Spell Bee. Cultural events included Andaaz Apna Apna, Break Free, Manthan, DJ Wars, Fabulous Fabula, RJ Hunt, Nrithyanjali, Film Fare Fiesta, Lend Your Voice, Loose



Your Feet, Mehendi, Arts Exhibition, Vibrazone, Pixel Adda, Face Painting, and Piclectic. Infi events included Casino, Graffiti, Rampage, Mad Ads, Sport O Mania, Treasure Hunt, Minute Games, Sports Quiz, Tollywood Quiz, and Ping. 'Biggies' and 'Elan E Jang' competitions were the other big attractions.

**Festival Celebrations****Diwali**

While Diwali is popularly known as the 'festival of lights', the most significant spiritual meaning behind it is the awareness of the 'inner light', which is beyond body and mind, which is pure, infinite and eternal. IITH celebrated 'Diwali' by making colorful Rangoli patterns and setting up candles along the hostel walkways and corridors. Special food items and sweets were also made on the occasion in the students' mess.

**Makara Sankranti**

Makara Sankranti was celebrated at IITH on 13-14 January 2013 with traditional gaiety, fervour and devotion. IITH students had a Rangoli competition, lit a bonfire in the hostel campus, and flew kites all day long.

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FUNDED RESEARCH PROJECTS 2012-13

Dr Anindya Roy, DBT, Role of Hypoxia in DNA Damage and Repair, 2013-16, Rs 41 Lakhs.

Dr NK Raghavendra, DBT, Design and Development of Inhibitors of Human LEDGF/p75 and HIV Integrase Interaction for Efficient Reduction of Viral Gene Expression; 2013-16, Rs 77.83 Lakhs.

Dr NK Raghavendra, DBT, Molecular Determinants of Catalytically Inactive Variants, MMS2 and UEV1A, for specificity of UBC13-E3 Ligase Interaction in Signaling Innate Immune Response and Post-replication DNA repair, 2013-16, Rs 26.678 Lakhs.

Dr Thenmalarchelvi Rathinavelan, DBT, Structural insights into RNA duplexes comprising trinucleotide repeat expansions and their implications in alternative splicing misregulation by MBNL1, 2013-16, Rs 41.81 Lakhs.

Dr Anand Mohan, DST (Fasttrack Scheme for Young Scientists), Computational simulation of blood flow in stenosed geometry: Insights into the progress of atherosclerosis, 12/2012 to 11/2015, Rs 11.64 Lakhs.

Dr Narasimha Mangadoddy, National Mineral Development Corporation (NMDC)-Hyderabad, Improving the efficiency of dense medium cyclone separating the high NGM Coal samples using GPU based CFD and PEPT methods, 3 years, 1.99 Crores.

Dr Subramaniam KV, DST, Development and evaluation of self-curing, User friendly geopolymers for structural applications, 2013-16, Rs 79.57 Lakhs.

Dr B. Umashankar, Department of Science & Technology, Restrained Earth Structures for Sustainable Infrastructure, 2012-14, Rs 22.4 lakhs.

Dr Sireesh Saride, Department of Science and Technology (DST), 'Dynamic Behavior of Geocell Reinforced Pavement Subbase and Subgrade Layers', Fast Track Scheme for Young Scientists, 2012-15, Rs 22 lakhs.

Dr Amirtham Rajagopal, DST, 'Multiscale modeling of damage in materials', Fast Track Scheme for Young Scientists 2012-15, Rs 8.68 Lakhs.

Dr Amirtham Rajagopal, Defence Research Development Organization (Aeronautical Research and Development Board), 'Isogeometric Meshfree Analysis of Composite Plates', 2011-13, Rs 6.32 Lakhs.

Dr Suriya Prakash, DST, Resilient and Sustainable Fiber Engineered Masonry Systems for Rural India, 2012-17, Rs 25 Lakhs.

Dr Shashidhar T, DST Fast Track, Permeable Biobarrier to contain Cr(VI) in contaminated aquifers, 3 years, Rs 11.1 Lakhs.

Dr Shashidhar T, Centre for World Solidarity (CWS), Digital Hydro-Geologic And Groundwater Quality Framework Modeling-A Case of Six Gram Panchayats in Warangal and Anantapur Districts, Andhra Pradesh, 1.5 year, Rs 18 Lakhs.

Dr Haripriya Narasimhan, Wellcome Trust (UK) 'A disease of globalisation? Exploring Discourse on Type 2 diabetes in Chennai, India Duration, 2012-15, Rs 4.52 Lakhs.

Prof Eswaran (Co-PI: Dr Asudeb Dutta, Dr Ketan, Dr Raja Banerjee, and Dr B Venkatesham), MCEME, Secunderabad, Design and Development of a System for ICV BMP II for Condition-Based Monitoring (CBM) in a Networked Environment, March-2013-Feb 2014, Rs 47 Lakhs.

Prof Eswaran (Co-PI: Dr Asudeb Dutta, Dr Ketan, Dr Raja Banerjee, and Dr B Venkatesham), Refurbishment of BRDM-2 Vehicle, MCEME, Secunderabad, Dec-2012-Dec 2013, 39 Lakhs.

Dr Ramji M, Indian Space Research Organization (ISRO), Whole field strain measurement using Digital Reflection Photoelasticity, 2012-14, Rs 12.9 Lakhs.

Dr Bheemarjuna Reddy Tamma, KDDI R&D Laboratories, Inc., Japan, Multi-link communication technology, April 2012 to March 2013, USD 15,000.

Dr Bheemarjuna Reddy Tamma, Uurmi Systems, Hyderabad, Wireless Networks, January 2013 to December 2014, Rs 7,20,000.

Dr Tarun K Panda, Council of Scientific & Industrial Research (CSIR), Novel Pincer Ligands in Lanthanide Chemistry when the donor atoms play the key role in the catalysis, Rs 11.00 Lakhs.

Dr Sharada S, CSIR, New Synthetic Methods for the Synthesis of Novel Heterocyclic Compounds via Multicomponent & Cycloaddition Reactions, 3 Years, Rs 14.00 Lakhs.

FUNDED RESEARCH PROJECTS 2012-13

Dr Suhash Ranjan Dey, 'Feasibility studies on joining austenitic stainless steel with other application-based alloys using friction stir welding process'; Funding agency: BRNS, DAE, Rs 13.65 lakhs SERC-DST, Synthesis and Sintering of Ultrafine Grained MAX Phase Compounds, 3 years, Rs 49 Lakhs.

Narendra Sahu, one project is granted by DST for three years. Title: 'Asymmetric inert fermion doublet dark matter (DM) and its probe at ongoing DM search experiments', Rs 16.5 Lakhs.

Dr Kiran Kuchi, Samsung USA, Performance Limits of Cloud Radio, December 2012 to Dec 2014, USD 100K.

Dr Rajalakshmi, DiT, IoT for Smarter Healthcare, 3 years, Rs 3.96 Crores.

Dr Rajalakshmi, KDDI Japan, Mobile Sensor Networks, 1 year, USD 25000.

Dr Sri Murty Kodukula, DIT, Prosodically Guided Phonetic Engine for Searching Speech Databases in Indian Languages, 2 years, Rs 60.2 Lakhs.

Dr Sri Murty Kodukula, Speech Ware Net, 'i-vector based Speaker Recognition System', 6 months, Rs 2.5 Lakhs.

Dr Sri Murty Kodukula, Speech Ware Net, 'Keyword Spotting in Telugu', 6 months, Rs 2.25 Lakhs.

Dr Sri Murty Kodukula, Speech Ware Net, 'Keyword Spotting in Indian English', 6 months, Rs 2.25 Lakhs.

Dr SG Singh, DIT, Low temperature and low pressure Cu-Cu fine pitch bonding for vertical (3-D) integration, 3 Years, Rs 279 Lakhs.

Dr Vaskar Sarkar, Hitachi India Limited, Microgrid, Oct. 2012-March 2013, Rs 20 Lakhs.

Dr Soumya Jana, DIT, Govt of India - Indo-US project: Green sEnsor Network for alr qUality Support (GENIUS), 2 years, Rs 63 Lakhs.

Dr Ashudeb Dutta, MCIT DIT, IoT for Smarter Health Care, 3 years, Rs 392 Lakhs.

Dr Ashudeb Dutta, Anurag, DRDO, Design & Layout of Low Noise Receiver Frontend in 65nm RF CMOS Process Technology, 2 years, Rs 9.98 Lakhs.

Dr Ashudeb Dutta, RCI, INDIA, Design and fabrication of MEMS phase shifter, 15 months, Rs 9.98 Lakhs.

Dr Ashudeb Dutta, Austria Microsystem, Multi-input Multioutput MIMO with low ripple DC-DC converter for Automobile application, PhD student fellowship.

Dr Ashudeb Dutta, Redpinesignals, Microscale energy harvesting DC-DC converter for WiFi chip (sponsored MTECH), M.Tech student fellowship Awards.

Dr Renu John, DST, 3-D Volumetric Imaging of Cells using Digital Holographic Microscopy with Nanometric Sensitivity, 2012-15, Rs 35 Lakhs.

PRESENTATIONS

(At National / International Conferences and Reputed Institutes)

Aravind Kumar M and Raghavendra NK; Molecular determinants of catalytically inactive variants, MMS2 and UEV1A, for specificity of UBC13; Held at Taj Gateway, Jodhpur, Rajasthan, organized by IndiaBioScience, 10-14 February.

Prasanna Redapang, Pratap Vanka, Kirti Chandra Sahu, A study of pressure-driven displacement flow of two immiscible liquids using a multiphase lattice Boltzmann approach, 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, California, 18-20 November 2012.

Kirti Chandra Sahu and Rama Govindarajan, Linear stability of double-diffusive two-fluid channel flow, 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, California, 18-20 November 2012.

Manoranjan Mishra, Anne De Wit and Kirti Chandra Sahu, Double diffusive effects between two miscible fluid flows in a channel, 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, California 18-20 November 2012.

George Karapetsas, Kirti Chandra Sahu and Omar K Matar, Thermocapillary motion of a droplet on an inclined plate, 65th Annual Meeting of the APS Division of Fluid Dynamics, San Diego, California, 18-20 November 2012.

DS Monder, K Karan, An atomistic model for sulfur poisoning of SOFC anodes, International symposium on Simulations and Measurements for electrochemistry in Solid oxide fuel cells 2013, Tokyo, March 2013.

Kishalay Mitra, Parameteric Sensitivity through Evolutionary Optimization under Uncertainty Approach, Genetic Algorithms in Materials Design and Processing, 20th conference on Computer Methods in Materials Technology (KomPlasTech 2013), Zakopane, Poland, 13-16 January 2013.

Kishalay Mitra, Optimization Methods and its application to Process Industries, Aditya Birla Group Simulation Conference - 2012, Mumbai, 6 December 2012.

Kishalay Mitra, Optimal Process Conditions for the Controlled Branching of Polymer: Multi-objective

Evolutionary Approach, Third International Conference on Natural Polymers & Biomaterials (ICNP - 2012), Kottayam, Kerala, India, 26-28 October 2012,

Ravi Gujjula, Narasimha M, CFD modeling of gas-solid flow patterns in an internally circulating fluidized bed with a draft tube, ICCMS 2012, Novotel, 7-9 December 2012

Balraju Vadlakonda, Narasimha M, Simulating water-air dispersive flow in Bubble column and Column Flotation using Two-fluid model, ICCMS 2012, Novotel, 7-9 December 2012

Narasimha M, CFD Modelling for Coal Preparation Industries: Exploration of new designs, Invited talk at National Seminar on Coal Preparation Technology-CPT-2013, Dhanbad, 22-24 February 2013.

Narasimha M, Multi-phase CFD modelling in Minerals processing: A Few Case Studies, Invited talk at CERACAM, University of Cape Town, 12 May 2012.

Vishnu P Yadav, Sunil K Maity, Debaprasad Shee, Etherification of Glycerol with Ethanol Using Cation Exchange Resin. CHEMCON, Dr BR Ambedkar National Institute of Technology, Punjab, India, 2012.

Vimala Dhanala, Sunil K Maity, Debaprasad Shee, Vinod M Janardhanan, Steam Reforming of Isobutanol for the Production of Synthesis Gas over Ni/Al₂O₃ Catalyst. CHEMCON, Dr BR Ambedkar National Institute of Technology, Punjab, India, 2012.

Pankaj Kumar, Sudhakara Reddy Yenumala, Sunil K Maity, Debaprasad Shee Hydrodeoxygenation of Stearic Acid Using Supported Nickel Alumina Catalysts. CHEMCON, Dr BR Ambedkar National Institute of Technology, Punjab, India, 2012.

PV Chandra Sekhar, Debaprasad Shee, Sunil Kumar Maity, Hydrodeoxygenation of 1-Octanol. CHEMCON, Dr BR Ambedkar National Institute of Technology, Punjab, India, 2012.

Sudhakara Reddy Yenumala, Sunil K. Maity, Reforming of Vegetable Oil: A thermodynamic Equilibrium Analysis. International Conference on Advances in Chemical Engineering (ACE 2013), IIT Roorkee, India, 2013.

...PRESENTATIONS (At National / International Conferences and Reputed Institutes)

Vishnu P Yadav, Sunil K Maity, Debaprasad Shee, Utilization of glycerol: etherification with ethanol. International Conference on Advances in Chemical Engineering (ACE 2013), IIT Roorkee, India, 2013.

Prashil Lakhete, Vinod M Janardhanan, Modeling and controlling catalytic plate reactor for fuel cell application, MaCKIE 2013, IITM, India, 3-4 February 2013.

Srinivas Appari, Olaf Deutschmann, Vinod M Janardhanan, Microkinetic modeling of catalyst poisoning and regeneration during biogas reforming, ISCRE-22, Maastricht, the Netherlands, 2-5 September 2012.

Anitha M, Tinkle, Chugh, Kishalay, Mitra, Saptarshi, Majumdar, Effect Of Live Radical Species In Controlled Branching Of Bulk Free Radical Polymerization System: A Multi Objective Evolutionary Approach, International Conference on Advances in Chemical Engineering (ACE 2013), IIT Roorkee, India, 22-24 February 2013.

Dr Subramaniam, KV, Precast Bridges Post-tensioned for continuity: Review and Case Study, International Conference cum exhibition entitled 'Implementation Challenges in Precast Construction for Buildings and Infrastructure Projects', ICICPC-2013, GVP College of Engineering, Visakhapatnam, 22-23 April 2013.

Dr Subrahmaniam KV, Cementing the Future: Sustainable Construction Materials, National Conference on Sustainable Construction Materials and Technologies (SCMAT), National Institute of Technology Warangal, 15-16 March 2013.

Dr. Subramaniam, KV Fluid-Structure Interaction in Blast Analysis of Structures, International Conference on Computational Mechanics and Simulation, IIT Hyderabad, 2012.

Dr. Subramaniam, KV Sustainable Infrastructure Development: An Indian Perspective, cSUR-UT International Workshop Agenda for Sustainable Asian Cities and Regions, The University of Tokyo, Tokyo, Japan, 30 November - 4 December 2012.

Umashankar Balunaini, Soil Investigations and Ground Improvement Techniques in Infrastructure Development, Engineering Staff College of India, ESCI Campus, Hyderabad, 2012.

Umashankar Balunaini, Soil Investigation, Testing an Interpretation of Results & Foundations, National Academy of Construction, Hyderabad, 2012.

Umashankar Balunaini, Application of Plaxis Programs for Geotechnical Design, Organized by Plaxis AsiaPac & Ramcaddys, The Park Hotel, Hyderabad, 2013.

Sireesh Saride, Vijay Rayabharapu and Suraj Vedpathak (2012) Resilient Behavior of Planar Geotextile Reinforced Sand Subgrades, In the proceedings of Asiafuge 2012, Indian Institute of Technology Bombay, Mumbai- 400076, India, 14-16 November 2012.

Amirtham Rajagopal and Umesh Bassappa, Higher order natural element analysis of Cahn- Hilliard phase field model for strongly anisotropic systems, World congress on computational mechanics, WCCM 2012, 8-13 July 2012, Sao Paulo, Brazil.

Amirtham Rajagopal and Mahendra Kumar Pal, Generalized finite element method for fracture analysis, 4th International Congress on Computational Mechanics and Simulation (ICCMS 2012), IIT Hyderabad, 9-12 December 2012.

Debraj Bhattacharya, Treatment of Industrial Wastewaters Using Anaerobic Membrane Bioreactors, NIT Calicut, Kozhikode, July 2012.

Debraj Bhattacharya, Degradation of Textile Dyes and Color Removal in Advanced Bioreactors Systems, NIT Calicut, Kozhikode, July 2012.

Suriya Prakash S, KVL Subramaniam, Towards damage-based design approach for RC bridge columns under combined loading using Smart Sensors, International Workshop on Smart Materials and Structures, IISc Bangalore, 26-30 June 2012.

Shashidhar Thatikonda, Integrated Management of Degraded Soils and Land Conservation for Reuse, Conference on Environmental resource conservation Reduce, reuse and recycle, CII Andhra Pradesh, Hotel ITC Kakatiya: Hyderabad, 20 December 2012

Shashidhar Thatikonda, Contaminant Transport Modeling-An Overview, Training programme on 'Remediation Technology and Modelling of Assessment of Ground Water Contamination', NGRI campus, Hyderabad, 21-25 January 2013

KBVN Phanindra, 'Geo-statistical Applications in modeling Groundwater Profile', Invited Lecture, National Geophysical Research Institute (NGRI), Hyderabad, January 2013.

KBVN Phanindra, 'Modeling Surface water - Groundwater Interaction', Invited Lecture, National

...PRESENTATIONS (At National / International Conferences and Reputed Institutes)

Geophysical Research Institute (NGRI), Hyderabad, January 2013.

KBVN Phanindra, 'Geo-statistical Applications in modeling Groundwater Profile', Invited Lecture, MVGR College of Engineering, Vizianagaram, AP, February 2013.

Badri Narayan Rath, The Determinants of ICT Diffusion in Emerging Market Economies: Is there Evidence of Convergence Club?, 27th International Conference of the American Committee for Asian Economic Studies, Deakin University, Melbourne, 26-27 October 2012.

Badri Narayan Rath, Seema Narayan, Paresh Kumar Narayan, Evidence of Wagner's Law from Indian States, 49th Annual Conference of The Indian Econometrics Society (TIES), Patna University, Patna, 9-11 January 2013.

Debi Prasad Bal, Badri Narayan Rath, The Impact of Public Debt and TFP Growth on Economic Growth in India, 49th Annual Conference of The Indian Econometrics Society (TIES), Patna University, Patna, 9-11 January 2013.

Haripriya Narasimhan, Asking for directions to a journey not taken: Diabetes and Health Care Communication in Chennai. Conference - Paper presented at the International Conference on Rural South Asia: Imaging Heritage and Progress, Department of History, Babasaheb Ambedkar Marathwada University, Aurangabad, India. 4-7 January 2013.

Haripriya Narasimhan, Everyone is a doctor in this country: Looking at clinical encounters at a biomedical health care facility in Chennai, Conference - The National Seminar on 'Health Cultures and Tribal Communities: Emerging Research Agenda and Policy Shifts', Department of Anthropology, University of Hyderabad, India, Year-2-4 January 2013.

Mahati Chittem & Butow P, *Role of culture in understanding and dealing with families' requests for cancer nondisclosure: A qualitative study with Western and non-Western born oncologists*. Paper presented at the International Psycho-oncology Society 14th World Congress, Brisbane, Australia. (2012)

Mahati Chittem, Norman P, & Harris P *Reasons for and for not disclosing, illness perceptions, and*

psychological adjustment in Indian caregivers of cancer patients. Paper presented at the International Psycho-oncology Society 14th World Congress, Brisbane, Australia. (2012).

Shubha, Ranganathan, Beyond 'cure' and 'efficacy': Ritual healing and possession in the Mahanubhav sect in Maharashtra, India, 22nd European Conference on South Asian Studies, Lisbon, Portugal, July 2012.

Shubha, Ranganathan, God's Hospitals with no Superstitions! On the place of healing shrines in India, Seminar on *Health Cultures and Tribal Communities: Emerging research agenda and Policy Shifts*, Department of Anthropology, School of Social Sciences, University of Hyderabad, January 2013.

Shubha, Ranganathan, invited plenary talk on *The politics of 'indigenous healing': A study of the Mira Datar dargah in Gujarat*, International Conference on Rural South Asia: Imaging Heritage and Progress, Department of History and Ancient Indian Culture, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, January 2013.

KP Prabheesh, Optimum international reserves and sovereign risk: evidence from India, 'the 27th International Conference of the American Committee for Asian Economic Studies (ACAES)', Deakin University, Melbourne, Australia, 26-27 October 2012.

Chatterjee, Srirupa. 'Eluding 'Interpretation and Appropriation': Silence in *Black Girl / White Girl*.' Conference titled 'The Road not Taken': Explorations in Narrative Refusals, Disnarration, and Counterfactual Histories. Indian Institute of Technology Bombay, India, 1-2 March 2013.

Chatterjee, Srirupa. 'Self-Affirmation through Pain in Joyce Carol Oates's *Man Crazy*.' Conference titled Paranoia and Pain: Embodied in Psychology, Literature, and Bioscience. University of Liverpool, Liverpool, United Kingdom, 2-4 April 2012

RP Kumar, Cyber-Physical Robotic Systems: Applications and Challenges, Anniversary Symposium on Cyber-Physical Systems, Indian Institute of Science, Bangalore, 8 November 2012.

Kashfuddoja M and Ramji M, Parametric study on patch repaired CFRP laminates using FEA, WEMEP-2012, Hyderabad, India, 22-23 November 2012.

Kashfuddoja M and Ramji M, 3-D progressive failure analysis of bonded patch repaired CFRP laminates

...PRESENTATIONS (At National / International Conferences and Reputed Institutes)

under tensile load, ACMFMS-2012, IIT Delhi, India, 5-8 December 2012.

R Srilakshmi and M Ramji, Progressive Damage analysis of adhesively bonded repairs using FEA, 4th International Congress on Computational Mechanics and Simulation (ICCMS 2012), IIT Hyderabad, India, 9-12 December 2012.

Kashfuddoja M and Ramji M, Influence of Patch Shape on Performance Evaluation of Bonded Repaired CFRP Laminates, 4th International Congress on Computational Mechanics and Simulation (ICCMS 2012), IIT Hyderabad, India, 9-12 December 2012.

Vishwajeet S Bhise, Mohammad Kashfuddoja, CP Vyasarayani and M Ramji, Optimization of Composite Patch Reinforcement to Damaged CFRP Laminates, 4th International Congress on Computational Mechanics and Simulation (ICCMS 2012), IIT Hyderabad, India, 9-12 December 2012.

Jabir Ubaid, Mohammad Kashfuddoja and M Ramji, Strength Prediction of CFRP Laminates With Multiple Interacting Holes, 4th International Congress on Computational Mechanics and Simulation (ICCMS 2012), IIT Hyderabad, India, 9-12 December 2012.

Jabir Ubaid and Ramji M, Progressive Failure Analysis of Composite Panel With Two Interacting Holes, International Conference on Advancements in Polymeric Materials (APM 2013), 1-3 March Lucknow, India, 2013.

Vishwajeet S Bhise and Ramji M, Optimization of Composite Patch Reinforcement to Damaged CFRP Laminates: A Numerical and Experimental Investigation, International Conference on Advancements in Polymeric Materials (APM 2013), 1-3 March Lucknow, India, 2013.

B Venkatesham, Analysis of Breakout Noise from the Coupled Acoustic-Structural HVAC Systems, Proceedings of NSA 2012, Tiruchengode

NV Reddy, Importance of Data Exchange Format in Manufacturing, National Conference on 'Advances in Mechanical Engineering & Renewable Energy', CBIT, Hyderabad, 25-26 March 2013.

NV Reddy, Flexible Manufacturing Processes, International Conference on Materials Processing and Characterization, GRIET, Hyderabad, 16-17 March 2013.

K Pandey, Introduction to Micro and Nanotechnolgy, Inspire Science Camp, Rajdhani College, New Delhi, 25 January 2013.

K Pandey, An Overview of Micro and Nanotechnolgy, KL University, Vijayawada, 25 March 2013.

MV Panduranga Rao, Modeling and Verification of Cyber Physical Systems: The Hybrid Systems Approach, Workshop on CPS, Robert Bosch Centre for Cyber Physical Systems, IISc Bangalore.

MV Panduranga Rao, Introduction to Quantum Algorithms, Research Promotion Workshop on Introduction to Graph and Geometric Algorithms, BITS Goa.

MV Panduranga Rao, Modeling and Verification of Cyber Physical Systems: Two Case Studies, Workshop on CPS, IIT Hyderabad.

Anubhav Kumar Jain, Vaibhav Garg, Karthik Badam and Kotaro Kataoka, 'A Smartphone Application for Victim Information Gathering and Exchange in Post-Disaster Situation', ACM Asian Internet Engineering Conference (AINTEC) 2012, 2012. (Poster Presentation).

TK Panda*, RK Kottalanka, Novel Phosphinamine Ligands and Their Introduction into the Alkalimetal and Alkaline Earth Metal Chemistry, International Symposium on Organometallic Chemistry (ISOMC), Seoul National University, Seoul, Korea, 1-3 November 2012.

Ravi Kumar K, Kishor Naktode, and Tarun K Panda*- New Directions in Chemical Sciences (NDCS) - 2012, IIT Delhi, 6-8 December 2012.

S Anga, Kishor Naktode, and Tarun K Panda*- Catalyst 2013, Journey towards sustainability, Dr. Reddy's Chemistry Conclave, Hyderabad, 9-10 January 2013.

PP Bhattacharjee, G Dan Sathiaraj, M Zaid, JR Gatti 'Evolution of microstructure and texture in a multicomponent Co-Cr-Fe-Mn-Ni high entropy alloy during thermo-mechanical processing', ICMPC 2013, 2nd Annual International Conference on Materials Processing and Characterization, GRIET Hyderabad, 16-17 March 2013.

JR Gatti, PP Bhattacharjee, N Tsuji, 'Microstructure, Texture and Hardness Properties of Bulk Ultrafinegrained Al-2.5%Mg and Al-2.5%Mg-0.2%Sc Alloys Processed by Accumulative Roll Bonding (ARB), ISRS 2012, International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering, IIT Madras.

Pankaj, Suhash Ranjan Dey, Responses from friction stir welding of dissimilar aluminum alloys with

...PRESENTATIONS (At National / International Conferences and Reputed Institutes)

different pin shapes. (*Invited Talk*), 16th International Conference on the Strength of Materials (ICSM 16), Bengaluru (India), 19-24 August 2012.

BB Panigrahi and Y. Rajkumar, Synthesis and sintering behaviour of Cr2AlC fine powder, Int. Conference on Powder Metallurgy, Pune, 7-9 February 2013.

NS Reddy, BB Panigrahi, J Krishnaiah, Modeling mechanical properties of low carbon hot rolled steels, Int. Conference on Bio-Inspired Computing: Theories and Applications, 14-16 December 2012, Gwalior.

BB Panigrahi, Transition Metal Ternary Carbides: New Metallic Ceramics, Int. Conference on Advances in Materials and Processing: Challenges and Opportunities, Roorkee, 2-4 November 2012.

BB Panigrahi, Developing New Class of Ductile Ceramics: MAX Phases, National Conference on New Materials & Processes for Improving Quality of Infrastructure, Hyderabad, 19-20 October 2012.

Atul Suresh Deshpande, Hierarchically structured materials: From basic understanding to design strategies, International Conference on Design of Biomaterials (BIND-12), Indian Institute of Science, Bangalore, 9-11 December 2012.

V Kanchana, 'Fermi surface topology change in Cu₃Au-type superconducting intermetallic under pressure' at International Symposium on Science of Clusters, Nanoparticles, and Nanoscale - Materials (SOCNAM) Organized by Central University of Rajasthan and Virginia Commonwealth University at Jaipur (Rajasthan), India, 4-7 March 2013.

V Kanchana, 'Fermi surface topology change in superconducting intermetallics under pressure', at Electronic structure Approaches to Atoms, Molecules, Clusters and Solids, ACRHEM, University of Hyderabad, India, 7-11 January 2013.

Prem Pal, Silicon Micromachining in MEMS, National Workshop on Research Opportunities in Micro/Nano systems, KL University, Vaddeswaram, AP, 25-26 March 2013.

Manish Nirajan, International Conference of Computational Mechanics and materials (ICCMS) Hyderabad, December 2012.

Narendra Sahu, 'Unifying asymmetric inert fermion doublet dark matter and leptogenesis with neutrino mass', presented at Rencontres du Vietnam International conference 'Beyond the standard model

of particle physics, held at QuyNhon, Vietnam, 15-21 July 2012.

Narendra Sahu, 'Darko-Lepto-Genesis in light of 125 GeV Higgs', Invited talk presented at 'HiggsTop 2013' held at GOA, India, 25-27 February 2013.

Debasish Chaudhuri 'Stochastic Thermodynamics of Brownian Motors' at Saha Institute of Nuclear Physics, Kolkata.

V Sharma, Attosecond correlated dynamics of two electrons, (Invited Talk) in National Laser Symposium-21, BARC, Mumbai, 2013.

V Sharma, Dynamics of Autoionizing States of O₂, University of Duisburg, Duisburg, Germany, 2012.

S Narayana Jammalamadaka Magnetic Materials and data storage, DP Somayaji memorial physics lecture at Siddhartha mahila kalasala, Vijayawada, 31 October 2012.

S Narayana Jammalamadaka Ferromagnetism and dynamic response of graphene nanoribbons at Department of Physics, Pondicherry University, 15 March 2013.

J Mohanty and S Eisebitt, Finite difference micromagnetics of nanostructured magnetic element, Talk: ICCMS 2012, Hyderabad, India, 09-12 December 2012.

J Mohanty: Magnetism at nanoscale: Nano-small meets Ultra-fast, Defense Metallurgical Research Laboratory, Hyderabad, India, September 2012.

J Mohanty: Nanomagnetism, AV college, Hyderabad, India, February 2013.

R Ramu Naidu, CS Sastry, PV Jampana, 'Sparse description of linear systems and application in Computerized Tomography,' In proc. of Int. Conf. Linear Algebra, IIT Guwahati, January 2013.

D Sukumar, Banach Algebras, Workshop on Spectral Theorem at NIT Karnataka, Surathkal, Karnataka, 2013.

P Rajalakshmi, 'IoT - eHealth', IUATC Workshop, Cambridge, UK, September 2012

P Rajalakshmi, 'IoT - eHealth, Handhelad Ultrasound', IUATC Workshop, IIT Mandi, February 2013.

P Rajalakshmi, 'Wireless Air Pollution Monitoring System', Andhra University, Vishakapatnam, March 2013.

...PRESENTATIONS (At National / International Conferences and Reputed Institutes)

Detroja KP & Gudi RD (2012), Fault Isolability Analysis Based on Steady State Fault Signatures, Proceedings of 11th International Conference on Environment and Electrical Engineering (EEEIC-2012), Venice, Italy.

K Sri Rama Murty 'Feature Extraction from Speech Signals' at Osmania University, 2012.

K Sri Rama Murty 'Acoustic Theory of Speech Production' at NIT Warangal, 2013.

GVV Sharma, Performance of ML-DF cooperative systems, SRM University, Chennai, 2013.

Siva Rama Krishna Vanjari, 'Surface modification methodologies for Lab-on-chip applications', Invited Lecture, 'Recent Developments in Electro-Analytical Techniques' (RDET - 2012) National Seminar, SK University, Anantapur, 5 October 2012.

Renu John, 'Biomedical Engineering in India: Future perspectives', University College of Engineering (A), Osmania University, MEDITECH 2013, 8-9 March 2013.

Renu John, 'Optical molecular imaging, recent trends and challenges' Workshop on Bio-Imaging and Signal processing, IIT Delhi, organized by GE Technology center and FITT, IIT Delhi, 12 October 2012.

Frederick South, Marina Marjanovic, Renu John, Steven G Adie, Eric J Chaney, Krishnarao V. Tangella, Partha Ray, John Brockenbrough, Guillermo L Monroy, Jessica C Hsu, Stephen A Boppart, 'Assessment of the progression of lymph node metastases using three-dimensional optical coherence tomography', American Association for Cancer Research (AACR) Annual Meet 31 March - 4 April, Chicago, Illinois, 2012.

CONFERENCES ORGANIZED AT IITH

One-day Indo-US Workshop on 'Strides in Infra Development on Expansive and Soft Soils (IDEaS 2012)', IIT Hyderabad, 27 June 2012.

International Congress on Computational Mechanics and Simulation (ICCMS 2012), Hyderabad, India, 9-12 December 2012.

Three days Indo-Japan i.School Workshop on 'Foresight India', i.School workshop 2012, jointly organized by the University of Tokyo and the Indian

Institute of Technology Hyderabad at IIT Hyderabad, 13-15 September 2012.

Ramanujan memorial symposium-2012 was organized by the Department of Mathematics in December 2012.

Two-day Workshop on Cyber Physical Systems, IIT Hyderabad, March 2013.

CEP COURSES

Noise & Vibration course for Advanced Engineering Team, Completed, *Ingersoll Rand India*, Bangalore, 4-7 July 2012.

Powertrain NVH, Industrial Training Course, Completed, *Eaton Pvt. Ltd*, Pune, May 2012.

Powertrain NVH, Industrial Training Course, Completed, *ARAI*, Pune, and December 2012.

Noise & Vibration course, Hyderabad Technology Centre, GE Energy, and December 2012.

Fundamental Noise & Vibration, Industrial Training course, Completed, TVS Motor Company, Hosur, and February 2013.

CHALLENGE LECTURES AT IITH

'Ultra-Strong and Extra-Ductile Materials: A Gift of Nanotechnology', Prof Anantha Padmanabhan, Professor of Eminence, Anna University, Chennai, 4 April 2012.

'Mathematical Modeling and Numerical Simulations Using Finite Element Method', Prof JN Reddy, Professor and Inaugural Holder of the Oscar S Wyatt Endowed Chair in Mechanical Engineering at Texas A&M University, College Station, Texas, 8 August 2012.

'Probabilistic Methods in Cancer Biology', Prof M Vidyasagar, FRS, Cecil & Ida Green Professor, Head Bioengineering Department, The University of Texas at Dallas, 22 August 2012.

'Revisiting Newton's Laws: Possible Modification and Amazing Cosmological Consequences', Prof Amitabha Ghosh, Platinum Jubilee Senior Scientist of The National Academy of Sciences India & Hon. Distinguished Professor, Bengal Engineering & Science University, Shibpur, 17 October 2012.

'How Can You Become a Champion Innovator', Dr Hemant Kanakia, President, Kanakia Ventures LLC, 30 January 2013.

'Indigenous technology in a Globalized World: A Case Study' or 'Resolving Atoms in our Backyards', Prof Deshdeep Sahdev, Department of Physics, IIT Kanpur, 20 February 2013.

'Chemical Industry (CI): Retrospect and Prospect', Prof MM Sharma, FRS, Emeritus Professor of Eminence, Institute of Chemical Technology, Mumbai, Kothari Research Professor, Jawaharlal Nehru Centre for Advanced Scientific Research, Member, Scientific Advisory Council to the Prime Minister, chairman, Board of Governors, IIT Madras, 6 March 2013.

'Mathemagical Black Holes, Chaos and Fractals', Prof AK Mallik, INSA Senior Scientist, Honorary Distinguished Professor, Bengal Engineering and Science University Shibpur, 20 March 2013.

INVITED TALKS AT IITH

Novel insights into regulation of alternative NF- κ B signaling: A promising step towards understanding Lymphoid malignancies, Dr Sivakumar Vallabhapurapu, University of Cincinnati, USA.

Understanding the molecular mechanisms of cancer metastasis, Dr Divijendra Natha Reddy, Sirigiri, Department of Biochemistry and Mol Biology George Washington University.

Characterization and Therapeutic Targeting of ETS Negative Prostate Cancer, Dr Bushra Ateeq, Michigan Center for Translational Pathology, Ann Arbor, USA.

Mechanistic insights into the histone code and cytosine methylated DNA read-out and

interpretation by chromatin associated modules, Dr Rajakumara Eerappa, FIRC Institute for Molecular Oncology Foundation (IFOM), Milan, Italy.

Circadian clock protein Cryptochrome regulates the expression of pro-inflammatory cytokines, Dr Rajesh Narsimhamurthy, Salk Institute of Biological Sciences, La Jolla, USA.

Applied Science - From Textbook to Test Tube, Dr Satyam Subramanyam, Director - Drug Development, Dr. Reddy's Laboratories Ltd.

Bioinformatics Today, Dr Venkat R Yeturu, Associate Director, Analytics, Biologics Division, Dr. Reddy's Laboratories Ltd, Hyd.

...INVITED TALKS AT IITH

Vaccines, Dr Dev Chandran, Indian Immunologicals Ltd, Hyderabad.

Phage Enzybiotics, CB Appaiah, Senior Scientist and Team Leader, Molecular Biology Department, Gangagen Biotechnologies Pvt Ltd, Bangalore.

Recent advances in drug delivery systems for biotherapeutics, Dr Rajiv Ahuja, Senior Scientist and In Charge; Novel Drug Delivery Systems (NDDS), Transgene Biotek Ltd.

The Quest for Zero-Effort Indoor Localization, Dr Venkat Padmanabhan, Microsoft Research India

Efficient Image Segmentation Using Enhanced AdaBoost Algorithm, Dr Baidya Nath Saha, Wake Forest School of Medicine, USA.

Making sense out of where humans look: Extracting scene semantics from human eye-movements
Dr Harish Katti, Indian Institute of Science Bangalore.

Processing in Medicine and Biology: Problems in Image Reconstruction and Shape Analysis,
Dr Suyash Awate, Scientific Computing and Imaging (SCI) Institute at the University of Utah Image

Resilience to Clustering: Analyzing the Dynamics in Evolving Networks, Bivas Mitra, Samsung Electronics.

Scalable Platforms for ‘Big Data’ Applications,
Yogesh Simmhan, University of Southern California.

Atlanta Efficient Quantum Algorithm for Computing the Circumference of Infrastructures, Dr Pradeep Sarvepalli, Georgia Institute of Technology.

Towards Behavioral Intelligence: Machine Learning Methods and Applications in Assisted Living, Vineet Balasubramanian, Arizona State University.

Aligarh Muslim University, Bioinspired Conjugated Macromolecular Materials and Devices, Prof Faiz Mohammad, Dept of Applied Chemistry, 22 November 2012.

Rattle and sort: Understanding segregation in granular mixtures, Prof Ishan Sharma, Department of Mechanical Engineering, IIT Kanpur, Shake, 17 April 2012.

A Micromechanical approach to Thermomechanics of Pebble Beds in Fusion Reactors, Dr Ratna Kumar Annabattula, Karlsruhe Institute of Technology, Germany, 27 June 2012.

Some instability problems in stratified flows,
Dr Harish Dixit, Department of Mathematics, University of British Columbia, 2 July 2012.

Energetic Nanoparticles as Fuel Additives for Enhanced Performance in Propulsion Systems, Dr S Karmakar, Dept of Mechanical Engineering, Louisiana State University, 18 July 2012.

Glasgow, Modelling fluid flows in micro and nano devices: the challenge of non-equilibrium behavior, Dr Nishanth Dongari, University of Strathclyde, 17 August 2012.

Development of micro and nanotechnology, Prof Rudra Pratap, Chairperson, Center for Nanoscience and Engineering, Indian Institute of Science, Bangalore, 31 August 2012.

The Gateway to Libration! Through Education?, Prof Satish V Kailas, Department of Mechanical Engineering, IISc Bangalore, 21 September 2012.

Solid fuel combustion - from wood to rocket propellants, Dr S Varunkumar, Department of Aerospace Engineering, IISc Bangalore, 5 October 2012.

Birth of Mechanical Engineering and Future, Prof Amitabha Ghosh, INSA Senior Scientist & Honorary Distinguished Professor, Bengal Engg and Science University, Shibpur, 16 October 2012.

Visualizations of Welding Arcs, Prof M Tanaka, Japan Welding Research Institute, Osaka University Japan, 6 November 2012.

Visualization of phase transformation of steel weld, Prof H Terasaki, Japan Welding Research Institute, Osaka University, Japan, 6 November 2012.

Novel bonding process using nanoparticles for electronics packaging, Prof H Nishikawa, Japan Welding Research Institute, Osaka University Japan, 6 November 2012.

Fatigue life assessment of steel based on an extended cyclic plasticity theory, Prof S Tsutsumi, Japan Welding Research Institute, Osaka University Japan, 6 November 2012.

An Advanced Integer Programming Based Hybrid Optimization Search Methodology for Robotic Assembly of Electronic Printed-Circuit Boards, Dr Anupam Seth, Lead Technical Architect at American Express Technologies' (AET) Big Data Labs, USA, 28 December 2012.

Stochastic simulations and scaling law for field emission-driven microscale gas breakdown, Dr A Venkatraman, School of Aeronautics & Astronautics, Purdue University, 8 January 2013.

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Lattice Strain Partitioning for Quantification of Deformation Mechanisms in Nanocrystalline Materials, Dr Viswanath R Chinthapenta, Dept. of Aerospace Engg, IISc Bangalore, 16 January 2013.

Design Under Uncertainty with Physics-based Models - Laser Peening Study, Dr Ramana Grandhi, Dept. of Mechanical Engg, Wright State University, 6 February 2013.

Nonlinear light scattering spectroscopy and its relevance for probing the biological molecules at hidden soft matter and planar interfaces, Dr Kailash, Laboratory for Fundamental Biophotonics, Institute of Bioengineering École Polytechnique Fédérale de Lausanne, Switzerland, 8 April 2013.

Resonant and non-resonant x-ray scattering studies on the rare earth iron borate multiferroics and on the iron chalcogenides, Dr Dinesh, Deutsches Elektronen-Synchrotron (DESY), Notkestrasse 85, Hamburg, Germany, 8 April 2013.

Quark and Gluon Angular Momenta Contributions to Nucleon Spin, Dr Mridupawan Deka, JINR, Russia, 5 March 2013.

Light-Sound interaction in micro and nano-structures: novel physics and applications, Dr Ravi Pant, CUDOS ARC Centre of Excellence, Institute of Photonics and Optical Science, School of Physics, University of Sydney, Australia, 13 February 2013.

NMR as a local probe for ferromagnetic correlation and quantum criticality in 3d and 4f electron systems, Dr Panchanan Khuntia, Max Planck Institute for Chemical Physics of Solids, Dresden, Germany, 6 February 2013.

Energy flow from a battery to a conducting wire, Prof MK Harbola, Department of physics, Indian Institute of Technology, Kanpur, 10 January 2013.

Transport: from passive diffusion to active swimming, Dr P Sekhar Burada, University of Gottingen, Germany, 3 January 2013.

Ultra high intense laser matter interaction and their applications, Dr Bhuvanesh Ramakrishna, Institut für radiation Physik, Helmholtz Zentrum, Dresden Rossendorf, Germany and Centre for Plasma Physics, School of Mathematics and Physics, The Queen's University of Belfast, UK, 5 December 2012.

Free energy landscape reconstruction of native folding prion protein, Dr Amar Nath Gupta, Department of Physics, University of Alberta, Edmonton, AB, Canada, 30 November 2012.

Nonequilibrium matter, Prof Sriram Ramaswamy, TIFR Centre for Interdisciplinary Sciences, Hyderabad, 6 November 2012.

Frontiers of Particle Physics, Prof Brajesh C Choudhary, Delhi University, 31 October 2012.

Total control on Oxide Nanostructures, Prof Hidekazu Tanaka, Head, Department of Functional Nanomaterials and Nanodevices, Nanoscience and Nanotechnology Center ISIR, Osaka University, 11 October 2012.

Fe-based Nanocrystalline Soft Magnetic Materials, Dr Bhaskar Majumdar, Advanced Magnetics Group, DMRL Hyderabad, 12 September 2012.

Higgs Boson, Prof S Raychaudhuri, TIFR, 5 September 2012.

Magnetically driven electronic phase separation in rare-earth hexaborides, Dr Pintu Das, Goethe University, Frankfurt, 23 August 2012.

New experimental insight into the mechanisms of nanoplasticity, Prof W Skrotzki, Institut für Strukturphysik, Technische Universität Dresden, D-01062 Dresden, Germany.

Existence Theory for solutions of highly nonlinear equations and degree theory, Prof PC Das, NISER Bhubaneshwar.

Uniformly conditioned approximate bases of a spectral subspace, Prof Balmohan V Limaye, IIT Bombay.

Introduction to Hedging of Financial Derivatives: A Discrete-time approach, Dr Easwar Subramanian, Scientist in TCS Innovation Labs, Hyderabad.

On the topology of some random complexes built over stationary point processes, Dr D Yogeshwaran, IIT-Technion, Israel.

Promotion of cultivation and processing of medicinal and aromatic plants (MAPs) and phytochemical exploration of MAPs for future drug discovery, Dr Sastry Kakaraparthi and Dr J Kotesh Kumar, Central Institute of Medicinal and Aromatic Plants, 3 April 2012.

Surface-enhanced Raman Spectroscopy: Applications in Sensor Devices, Dr Atanu Sengupta, Senior Scientist, Real time analyzers Inc. USA, 6 June 2012.

Development of a robust algorithm for multi-objective optimization (MOO) and its application to

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industrial FCCU, Dr Sankara Rao Boddupalli, Dept. of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology, 11 July 2012.

Electrohydrodynamics in drops and capsules, Dr Rochish Thaokar, Associate Professor, Department of Chemical Engineering, IIT Bombay, 8 Aug 2012.

Models of liquids and model parameters, Prof P Ray, Department of Chemical Engineering, University of Calcutta, 12 September 2012.

Granular Flow modelling and nuclear imaging in tumbling mills, Dr Indresan Govender, Department of Physics, University of Cape Town, 3 October 2012.

Process Safety, Prof JP Gupta, Director, Rajiv Gandhi Institute of Petroleum Technology, 16 November 2012.

Catalyst Coating in Micro Channel Reactors using Drop on Demand Inkjet Printing technology, Dr Aswani Moglicherla, Scientist, Institute for Micro Process Engineering, Karlsruhe Institute of Technology, Germany, 2 January 2013.

Dynamics and Functionality of Nanoparticles via the Colloidal Route, Dr Rajdip Bandopadhyaya, Associate Professor, Dept. of Chemical Engineering, IIT Bombay, Structure, 9 January 2013.

Numerical prediction of nanoparticles formation in flames, Dr Thirumalesha Chittipotula, International Max Planck Research School, Magdeburg, Germany, 6 February 2013.

Multiscale modeling in heterogeneous catalysis: A critical review, Prof Olaf Deutschmann, Karlsruhe Institute of Technology, Germany, 8 February 2013.

Effect of shape & orientation of heated objects on free convection in power-law fluids, Prof Raj Chhabra, Department of Chemical Engineering, IIT Kanpur, 20 March 2013.

Bioinspired Conjugated Macromolecular Materials and Devices, Prof Faiz Mohammad, Dept. of Applied Chemistry, Aligarh Muslim University, 22 November 2012.

Translational Biomedical Engineering: Innovating at the Scale of Life, Dr Jonathan Pillai, Stanford Biodesign Fellow.

Cytoplasmic acto-myosin network determine nuclear shape, Dr Anoop V Cherian, Max Planck Institute of Biochemistry, Germany.

A synergy-based brain-machine interface for dexterous control of prosthetic hands, Dr Ramana Vinjamuri, Assistant Professor, John Hopkins University.

Molecular Imaging: Future Trends, Dr Sikandar Shaikh, Consultant Radiologist, Yashoda Hospitals, Hyderabad.

Detection of disorders in the spinal cord from MR images, and Segmentation of the liver from CT images, Dr Suryaprakash Kompalli, Research Scientist HP Labs Bangalore, India.

Raman Spectroscopy studies and its applications in early diagnosis of Cancer, Dr Murali Krishna, Cancer Research Institute, Advanced Center for Treatment, Research and Education in Cancer (ACTREC), Tata Memorial Center (TMC) Mumbai, India.

Anharmonic acoustic technique for detection of surface-bound particles, Dr Sourav Ghosh, Post Doctoral Fellow, Cambridge University UK.

Insight into DNA intercalation using combined optical tweezers and line scanning fluorescence microscopy, Dr Chandrasekhar Murade, Post Doctoral Fellow, University of Twente, Netherlands.

AWARDS AND RECOGNITIONS

Dr Thenmalarchelvi Rathinavelan, Young Innovative Biotechnologist Award-2012, DBT - Government of India.

Dr Kirti Sahu, National Academy of Sciences India (NASI) - Young Scientist Platinum Jubilee Award (2012).

Dr Kirti Sahu, Indian Academy of Sciences (IAS) - Young Associate (2012-2015).

Dr Sireesh Sirade, Elected as Editorial Board Member for Institution of Civil Engineers (UK) Proceedings of ICE Journal Ground Improvement (2012-2015).

Dr Suriya Prakash, Ramanujan Fellowship, Department of Science and Technology.

Dr Shashidhar T, Received fellowship under the research excellence program USC-India (PEIN) to visit University of Santiago De Compostela, Spain.

Dr Saptarshi Majumbar Inducted as 'Project Review

Committee' member for 'Alternate Fuel' track of DST-TSDP, Govt. of India.

NVIDIA Best Paper Award in ICCMS 2012 for the paper titled 'VOF Based Two-Phase Flow Solver on GPU Architecture'.

Dr TK Panda, Selected as Visiting Researcher in Japan (May 2012-July 2012).

Dr Suhash Ranjan Dey, DAE Young Scientist Research Award 2012 from BRNS, DAE for the research project 'Feasibility studies on joining austenitic stainless steel with other application-based alloys using friction stir welding process'.

Dr Suhash Ranjan Dey was invited as Alexander von Humboldt Guest Scientist at Materials Science and Engineering, Ruhr-University Bochum, Germany, May-July 2012 for 2½ months.

V Kanchana: Elected as Associate Fellow of Andhra Pradesh Academy of Sciences (AFAPASc) in 2012.

EXCELLENT PLACEMENT RECORD

IIT Hyderabad has just completed its placement season for the 2013 graduating batch, which started in December 2012. A total of 176 students have registered for the placements, including B.Tech, M.Tech and M.Sc students from 8 departments. More than 52 companies participated in the process making a total of 118 offers.

Noted companies like Broadcom, Strand Life Science, Morgan Stanley, Paypal Qualcomm, Deloitte, Xilinx, Google, Mercedes Benz and Microsoft have contributed to the majority of offers. Works

Applications, an ERP software firm based in Tokyo, made the highest offer of Rs 35 lakhs per annum for a Computer Science student. The average package worked out to be Rs 9 lakhs per annum.

Many students, inclined for higher education, have bagged admissions in some of the prestigious universities like Stanford, University of Tokyo, Purdue University, London School of Economics, University of Michigan, Columbia University, EPFL, IIM Kolkata, IIM Lucknow, IIT Madras and IIT Bombay.

RESEARCH LABS AT THE INSTITUTE

Infrastructure development for research and teaching had always been of prime focus at IITH. All departments have been developing laboratories for teaching and research. Some of the newly commissioned equipments in the fiscal year of 12-13 are shown below.

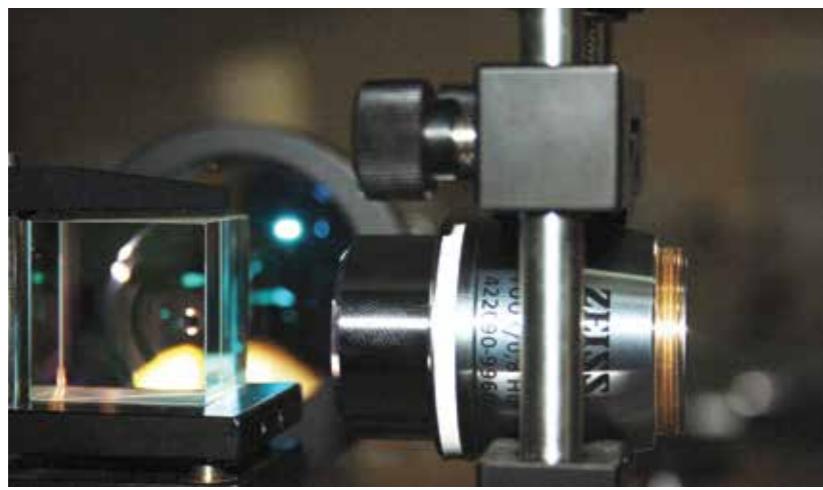
Department of Biomedical Engineering



Biomedical Optical imaging laboratory



Experimental set up: Digital holographic imaging



Digital holographic microscopy for live cell imaging

Department of Biotechnology



Microplate Readers



Microplate Readers

Department of Chemical Engineering



Small Angle X-Ray Scattering



Refrigerator Centrifuge



PECVD



Flow Cytometer

Batch Reactor



Ball Mill

Department of Chemistry



Teaching-cum-research Labs



Department of Civil Engineering



25KN UTM - Wire Testing Machine



Geosynthetic Tensile Machine



Automated Geosynthetic-Soil Interface Shear Test Apparatus



Department of Civil Engineering



Structural Engineering Lab

Department of Electrical Engineering



3D lightfield display (Holovizio 721RC) installed at the Immersive Multimedia Lab



Multilevel inverter for Induction motor applications

Department of Electrical Engineering



NI-PXIe-1062Q with Interface Module



NI-PXIe-1062Q

Department of Material Science & Engineering



SEM-Carl-Zeiss



Pulsed laser deposition set up

Department of Mechanical Engineering



Robotic Welding Machine Twin-Wire



Optical Microscope



Polishing Machine



Electro-Polisher

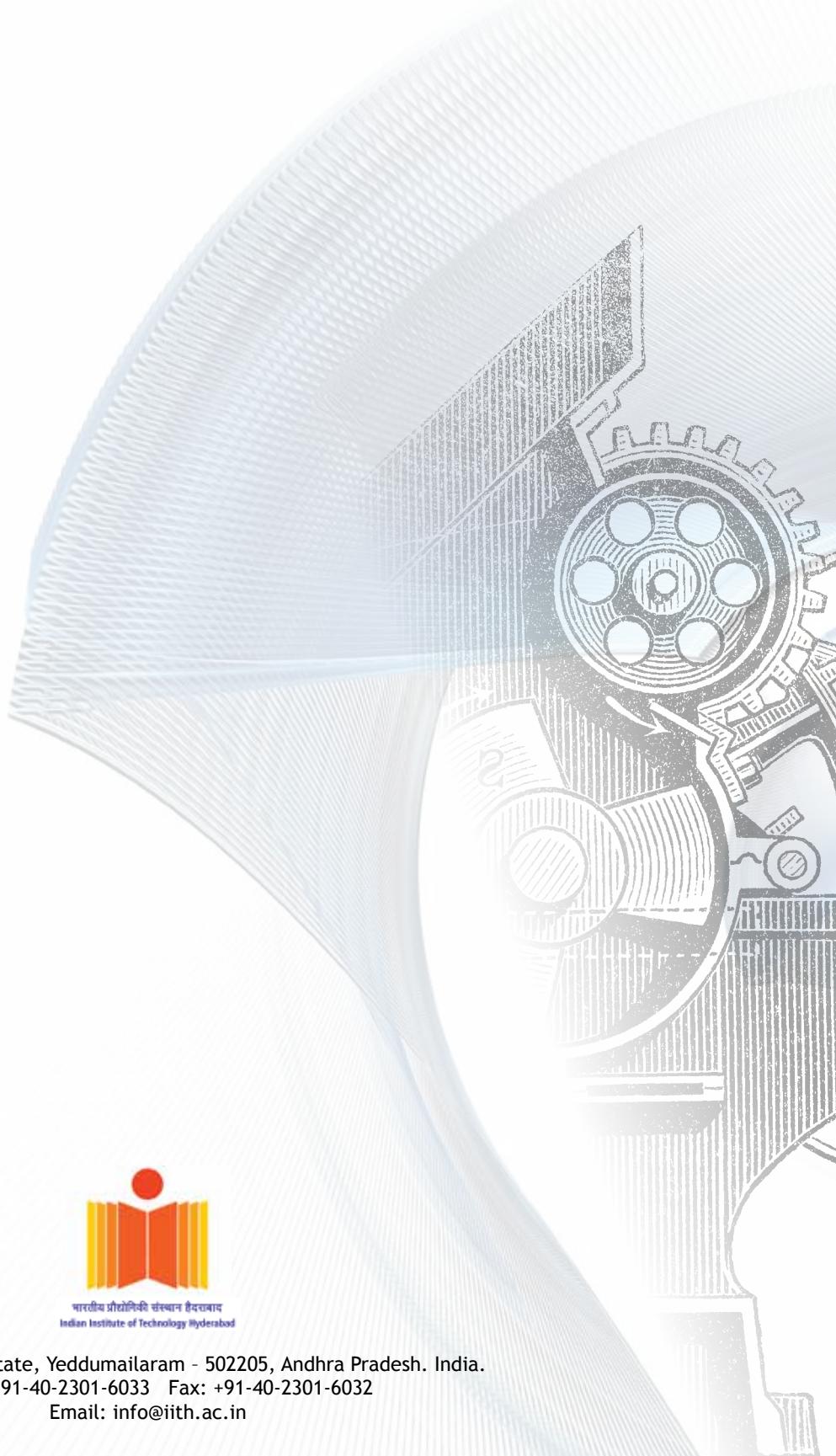
Department of Physics



Mask Aligner



RF & DC Magnetron Sputtering



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