

# **FIFTY SECOND CONVOCATION**

**JULY 24, 2015**

**DIRECTOR'S REPORT**

**PROFESSOR BHASKAR RAMAMURTHI**  
**Director**



**INDIAN INSTITUTE OF TECHNOLOGY MADRAS**  
**CHENNAI - 600 036**



Chief Guest, Padma Bhushan  
Professor Manjul Bhargava;  
Chairman, Board of Governors,  
IITM, Dr. Pawan Goenka;  
Members of the Board of  
Governors; Members of the Senate;  
Graduands; Distinguished Invitees;  
Colleagues and Students,

On the day of the 52<sup>nd</sup> convocation, I  
am proud to report that we are  
crossing another milestone – we are  
awarding more than 2000 degrees in  
a single year for the first time. The  
number of Ph.D degrees awarded  
has increased by 18% to 212 this  
year, crossing 200 for the first time.  
Our full complement of 790 UG and



Dual-Degree students, after the  
capacity increase effected between  
2008-10, graduates today.

The Institute published last year its  
Strategic Plan for 2014-2020,  
wherein our targets have been spelt  
out for all the activities that inform  
life and work at the Institute. I now  
share with you some snapshots of  
our achievements during the  
academic year 2014-15 with  
reference to our Plan.

## 1. DEGREE PROGRAMMES

A key Plan objective is the revision  
of our UG curricula to permit the

students more choice in the courses they take. This has become imperative in a fast-changing world where aspirations are themselves moving targets. In the new curriculum that comes into effect from the oncoming academic year, the student will be given the latitude to choose on average 40% of the courses. Students can thus pursue newly discovered passions, or upgrade to a dual-degree programme, stay on for an M.S. in Entrepreneurship, or simply sample interesting courses in various disciplines.



An ever-increasing number of Masters' students are discovering the excitement of research at IITM. In 2014-15, a total of 59 students upgraded to the PhD programme, while 73 high achievers were admitted to it directly after their Bachelors' degrees. A further 33 industry professionals also enrolled for their Ph.Ds, indicating a healthy growth in our industry interaction. Overall, the PhD intake per year has crossed our Plan target of 80% of the faculty strength, putting us on course to achieving the Ph.D graduation target by 2020.



Our intense transnational collaborations have resulted in the formalization of several joint-doctorate supervision agreements, including one that was signed with the President of Purdue University during his visit in November 2014. Four more joint doctoral programme agreements were signed in 2014-15 to add to the existing four; the new ones are with the University of Melbourne, University of Technology Sydney and Curtin University in Australia, and with the University of Duisburg, Essen in Germany.



The fledgling Centre for Technology and Policy Studies (CTaP) has launched an elective course on 'Technology and Public Policy' that is jointly taught by faculty from across Departments.

## 2. ACADEMIC RESEARCH

In 2014-15, our faculty and research scholars have published 1089 papers in reputed international journals and 105 in national journals, representing a sharp growth of 30% over last year. They have also presented 533 research papers in international conferences and 153 in

national conferences, demonstrating a staggering growth of more than 50%. These are but harbingers of the scorching pace being set by our growing band of research scholars and faculty, leading to a sharp uptick in our international research profile.

## 2.1. Snapshots of Research

At the risk of sounding arcane, I would like to place before you a few examples of the high-quality research carried out by our 212 Ph.D and 157 M.S. scholars graduating today.



**H.V. Raghav** of the Department of **Aerospace Engineering** addressed the strategic use of flare counter-measures and defense missiles for protecting AEW & C systems and non-maneuverable aircraft.

**R. Jayendiran** of the Department of **Applied Mechanics** made novel contributions towards understanding and modelling the non-linear behavior of some 1-3 Piezo-composites.

**Soumi Bairagi** of the Department of **Biotechnology** studied impaired circulating vascular progenitor cells and altered angiopoietin system and

correlated that to vascular abnormalities observed in polycystic amenorrhic females.

**S. Balakrishnan** of the Department of **Chemical Engineering** developed a successful method to simulate fouling deposits of three Indian coal types by using chemical equilibrium calculations and incorporating binary eutectoid formation.

Through an ambitious objective of addressing various problems in metal optics, **Maturi Renuka** of the Department of **Chemistry** presented a complete set of frequency and wave-vector dependent linear



response tensors and outlined a formalism of macroscopic electrodynamics that uses scalar and vector potentials as fundamental building blocks. **Nirod Kumar Sarangi** of the same Department came up with interesting dependence of electron transport on lipid molecular tilt and its uses for molecular recognition.

**P. Athira** of the Department of **Civil Engineering** developed a method to predict stream flow in ungauged basins and quantified predictive uncertainty by regionalization of distributed hydrological models.

Working on processor chip designs, **John Jose** of the Department of **Computer Science and Engineering** introduced some novel congestion management techniques for adaptive routers in mesh networks on chips.

**P. Jiju** of the Department of **Engineering Design** introduced some elegant methods for non-parametric shape recognition and volume-constrained polyhedronization of point sets.

**Rohit Budhiraja** of the Department of **Electrical Engineering** proposed novel precoder and receiver designs



for non-simultaneous two-way relaying, and showed that this protocol performs better than one-way relaying. **Chandan Kumar** of the same Department worked on voltage control mode operation of distributed static compensators, and proposed a multi-functional control algorithm and hybrid topology for improvement in performance parameters.



**Anu T. Ashokan** of the Department of **Humanities and Social Sciences** made an exhaustive eco-critical analysis on the fictional work of Mahasweta Devi, which is the first



of its kind on the environmentalism of the poor.

Working on dynamic pricing and bidding strategies based on user's behavioral biases, **K. Sowmya** of the Department of **Management Studies** concluded that traditional assumptions such as 'human beings are rational/ hyper-rational' or 'they act in a way that maximizes their utility' need to be cautiously examined while modelling human behavior.

**S. Rajesh** of the Department of **Mathematics** initiated the study of existence of best proximity points of



asymptotically relatively nonexpansive maps, which is a novel extension of both relatively nonexpansive maps and asymptotically nonexpansive maps.

**Anup Paul** of the Department of **Mechanical Engineering** studied the effect of large blood vessels during near infrared laser mediated plasmonic photo-thermal heating, and observed an interesting effect of nano particles in altering photo-thermal heating and cooling parameters.

**Devinder Yadav** of the Department of **Metallurgical and Materials**

**Engineering** developed non-equilibrium composites and solid solutions by friction stir processing and observed interesting patterns of microstructure evolution.

**Tushar Sharma** of the Department of **Ocean Engineering** developed some novel nanoparticle stabilized emulsions for enhanced petroleum oil recovery.

**Ranjim Ali Mondal** of the Department of **Physics** developed ferroelectric and soft ferrite composites, and observed enhanced magneto-electric effect and multi-functional properties in some of the



composites. **Jayachandra Bingi** of the same Department studied various dielectric and plasmonic materials and observed some interesting light-matter interaction patterns.

## 2.2. Research Centres

IIT Madras has come to be known not only for its academic research, but for the transformative large-scale technologies developed in its multi-disciplinary Research Centres - technologies that impact lives of ordinary citizens throughout our country. Development of innovative, scalable, frugal, sustainable and



affordable solutions for national challenges in housing, water, energy, healthcare, transportation and education is one of the key objectives of our Strategic Plan. In 2014-15, we made impressive strides in this regard.

After successful pilot trials in four States, the revolutionary Uninterrupted DC power supply technology developed by our Centre for Decentralised Power Systems is now being deployed for city-scale trials in Sasaram, Bihar, with one lakh homes, and in Lakhimpur, Assam, with 5000 homes. This system



ensures 24x7 supply of a fixed quantity of DC power to every home, incentivizing the deployment of energy-efficient DC appliances and rooftop solar panels. It is a game-changer for India's renewable energy and energy conservation missions, besides giving a strong fillip to the Make in India programme. An Off-Grid version of this system is also being deployed in 40 villages in Rajasthan, as an affordable solution for the millions of homes that are not connected to the grid today.



The Glass Fibre Reinforced Gypsum (GFRG) technology for affordable, sustainable and rapid housing, developed by the Civil Engineering, Department is being pursued as a key enabler to meet India's Housing for All target by the year 2022. The building codes and design manuals for this technology have been finalized. Pilot projects for low-income housing are being implemented in several States this year as a prelude to large-scale adoption.

The Centre of Excellence in Urban Transport has deployed an



intelligent bus tracking and information system for trial on three arterial roads of Chennai surrounding our campus. The system provides real-time information to commuters and the transport authority on the location of buses and traffic conditions on the roads.

A team consisting of computer scientists and civil engineers has developed a wireless health monitoring system to observe the fitness of railway bridges remotely and the first such system was deployed at Nagari bridge in Chittoor district of Andhra Pradesh.

The National Centre for the Safety of Heritage Structures has done yeoman work this past year for the rehabilitation of the Kedarnath temple, and conducted rapid structural assessment and developed temporary stabilisation designs for monuments in Nepal immediately after the devastating earthquake. The Centre is also currently assessing the structural health of the official residence of our Visitor, the President of India.

In consonance with the national goal of providing clean drinking water to all, the Thematic Unit of Excellence



on Water has deployed in 2014-15 an additional 350 units of AMRIT, the nanomaterials-based drinking water purification technology developed by it, that are serving over 4 lakh rural people in the arsenic affected areas of India. This technology will benefit an additional 4 lakh people in the next two years. With a view to taking these technologies to the global market, IIT Madras has licensed 13 related patents.

The recent inclusion of IIT Madras as full member of the Compact Muon Solenoid (CMS) experiments of CERN (European Laboratory for

Particle Physics) has opened up IITM's participation in fundamental physics, related technologies and developments in grid computing.

The Healthcare Technology Innovation Centre (HTIC) has developed design and technical specifications of ambulances for transporting newborn babies in Tamil Nadu. Based on this design, around 30 neonatal ambulances were fabricated for deployment in the State.

The Indo-German Centre for Sustainability was created to commemorate the golden jubilee of IIT Madras. Currently, nine projects



are underway on septage management, bio-diesel for compression ignition engines, micropollutants in water sources, solar thermal system for domestic sewage treatment, land use and climate change effects on mountain streams, sustainable water management in Chennai, vulnerability and health risk due to air pollution, climate change in urban areas, climate change adaptation and resilience in peri-urban areas, and detection of islanding and islanded operation of renewable power sources, the last mentioned project being funded by



industry. The research is being undertaken jointly by our faculty and thirteen visiting German scientists, and funded equally by the Indian and German governments. IGCS has also attracted CSR funds for pilot implementations.

The TTK Center for Rehabilitation Research and Device Development (R2D2), set up with a grant from the TTK Group, was inaugurated by Shri. T.T. Jagannathan, Chairman TTK Prestige and Distinguished Alumnus of IIT Madras. The Center will work with clinical specialists, NGOs, and hospitals to engineer



and develop affordable products for the rehabilitation needs of our people.

An Incubation Center for Industrial Automation & Instrumentation and Automobile Engineering has been set up in the Department of Engineering Design with support from the Ministry of Labour and Employment (MoLE). The incubation center will support MoLE for training selected ITI students and for project development.

Several new multi-disciplinary Research Centres in the areas of

Machine Tools, Data Analytics, Steel, Propulsion and Railway Systems are on the anvil, as envisaged in the Strategic Plan.

The Institute undertook a new initiative in coordination with the Government of Tamil Nadu to take the benefits of research efforts of the Institute to the community. Senior government officials and our faculty have identified a number of areas where IITM can contribute beneficially. This is besides the large number of graduating Ph.Ds joining engineering institutions in Tamil Nadu, and the training programmes,



open online courses, faculty development programmes, and the Quality Improvement Programme run by the Institute to improve quality of higher education in Tamil Nadu. Housing and construction technology, water treatment and pollution control, data mining and GPS based solutions, solar power technologies, information networks, and healthcare technologies were identified as priority areas. A dedicated research centre is proposed to cater to specific needs in some of these areas not covered by existing Centres.





### 2.3. New Research and Fabrication Facilities

Constant upgradation of instruments and facilities play a key role in carrying out Research at the highest levels. IIT Madras continues to upgrade its research infrastructure to provide the best possible facilities to its scholars.

A 1.1m diameter rotating platform capable of a maximum speed of 250rpm, both clockwise and anti-clockwise, and whose arbitrary profiles for platform rotation can be specified has been installed in the Department of Aerospace



Engineering. The facility is currently being augmented with PIV (Particle Image Velocimetry) and is ideal for studies on rotating/sloshing-type flows.

A new laboratory with facility to culture and work with the *C. elegans* model organism has been created in the Department of Biotechnology, Bhupat and Jyoti Mehta School of Biosciences.

The Civil Engineering Department has equipped itself with two more new laboratories this year - the MPCEM Laboratory dedicated to characterizing and enhancing the

mechanical performance of civil engineering materials, and the Building Automation laboratory for conducting research in the area of automated building systems. A new experimental facility for characterization of stack emissions for monitoring gaseous and particulate matter pollutants has also been commissioned in the Department.

The other major addition this year, is the establishment of an Ocean Optics and Imaging Laboratory in the Department of Ocean Engineering, to carry out



multidisciplinary research focused on the inherent optical properties of particles and dissolved substances and propagation of light within the ocean and across the air-water boundary. The Department has also equipped itself with a Turbine Testing Facility and an Artificial Lift Lab this year.

### **3. ACADEMIC DISTINCTIONS SECURED BY OUR FACULTY MEMBERS AND STUDENTS**

Several academic distinctions, honours and awards, fellowships of academies and professional societies, and memberships on



editorial boards of journals, have been bestowed on our faculty, staff and students in recognition of their academic achievements during the current year. Notable among the awardees are Dr. Shaikh Faruque Ali who won the INAE Young Engineer Award, Drs. Rama Shanker Verma, elected Fellow of NAS, Arunn Narasimhan and R.I Sujith, elected Fellows of INAE, Bhaskar Ramamurthi, elected Fellow IEEE, BS Murty elected Fellow of INSA, and T. Pradeep, elected Fellow RSC.

Six of our young faculty, Drs. Ethayaraja Mani, Shankar



Balachandran, Madhu Mutyam, M.N. Jayalal Sarma, Krishna Jagannathan and Jitendra S. Sangwai, have won the Young Faculty Recognition Award of the Institute for the year 2014. Prof. David Koilpillai won the award for Excellence in Teaching for the year 2014-15. Prof. T. Pradeep was awarded the Lifetime Achievement R&D Award of IIT Madras, Profs. C. Balaji and Sathyanarayana N. Gummadi have been awarded the Mid-Career R&D Award, while Drs. Mohanasankar Sivaprakasam, N. V. Ravikumar and Ramesh Gardas



have been awarded the Junior-Level R&D Award.

Karnati Vinod Reddy of the Department of Computer Science and Engineering was awarded the Aditya Birla scholarship for 2014, while Spandana Raj of the same Department won Facebook's Grace Hopper and Google's Anita Borg scholarships.

The student team of Suthirth Vaidya and Abhijit Chundururu from the Engineering Design Department mentored by Drs. Ganapathy Krishnamurthi and M. Ramanathan won the first place at the



Longitudinal Multiple Sclerosis Segmentation Challenge 2015 held at New York.

Another student team comprising Rangeeth (AE), Sri Harsha K (CH), Sai Gole (ED), Aman Agrawal, Anoop K, Koushick Balaji, Manish Prajapat, Rohit John and Safar (ME), won awards for the best use of advanced manufacturing methods and best use of predictive design and simulation tools in the Student Design Challenge of American Society of Mechanical Engineers.

Our faculty has also been prolific this past year in writing books and



monographs. An exhaustive list of laurels won by our faculty and students is given as an Annexure to this report.

#### 4. INDUSTRIAL CONSULTANCY AND SPONSORED RESEARCH

IIT Madras leads in industry collaborations and industry-funded projects. Apart from the sponsoring industries, our faculty and students gain tremendously from the interaction as well. In 2014-15, the Institute received sanction for Rs.64 crores in new projects from industry, representing a 20% rise over the previous year. IIT Madras has been



maintaining this annual growth rate over many years now, and is on course to meet the Strategic Plan target in this respect.

The Institute has earned Rs.97 lakhs from technology transfer fees and royalties during the year 2014-15. The Intellectual Property Management Cell has enabled filing of around 80 patents during the year.



The Research Fund of Rs.50 crores that was created last year to provide an impetus for the initiation of new research along risky pathways, has been utilized to fund seven R&D Awards (amounting to Rs.1.9cr), five

research scholar innovation projects (for a total of Rs.25 lakhs), twenty-two exploratory research projects with “break-through” ideas (Rs.2 cr in all) and two multi-disciplinary team projects that establish a new line of research with potential to lead to the creation of new Research Centres (for Rs.3.98 cr) this year. The Fund has also helped students and new faculty initiate and establish their research activities by funding nineteen new Innovative Student Projects (a total of Rs. 22 lakhs) and twenty-one new faculty proposals (totaling Rs.1 cr). The Fund has also been utilized to operate and



maintain instruments shared across the Institute.

## 5. RESEARCH PARK AND INCUBATION

IITM Research Park, India’s first such university-driven initiative, has indeed reinforced our industry interaction manifold. Having reached maximum occupancy levels with around 70 companies and research centres since operations commenced in 2010, IITMRP has brought together in a common ecosystem, expertise from the industry, our faculty and students. The Phase II of IITMRP with a built



up area of 8.2 lakh sq.ft and five blocks to cater to varied specifications suitable for IT, Mechanical and Biosciences will be ready for occupation by the end of this year.

Saint Gobain Research India (SGRI), our anchor client for Phase II has taken over 1.2 lakh sq.ft area that spreads across four floors in one of the blocks. Tata Consultancy Services (TCS), Confederation of Indian Industry (CII)-Logistics, Healthcare Technology Innovation Centre (HTIC), Biosciences Incubator (BI), and IIT Alumni



Industry Interaction Centre (IAIIC) have also been allotted space that already covers nearly 25% of Phase II.

To boost incubation activities as envisaged in our Strategic Plan, IITMRP has allocated 100,000 sqft space for incubation in Phase II. It is worth mentioning here that 35,000 sq.ft space allocated for incubation in Phase-I has been put to full use by the IITM Incubation Cell (IITMIC).



The incubators nurture technology and knowledge-based ventures through their start-up phase by providing all support necessary to help entrepreneurs establish themselves

before they scale-up their ventures. IITMIC is working to build and share resources including space and infrastructure, access to business support services, mentoring, networking and access to seed and early stage venture funds, including the IITM Startup Fund with contributions from industry and donations by IITM alumni, and grants from Govt. of India. IITMIC's latest addition to its gamut of incubators is the Bioincubator with support from BIRAC (Biotechnology Industry Research Assistance Council, Govt. of India) that will assist and promote emerging biotech



entrepreneurs and facilitate innovative research particularly in biopharma, bioagri, bioenergy and industrial biotechnology.

Under the aegis of IITMIC and other incubators, IITM is fast emerging as one of the most vibrant hubs for start-ups in the country. Till date, 89 startup companies have been incubated at IITM, of which 29 were set up in 2014-15, founded by students and faculty of IITM or external entrepreneurs leveraging expertise/resources at the Institute, with a majority of them located at IITMRP. Several of them are working





in advanced and emerging areas such as IoT (machine-to-machine), clean energy, water, biomedical devices/healthcare, education, agri-tech and ICT; many have graduated with strong infusion of capital from interested majors. IITM is confident of achieving the Strategic Plan target of at least 20 new companies incubated on average every year.

## 6. CONTINUING EDUCATION AND OUR CONTRIBUTIONS TO THE NATIONAL EDUCATIONAL SYSTEM

IIT Madras has an extensive outreach programme catering to



teachers, practising engineers, and researchers. The Centre for Continuing Education (CCE) organized 13 Short Term Training Programmes for engineering college faculty, 87 Continuing Education Programmes for Industrial personnel, and about 4 programmes under the Curriculum Development Cell. These programmes have benefitted about 89000 participants in 2014-15, and resulted in a revenue of around Rs.16 crores.

IITM plays an important role in assisting other engineering institutions in the country with their

curriculum, laboratory upgradation, and faculty career development. Under the Quality Improvement Programme (QIP), we have a total of about 72 QIP Scholars – 63 pursuing Ph.D and 9 M.Tech, which includes 20 and 4 women respectively. The Institute is also assisting engineering colleges in Tamil Nadu and the neighbouring States to implement their TEQIP-II programmes.

In order to meet a long-felt demand from professionals in industry, IIT Madras is launching from this year live online courses in the evening for various industry verticals. We are



beginning in 2015-16 with automotive technology, information security, digital communications, and business administration.

Students can complete courses at their own pace, and earn a Masters' degree when the required credits have been earned.

Under the Book Writing Scheme designed to encourage textbook writing by our faculty members, 80 books have so far been published and 5 books are under publication in the current year.

Our Teaching Learning Centre, the first of its kind in the IIT system, was

established in 2011 with a vision to develop effective teaching-learning methodologies for enhancing the quality of higher education in the country. A trained core team from science and engineering departments of the Institute organizes and conducts frequent Faculty Development Programs (FDPs) for teachers in our Institute, NITs, and TEQIP-assisted engineering colleges. The objective of the FDP is to guide the teachers to design course learning outcomes, teach using active and collaborative methods, and develop skills for formative assessment as well as reflective



teaching. The Centre is also working towards building an effective Teaching Assistant Training Program in the Institute to augment teaching learning processes, especially in large class rooms.

The National Programme on Technology Enhanced Learning (NPTEL) is India's largest ICT-based technical course dissemination programme for more than a decade now. About 875 (web/video) courses in Engineering, Science and Technology developed under NPTEL are freely available on our NPTEL website and also through



YouTube. Edited transcripts of the lectures are also available. NPTEL has taken up the task of mapping every question in the GATE question papers (from 2011 - 2013) to NPTEL reference material, readily available within existing NPTEL courses. NPTEL has new Facebook and Twitter accounts too!

With Massive Open Online Courses (MOOCs) gaining momentum in the last few years, NPTEL had embarked on offering online courses through its new portal <https://onlinecourses.nptel.ac.in/>. It has successfully completed 3 courses in 2014 and 54



courses in 2015. This includes 37 full semester 40-hour courses. Of the 2.4 lakh students who had enrolled for the courses, 7500 have been certified in 2014-15 by means of a physically proctored examination.

IITM's Summer Fellowship Scheme, initiated a few years ago, provides opportunities for summer research internship to top-ranking engineering and science students all over the country; 158 students participated in the programme this year.

IIT Madras is mentoring two new IITs at Palakkad and Tirupati. The temporary campuses and hostels are

ready and the classes for the first batch of students will commence from August this year. Earlier, IIT Madras had successfully mentored IIT Hyderabad.

As part of the *Rashtriya Avishkar Abhiyan* (RAA), a recently launched initiative by the Government of India, IIT Madras has been proactively engaged in mentoring and providing in-house training both to the students and teachers of the Kendriya Vidyalaya here on our campus and other government/ NGO schools in our vicinity through the National Services Scheme (NSS)



and the Centre for Social Innovation & Entrepreneurship.

IIT Madras has, under the *Ishan Vikas* programme launched by the Prime Minister, mentored 16 students and 2 faculty members from NITs of the North-Eastern States of Mizoram and Assam for a month during the year 2014-15.



## 7. INTERNATIONAL COLLABORATIONS

IITM has been interacting with several globally reputed universities and organizations abroad for collaborative research, exchange of

faculty and students, etc. The Office of I&AR has been instrumental in promoting such collaborations and exchanges. A record number of new MOUs, exceeding 50, were signed during 2014-15 to facilitate student exchanges and faculty collaborations taking the total number currently in effect to 200, and 5 Joint Doctorate program have been launched in partnership with foreign universities in the year under review.

In November 2014, Deakin University, Australia, felicitated IIT Madras with the 'Strategic Partner'



award towards its contributions to building the bond between the two countries through research and development at the Australian High Commission. Earlier in October, IIT Madras was admitted as one of the partners of the AOTULE Consortium (Asia-Oceania Top University League on Engineering), opening up a plethora of opportunities for the faculty and students of IIT Madras to collaborate with counterparts in the consortium of eleven premiere engineering universities in Asia-Oceania region.

With dedicated staffing to attend to inbound & outbound students & faculty, the campus is being increasingly perceived as an attractive destination by exchange students, while IIT Madras students are also getting motivated to spend time abroad. A 40% increase from 2013-14 has been observed in the number of students electing to take up 'study-abroad' programs and research visits. IIT Madras has announced a scheme by which visiting M.S. and Ph.D. students will be paid a scholarship during their stay, and this has resulted in a



significant increase in incoming students.

## 8. HUMAN RESOURCES

Systematic programmes are conducted throughout the year to train our technical and administrative staff and help them upgrade and acquire new knowledge, skills and professional orientation through a variety of learning experiences. In the year under review about 120 staff members benefitted from 3 in-service and 9 offsite training programmes. Apart from this, as



many as 59 officers/staff have been provided Hindi Training.

The Non-Academic Staff Recognition Awards to recognize the efforts of administrative / technical staff members who have been making significant contribution to the Institute by their outstanding and consistently excellent service have been instituted last year. The awardees for 2014-15 are: Ms. Vasanthi Subramanian, Ms. M. Saraswathi and Ms. Jayasri Sridhar under Administrative category; Mr. K. Thirunavukkarasu, Mr. Ajay Krishnan and Mr. S. Arjunan under



Technical category; and Mr. N. Elumalai under Supervisory/ Managerial category.

## 9. QUALITY AND PROCESS IMPROVEMENT INITIATIVES

IIT Madras has been awarded ISO-9001:2000 certification for its academic support processes as early as 1999 and for administrative support processes in 2001. All the units were certified as per the ISO 9001:2008 standard in 2011 and have been recertified again in 2014. In addition to ISO 9001:2008 certification, the Central Electronic Centre has also been NABL-





accredited for its Testing and Calibration Laboratories since 2004.

WORKFLOW, the institute-wide ERP, has brought a significant part of various institute's administrative and academic processes under its wing and it is being enhanced to cover more processes.

All academic departments, and the Institute as a whole, were reviewed by external review committees in 2014, many of which had members from leading universities abroad. One of the major inputs to the Institute peer review committee was the Strategic Plan 2014-2020. A plan



of action based on the recommendations of the review committees has been evolved. The following initiatives have been undertaken on priority basis: i) formation of curriculum taskforce and implementation of a flexible B.Tech./Dual degree curriculum from the 2015-16 academic year, ii) performance-based career advancement for senior professors through Chair Professorships, (iii) mentoring of young faculty, iv) acquisition of a satellite campus, (v) improving safety standards in the work environment, (vi) improved maintenance of infrastructure.



## 10. INFRASTRUCTURE DEVELOPMENT

A major landmark for IITM this year is the generous allotment of 163 acres of land in Thaiyur Village by the Government of Tamil Nadu for our satellite campus. The second campus will go a long way in giving IIT Madras the elbow room to set up large inter-disciplinary Research Centres and house the growing research scholar population.

Tunga and Bhadra, the two boys' hostels with 732 rooms have been completed this year. The alumni have generously contributed to the



construction of the New Quark Canteen in the hostel area.

Our sports facilities are being significantly augmented to international standards, in time for the inter-IIT Sports Meet which returns to IIT Madras this December.

The construction of a synthetic track at the stadium, installation of synthetic surface for three basketball courts and the renovation of two volleyball courts are under progress.

The modernization of the stadium has been made possible by a generous donation from our distinguished alumnus, Prem Watsa.



The 1 MW roof top Solar Power Plant has been commissioned. The new buildings for the National Centre for Combustion Research and Development, Chemistry department and Thematic Unit of Excellence in Water are nearing completion. A capacious food court is also getting ready.

The Computer Centre constantly upgrades its facilities, and consists today of the Virgo Super cluster with 4096 CPUS, which is a 100 Teraflops machine, the Libra Cluster, which is a GPU machine with 6 Teraflops capacity, and the GNR Super Cluster which is about 12 Teraflops.



We remain committed to protecting and preserving our beautiful campus and its fauna and flora. Two animal censuses were conducted in August 2014 and April 2015. It is estimated that there are about 372 Chital, 32 Blackbuck and about 284 Macaque. Continuous efforts are made to protect and expand the Blackbuck habitat.

In consonance with both the Swachh Bharath Mission and one of the recommendations of the Peer Review Committee, a comprehensive clean-up of discarded equipment, furniture, printed matter, and e-waste has been completed in the

academic zone. The Engineering unit has simultaneously initiated periodic removal of construction debris throughout the institute. The Zero Waste Zone (OWZone) team of self-help groups continues to do commendable service to the cause of keeping the campus clean by collecting the solid waste on campus on a daily basis for segregation, recycling and composting.

## 11. STUDENT CO-CURRICULAR AND EXTRA-CURRICULAR ACTIVITIES

2014-15 was yet another eventful academic year for the students.



Participation in the co- and extracurricular activities continued an upward trend with several new clubs being launched and the memberships in the existing clubs doubling. All the competitions saw laudable performances due to the concerted efforts and preparation from the IIT Madras teams.

The past academic year was one of the most successful years for Centre for Innovation (CFI), thanks to programs like Nirmaan and Vistaar that has instilled entrepreneurship spirit among students.

The success of CFI can be witnessed by the accolades that our Teams win at various events. Team Amogh, finished 15<sup>th</sup> in the International Robo Sub competition conducted by AUVSI held at San Diego. Team Raftar made the lightest and first sub-200 kg car and participated in FSAE. The team has been placed 28<sup>th</sup> in Cost, 58<sup>th</sup> in Design and 52<sup>nd</sup> in Business Plan finishing an overall 62<sup>nd</sup>. Team Sahaay has worked towards providing technical solutions for persons with disability, developing technologies that directly impact this vulnerable section of our society. The



quadcopter designed and fabricated by the IIT Madras students won the Masila Vijay award.

An IIT Madras Space Center which houses several test equipment and a clean room to assemble the components of satellites was inaugurated in April 2015, thanks to the generous support of our distinguished alumnus Dr. Krishna Chivukula. The satellite designed and built by our students, over several years and multiple graduating batches, is to be placed in a low Earth orbit later this year. It will collect data about high-energy

charged particles in the outer layers of the atmosphere trapped by the Earth's magnetic field and transmit it to a ground station that will be set up in the IITM campus. This team is guided by Profs. David Koilpillai and Hari Ramachandran.

SHAASTRA, the annual technical festival attained greater heights this year with a leap in footfall and quality workshops. The stellar lecture series and the stunning pro-shows were icing on the cake. A jewel in the crown of Shaastra was the 'Pledge a book' campaign that



helped build libraries for rural schools.

SAARANG, the cultural festival celebrated its 40<sup>th</sup> edition and was themed "Out of the World" with over 65 events and 5 professional shows. It made history in terms of footfall, sponsorship, total revenue generated, and more importantly, the increased presence of our own students.

Saarang lectures showcased prominent people like Pullela Gopichand, Resul Pookutty, Bombay Jayashri, and Anita Nair. Three years since its inception, Eunoia, the social wing of Saarang,

has collected Rs. 7 lakhs through its campaign called 'Stand up to Cancer' which aimed to spread awareness about cancer through donation to NGOs and Trusts.

This year saw the beginning of an intersection of Shaastra and Saarang through the involvement of music and choreo clubs involving in the techshow ENVISAGE. The coming years will see a lot more intersection of Shaastra and Saarang.

Extra Mural Lectures (EML), a lecture series run by the students has, in addition to organizing lectures by several high profile



speakers from various walks of life, such as Vishwanathan Anand and Sqn. Ldr. Rakesh Sharma (Retd), nucleated a 'mini-EML' series on niche topics including heritage & music. The feedback on the EML series has been very positive, and engagement of the IITM community on Facebook and Twitter, phenomenal.

In the 50<sup>th</sup> Inter IIT Sports meet, the IITM women's and men's contingents secured the 3<sup>rd</sup> and 5<sup>th</sup> places respectively in the general championship. Mr. Praveen Kumar of IITM has been adjudged the



fastest in the championship winning both the 100m and 200m dash. Our Aquatic team, both men and women, did very well securing the first and second places respectively. As stated earlier in the report, IIT Madras is augmenting its facilities for the 51<sup>st</sup> Inter IIT Meet that will be hosted on our campus this coming December.

The Gerhard Fischer & Kokila Rajaiah Chennai basketball tournaments for men and women respectively, Sports Fest, and the Jimmy George All India Invitational Volleyball tournament saw



participation from more than 30 colleges.

Our Quiz Club members have been crowned champions of Nihilanth 2015 (the Annual Inter IIT-IIM Quizzing Championship), the second victory in a row establishing that our Quiz Club is among the best in the country. The IIT Madras Choreo team has also won quite a few laurels in intercollegiate dance competitions.



The I&AR team started the year with Alumni Chapter initiatives such as Mentor for Interns and Alumni Day of Service in Delhi, Bangalore,



Mumbai and Chennai. Analytics and Finance clubs were started with guidance from alumni. To assist final year students with career and placement preparation, Career Connect and mock interviews were conducted. To brand IIT Madras, IIT-M TV, a YoutubeTV channel, was launched. To showcase the rich student experience on campus to students preparing for JEE, A Day at IIT Madras was launched. We continue to have a strong connect with our alumni through several programs such as Chennai36 - biggest alumni blog in India, Telethon and Alumni to Be cards.



Our International day has grown manifold providing a window to the rich culture and heritage of India to the international students on campus.

Our disaster management student team was very active this year and its workshops such as the 'Emergency Response Workshop' on first aid, CPR and rescue, and the 'Self Defence Workshop' for women had large participation. The team also mobilized funds from within the institute for the relief of Jammu and Kashmir flood victims. A disaster management chapter was



also added in the Life skills course that trains close to 800 freshers.

The National Service Scheme (NSS) Unit, which engages in social causes, undertook as many as thirty projects this year that focused on teaching, content generation, and bringing change. NSS Open House 2015 displayed the work done by NSS - IITM over the past year.

An Honor Code has been formally introduced this year and the Students Affairs Council members took oath with the honor code this time.



## 12. STUDENT WELFARE

Mitr, IITM's counseling and guidance service, organized many activities in the past academic year viz. orientation programs, Emoticon 360, time management workshops, yoga and Tai Chi class coordination etc., with the objective of nurturing a physically, socially, emotionally and intellectually balanced life among our students. Mitr engages professional counselors and experts for in-person counseling. They are also available 24x7 through telephone. As many as 300 trained

Mitr volunteers are also available to assist students.

Mitr website has become the most preferred website for students seeking information about various Institute procedures and activities. A mobile app, a first of its kind at IITM, giving information to the freshers has been created.

Activities such as the model quiz session, academic buddy program, out bound training program and the life skills course help freshers cope with the sudden changes in their life.



### 13. PLACEMENT

As a result of reaching out to around 1950 core and non-core companies this year, 249 companies visited IIT Madras for placement, of which 63 were from Core Engineering. Focus was placed on contacting various Fortune 500 and other leading companies.

A total of 939 students were placed through Placement Office, of whom a large fraction 61% joined core engineering companies. The placement percentage of MS



scholars touched an all-time high of 70 per cent.

In order to enhance student interaction with the companies, an internship office chaired by an Advisor has been set up. The summer internship 2015 drive, placed about 59 third year students into internships in 27 companies.

#### 14. ALUMNI MATTERS

A key focus of the Office of International and Alumni Relations continues to be to maximize two-way connectivity between the



Institute and her alumni. While e-mail communications have been maintained, social media are increasingly being leveraged. The Alumni Day, Reunions, Chapter meetings etc. has taken alumni interaction to the next level. The lecture series endowed by alumni – Leadership Lecture Series, Institute Lecture Series etc. continue to benefit the students. Alumni footfall on campus continues to be high, with involvement ranging from innovation and entrepreneurship initiatives to industry connects.



IIT Madras has been honouring selected alumni with 'Distinguished Alumnus Awards' since 1997 in recognition of outstanding achievements in the areas of entrepreneurship, leadership and management, academia and research, social and technological innovation, and service to humanity at large. The awardees for this year are:

- Dr. Prakash Keshaviah [1967/B.Tech./Mechanical Eng.], Director, Nephrology Unit, Himalayan Institute Hospital Trust, Dehra Dun
- Shri Lalit Mahajan [1968/B.Tech./Chemical Eng.], Chairman & MD, J. Mitra & Co., Pvt. Ltd., New Delhi



- Shri Krishna Chivukula [1970/M.Tech./Aerospace Eng.], Chairman, Indo MIM Tec. Pvt. Ltd. Bangalore
- Dr. S. Ramakrishnan [1972/M.Tech./Aerospace Eng.], Distinguished Professor, Vikram Sarabhai Space Center, Thiruvananthapuram
- Shri Sekhar Vasani [1975/B.Tech./Metallurgical & Materials Eng.], MD, Sansera Engineering Pvt. Ltd., Bangalore
- Shri Ajita Rajendra [1976/B.Tech./Chemical Eng.], President & COO, A. O. Smith Corporation, Milwaukee, Wisconsin, USA
- Dr. Arumugam Manthiram [1981/Ph.D. / Chemistry], Director, Texas Materials Research Institute, University of Texas at Austin, Texas, USA
- Dr. Periannan Kuppasamy [1985/Ph.D. / Chemistry], Director, Center for Biomedical EPR Spectroscopy & Imaging, Ohio State University, Columbus, Ohio, USA

- Dr. R. Srikant [1985 / B.Tech. / Electrical Eng.], Professor of Electrical & Computer Engineering, University of Illinois, Urbana-Champaign, Illinois, USA
- Dr. Krishna Bharat [1991 / B.Tech. / Comp.Sci. & Eng.], Distinguished Scientist, Google, Inc., Mountain View, California, USA



2014-15 was the best year ever for fund-raising, with the contributed amount of Rs.23 crores nearly doubling the previous highest annual intake. The year saw a diversification in giving patterns, with alumni donors in India emerging as the largest constituency. Shri Lalit Mahajan contributed to Healthcare

Innovation Technology Centre, Dr. Krishna Chivukula supported the 'IITM Satellite Project' that has been covered earlier in the report, and Dr. Prakash Keshaviah sponsored an 'Institute Chair Professorship' as well as a new research award. Shri T.T. Jagannathan, as covered in the report earlier, gave for the 'Centre for Rehabilitation Research and Device Development', while several companies contributed from their CSR funds to support DST-approved incubators on campus, as well as faculty R&D projects with social impact. Campus infrastructure continues to be



funded by alumni, as evidenced by the recent renovation of the popular all-night eatery, 'Quark'.

The single most notable contribution in 2014-15 was from our Board Member and Distinguished Alumnus, Kris Gopalakrishnan. Kris announced the sponsorship of three 'Distinguished Chairs in Computational Brain Research', endowed at Rs.10 crores each. In keeping with the pace of the IT industry he helped create, the first two of these were launched in 2014-15 itself, with Dr. Partha Mitra (Cold Spring Harbor Labs, New York) and



Prof. Mriganka Sur (MIT, Cambridge) being named as the Chair Professors. The Chairs were named after Prof. HN Mahabala and Shri NR Narayana Murthy, respectively. These Chairs, affiliated with the Department of Computer Science & Engineering, are expected to nucleate a strong program of research and education in the emerging area of computational neuroscience, and to help attract the best new talent to teach and learn at IIT Madras.

A third Chair filled during the year (by Prof. Ashok Venkitaraman from



Cambridge University) was a Chair in 'Biological Systems Engineering', endowed by the Mehta Family Foundation (Houston) in the Department of Biotechnology.

The first-ever 'Donor Reception' to honor India-based donors who have given back to the alma mater was held on campus in April 2015. For continuing with our efforts to scale up fund-raising, professionally-staffed 'Development Offices' have been launched in India and in the U.S.



## 15. ACKNOWLEDGEMENTS

An endeavor on the scale of this Institute and its entire gamut of activities takes place with the wholehearted participation and support of all stakeholders - our faculty, students and staff; agencies and industries sponsoring R&D and consultancy projects; professionals from other organizations who assist us in various capacities; and our alumni. In particular, I would like to thank office-bearers such as Heads of Departments, Deans, Chairpersons, Wardens, Advisors, and Professors-in-charge of various





cells and centres for the selfless work they put in to keep the Institute ticking. The Institute is grateful to the Ministry of Human Resources Development, Government of India, for its continued and sustained encouragement and support. I also take this opportunity to specially thank the State Government for its benevolence in providing IITM with the land for its satellite campus. I wish to thank Dr. Pawan Goenka, our Chairman, Board of Governors, for his wise counsel, support and guidance, enabling us to scale new heights. He has instilled in us a goal-oriented approach to the pursuit of



our Strategic Plan objectives. I take this opportunity to thank outgoing Board members Shri Mohamed Hashim Jadwet and Shri Praveen Kumar, and welcome Dr. Utpal Sharma and Smt. S. Madhumathi to the Board. I would like to thank our Chief Guest, Prof. Manjul Bhargava for gracing this convocation. He has been exceptionally gracious in accepting our invitation, even though it meant travelling to India from the US twice within a short span of time. He need not have gone out of his way, but he has.

Before I end, I would like to congratulate the prizewinners today and wish all our graduands happiness, professional success, and fulfillment from a life of service to family and country. God bless you all.



## Faculty Awards / Honours

- |                                  |  |
|----------------------------------|--|
| Dr.Santhakumar S (AE)*           | • Excellence in Aerospace Education Award, The Aeronautical Society of India                             |
| Dr.Sujith RI (AE)                | • Ambassador, Technical University of Munich, Germany  |
| Dr.Shaikh Faruque Ali (AM)       | • INAE Young Engineer Award  |
| Dr.Michael Gromiha M (BT)        | • Namiki Award, Tokyo Institute of Technology, Japan   |
| Dr.Mukesh Doble (BT)             | • 5th National Award for Technology Innovation, Department of Chemicals & Petrochemicals, GoI            |
| Dr.Rama Shanker Verma (BT)       | • ABAP Senior Scientist Award, Devi Ahilya University, Indore  |
| Dr.Sathyanarayana N Gummadi (BT) | • Mid-Career Research & Development Award, IIT Madras  |
| Dr.Ethayaraja Mani (CH)          | • Young Faculty Recognition Award, IIT Madras  |
| Dr.Pradeep T (CY)                | • Lifetime Achievement Research & Development Award, IIT Madras  |
| Dr.Ramesh Gardas (CY)            | • Junior Level Research & Development Award, IIT Madras  |
| Dr.Selvam P (CY)                 | • Royal Society of Chemistry Award, International Section South India of the RSC                         |
| Dr.Sekar G (CY)                  | • Bronze Medal, Chemical Research Society of India   |
| Dr.Indrapal Singh Aidhen (CY)    | • Excellence in Carbohydrate Research Award, Association of Carbohydrate Chemists & Technologists, India |
| Dr.Appa Rao G (CE)               | • DAE Outstanding Investigator Award   |
| Dr.Devdas Menon (CE)             | • Ultra Tech Award, ICI Tamil Nadu Chennai Chapter   |
| Dr.Jayalal Sarma MN (CS)         | • Young Faculty Recognition Award, IIT Madras  |
| Dr.Krishna M Sivalingam (CS)     | • Distinguished Member, Association for Computing Machinery (ACM)  |
| Dr.Madhu Mutyam (CS)             | • Young Faculty Recognition Award, IIT Madras  |

## Faculty Awards / Honours (Contd...)

Dr.Ravindran B (CS)	<ul style="list-style-type: none"><li>• Yahoo Faculty Award</li></ul>
Dr.Shankar Balachandran (CS)	<ul style="list-style-type: none"><li>• Young Faculty Recognition Award, IIT Madras</li></ul>
Dr.Ashok Jhunjhunwala (EE)	<ul style="list-style-type: none"><li>• Honorary Doctorate, Rajasthan Technical University, Kota</li></ul>
Dr.Bhaskar Ramamurthi (EE)	<ul style="list-style-type: none"><li>• Doyens of Madras Award</li></ul>
Dr. David Koilpillai (EE)	<ul style="list-style-type: none"><li>• Srimathi Marti Annapurna Gurunath Award for Excellence in Teaching, IIT Madras</li></ul>
Dr.Krishna Jagannathan (EE)	<ul style="list-style-type: none"><li>• Young Faculty Recognition Award, IIT Madras</li></ul>
Dr.Mohanasankar Sivaprakasam (EE)	<ul style="list-style-type: none"><li>• Junior Level Research &amp; Development Award, IIT Madras</li></ul>
Dr.Nagendra Krishnapura (EE)	<ul style="list-style-type: none"><li>• Technomenter Award, India Electronics and Semiconductor Association (IESA)</li></ul>
Dr.Shanthi Pavan (EE)	<ul style="list-style-type: none"><li>• Distinguished Lecturer, IEEE Solid State Circuits Society (SSCS)</li></ul>
Dr.Joe Thomas Karackattu (HS)	<ul style="list-style-type: none"><li>• Emerging Scholar, The New School, New York</li></ul>
Dr.Srilata K (HS)	<ul style="list-style-type: none"><li>• Pushcart Poetry Prize</li></ul>
Dr.Rajendran C (MS)	<ul style="list-style-type: none"><li>• DAAD Research Ambassador</li></ul>
Dr.Balaji C (ME)	<ul style="list-style-type: none"><li>• Mid-Career Research &amp; Development Award, IIT Madras</li></ul>
Dr.Ravikumar NV (MM)	<ul style="list-style-type: none"><li>• Junior Level Research &amp; Development Award, IIT Madras</li></ul>
Dr.Srinivasa Rao Bakshi (MM)	<ul style="list-style-type: none"><li>• Outstanding Professional Award, ASM International Chennai Chapter</li></ul>
Dr.Jitendra S. Sangwai (OE)	<ul style="list-style-type: none"><li>• Invention Award, Intellectual Ventures, Bangalore</li><li>• Young Faculty Recognition Award, IIT Madras</li></ul>
Dr.Sriram V(OE)	<ul style="list-style-type: none"><li>• Dr. R J Garde Research Award, Indian Society of Hydraulics</li></ul>
Dr.Vendhan CP (OE)**	<ul style="list-style-type: none"><li>• National Award in the field of Ocean Science and Technology, Ministry of Earth Sciences, GoI</li></ul>

\*Retired Faculty, \*\* Emeritus Professor

# Fellowships

- |                            |  |
|----------------------------|--|
| Dr.Sujith RI (AE)          | • Fellow, Indian National Academy of Engineering   |
| Dr.Velmurugan R (AE)       | • Fellow, Aeronautical Society of India  |
| Dhivyaraja K (AM)          | • Prime Minister's Fellowship, Confederation of Indian Industry and Department of S&T, GoI |
| Dr.Athi N Naganathan (BT)  | • Wellcome-Trust DBT-India Alliance Intermediate Fellowship                                |
| Dr.Ramachandran KB (BT)    | • Honorary Fellow, Biotechnology Research Society of India                                 |
| Dr.Rama Shanker Verma (BT) | • Fellow, National Academy of Sciences   |
|                            | • Fellow, Society for Applied Biotechnology and Applied Pharmacy, India                    |
| Jason R. Picardo (CH)      | • Fulbright-Nehru Doctoral Exchange Fellowship   |
| Indranath Chakraborty(CY)  | • Malhotra Weikfield Foundation NanoScience Fellowship                                     |
| Dr.Pradeep T (CY)          | • Fellow, Royal Society of Chemistry   |
|                            | • J. C. Bose Fellowship, Department of Science & Technology                                |
| Dr.Selvam P (CY)           | • Fellow, Madras Science Foundation  |
| Dr.Subramanian S (CY)*     | • Fellowship of the International Electron Paramagnetic Resonance Society                  |
| Praveena Gangadharan (CE)  | • DST Fellowship under the Woman Scientists Scheme   |
| Dr.Bhaskar Ramamurthi (EE) | • Fellow, Institute of Electrical and Electronics Engineers                                |
| Dr.Arunn Narasimhan (ME)   | • Fellow, Indian National Academy of Engineering   |
| Dr.Murty BS (MM)           | • Fellow, Indian National Science Academy  |
|                            | • Fellow, Asia Pacific Academy of Materials  |
| Dr.Shanmugam P (OE)        | • Brain Pool Fellow, Korean Federation of Science and Technology                           |

\*Adjunct Faculty

## Books / Monographs

Dr.Lakshmana Rao C (AM)  
Dr.Abhijit Deshpande P (CH)

Dr.Karthik Raman (BT)

Dr.Mukesh Doble (BT)  
Dr.Ravikumar NV (MM)

Dr.Sanjib Senapati (BT)

Dr.Arun K. Tangirala (CH)

Dr.Pradeep T(CY)

Dr.Devdas Menon (CE)

Dr.Krishna S (EE)

Dr.Jyotirmaya Tripathy (HS)  
Dr.Sudarsan Padmanabhan

Dr.Satya Sundar Sethy (HS)

Dr.Sonika Gupta (HS)

Dr.Swarnalatha Rangarajan (HS)

Dr.Feroz Ali Khader (MS)

Dr.Kamalabhan TJ (MS)

- Modelling of Engineering Materials, John Wiley & Sons
- A Systems Theoretic Approach to Systems and Synthetic Biology I : Models and System Characterizations, Springer Verlag
- A Systems Theoretic Approach to Systems and Synthetic Biology II : Analysis and Design of Cellular Systems, Springer Verlag
- Intelligent Computing in Bioinformatics, Springer
- Polymers in a Marine Environment, Smithers Rapra, UK
- Ionic Liquid-in-Oil Microemulsions, John Wiley & sons, Inc., Hoboken, NJ
- Principles of System Identification: Theory and Practice, CRC Press
- Aquananotechnology: Global Prospects, CRC Press
- 'भ्रम से जागो, सोने वालों!', YogiImpressions
- An Introduction to Modelling of Power System Components, Springer
- Becoming Minority : How Discourses and Policies Produce Minorities in Europe and India, SAGE Publications
- Contemporary Ethical Issues in Engineering, IGI Global: Pennsylvania, USA
- Politics and Cosmopolitanism in a Global Age, Routledge (Taylor & Francis Group)
- Ecocriticism of the Global South, Lexington Books
- Final Instructions, Authors Press
- The Access Regime-How Reorganisation of Local Patent Laws can Promote Global Access to Affordable Medicines, Oxford University Press
- Success and Life Satisfaction among women Micro Entrepreneurs, Springer

## Books / Monographs (Contd...)

- |   |  |
|---|--|
| Dr.Thamban Nair (MA)                          | • Calculus of One Variable, Ane Books Pvt. Ltd.  |
| Dr.Babu Viswanathan (ME)                      | • Fundamentals of Gas Dynamics, Athena Publishers & Wiley  |
| Dr.Balaji C (ME)                              | • The Joy of Research, Ane Books Pvt. Ltd  |
| Dr.Srinivasan K. (ME)<br>Dr.Ganesh Raman (MM) | • Frontiers in Aeroacoustics, Multi-Science Publishing Co., U.K  |
| Dr.Venkateshan SP (ME)                        | • Mechanical Measurements, Ane Books Pvt. Ltd  |
| Dr.Ashutosh S Gandhi (MM)                     | • Metastable phase selection and low temperature plasticity in chemically synthesized amorphous Al <sub>2</sub> O <sub>3</sub> -ZrO <sub>2</sub> and Al <sub>2</sub> O <sub>3</sub> -Y <sub>2</sub> O <sub>3</sub> , Pan Stanford Publishing |
| Dr.Murthy BS (MM)                             | • High Entropy Alloys, Elsevier  |
| Dr.Shanmugam P (OE)<br>Dr.Sundaravadivelu R   | • Petroleum Engineering Technical Terms, World Tamil Research Institute  |
| Dr. Srinivasan Chandrasekaran (OE)            | • Dynamic Analysis and Design of Offshore Structures, Springer   |
| Dr.Vijayan C (PH)                             | • Essentials of Nonlinear Optics, Wiley International  |
| Dr.Prabha Mandayam (PH)                       | • The Functional Analysis of Quantum Information Theory, Springer  |

## Membership of Editorial Boards

- |                           |   |
|---------------------------|---|
| Dr.Sivasambu Mahesh (AE)  | • Member, Editorial Board, International Journal of Plasticity, Elsevier  |
| Dr.Velmurugan R (AE)      | • Member, Editorial Board, Journal of Aerospace Sciences and Technologies |
| Dr.Michael Gromiha M (BT) | • Member, Editorial Board, Scientific Reports, Nature Publishing Group    |

## Membership of Editorial Boards (Contd...)

- |                               |   |
|-------------------------------|---|
| Dr.Balakrishnan AR (CH)       | • Editor-in-Chief, Journal of The Institution of Engineers (India): Series E (Chemical and Textile Engineering)                           |
| Dr.Baskaran S (CY)            | • Associate Editor, Journal of Chemical Sciences  |
| Dr.Indrapal Singh Aidhen (CY) | • Member, Editorial Board, Indian Journal of Chemistry B  |
| Dr.Mishra AK (CY)             | • Member, Editorial Board, Indian Journal of Chemistry A  |
| Prof. T. Pradeep (CY)         | • Member, Advisory Board, 'Nanoscale' (RSC Journal)   |
| Dr.Benny Raphael (CE)         | • Member, Editorial Board, Advanced Engineering Informatics   |
| Dr.Gandhi SR (CE)             | • Associate Editor, Sadhana   |
| Dr.Ravindra Gettu (CE)        | • Associate Editor, Materials and Structures Journal, RILEM Bureau  |
| Dr.Sachin S Gunthe (CE)       | • Co-Editor, Journal of Atmospheric Chemistry and Physics (ACP)   |
| Dr.Siva Ram Murthy C (CS)     | • Associate Editor, IEEE Transactions on Mobile Computing<br>• Editor, Computer Networks Journal, Elsevier                                |
| Dr.Shankar Ram CS (ED)        | • Member, Editorial Board, International Journal of Vehicular Technology  |
| Dr.Mahesh Kumar (EE)          | • Editor, IEEE Transactions on Sustainable Energy   |
| Dr.Thamban Nair M (MA)        | • Editor, Journal of Analysis & Number Theory (JANT), Natural Sciences Publishing   |
| Dr.Raghu Prakash (ME)         | • Member, Editorial Board, SRESA's International Journal of Reliability and Safety Engineering  |
| Dr.Ramesh Babu (ME)           | • Associate Editor, Sadhana   |
| Dr.Ganesh Sundara Raman (MM)  | • Editor, Transactions of the Indian Institute of Metals  |
| Dr.Ravi Kumar NV (MM)         | • Member, Editorial Board, Surface Innovations  |
| Dr.Sampath Kumar TS (MM)      | • Associate Editor, Biomaterials, Frontiers Journal   |
| Dr.Rajiv Sharma (OE)          | • Member, Editorial Board, Journal of Offshore Structure and Technology   |
| Dr.Ganesan AR (PH)            | • Associate Editor, Optical Engineering   |
| Dr.Ramachandra Rao MS (PH)    | • Section Editor, 'Condensed Matter, Interfaces and Related Nanostructures' Section of the Journal of Physics D: Applied Physics (JPhysD) |



## Best Paper / Poster Awards

- |   |  |
|---|--|
| Kiran Kumar Ramanaidu Marri (AM)<br>Dr.Ramakrishnan S                         | • Most Excellent Paper Award, 6th International Conference on Signal Processing Systems (ICSPS-2014)                           |
| Rajalakshmi S (BT)<br>Dr.Rama Shanker Verma                                   | • Best Poster Award, International Conference on Polymeric Biomaterials, Bioengineering and Biodiagnostics (Biomaterials-2014) |
| Revathi S (BT)<br>Dr.Sanjib Senapati  | • Best Poster Award, International Conference MD@50  |
| Dipin S. Pillai (CH)<br>Dr.Pushpavanam S                                      | • Best Poster Award, Dynamics Days Asia Pacific-08 (DDAP 08)   |
| Narasimha Reddy S (CH)<br>Dr.Sai PST  | • Best Paper Award, 5th International Conference on Chemical Engineering and Applications (CCEA 2014)                          |
| Ananya Bakshi (CY)<br>Dr.Pradeep T  | • Best Poster Awards, Bangalore India Nano   |
| Rajeshkhanna Gaddam (CY)<br>Dr.G.Ranga Rao                                    | • Best Poster Award, 5th Interdisciplinary Symposium on Materials Chemistry  |
| Rahul Narayanan (CY)<br>Depanjan Sarkar<br>Dr.Graham Cooks R*<br>Dr.Pradeep T | • Royal Society of Chemistry Poster Prize, 17th Chemical Research Society of India Symposium                                   |
| Chitra VS (CE)  | • Second Prize for Poster, Symposium on Air Pollution Induced Health Effects   |
| Ganesh Kumar S (CE)<br>Dr.Rajagopal K<br>Dr.Robinson RG                       | • IGS-MD Desai Memorial YGE award for Best Paper, Indian Geotechnical Conference   |
| Karthigeyan S(CE)<br>Dr.Rajagopal K   | • IGS-Chennai Chapter Biannual Prize for Best Paper, Indian Geotechnical Conference  |
| Muthulingam S (CE)<br>Dr.Rao BN   | • ScienceDirect Top 25 List of Most Downloaded Articles in Corrosion Science   |
| Omprakash Ranjan (CE)<br>Jyothi S Menon                                       | • First Prize for Poster, Symposium on Air Pollution Induced Health Effects  |
| Praveena Gangadharan (CE)<br>Dr.Indumathi M. Nambi                            | • Best Poster Award, International Conference on Microbial Fuel Cells  |
| Col. Rahul Oberoi (CE)<br>Dr.Veeraragavan A                                   | • Commendation Certificate for Paper, Indian Roads Congress  |

## Best Paper / Poster Awards (Contd...)

- |  |  |
|--|--|
| Srijith Balakrishnan (CE)<br>Prof. R. Sivanandan (CE)                      | • Best Paper Award, International Conference on Recent Trends and Challenges in Civil Engineering (RTCCE-2014)               |
| Harisankar Haridas (CS)<br>Dr.Janakiram D                                  | • Best Poster Award, 6th IBM India Collaborative Academia Research Exchange (I-CARE)   |
| Sudharsan J (CS)<br>Kalyan TV<br>Dr.Madhu Mutyam                           | • Bronze Medal, ACM Student Research Competition, PACT-2014  |
| Pankaj Arora (EE)<br>Dr.Ananth Krishnan                                    | • Best Poster Award, National Conference on Nanoscience and Nanotechnology (NS&NT)   |
| Pankaj Arora (EE)<br>Dr.Ananth Krishnan                                    | • Best Paper Award, Photonics 2014 Conference  |
| Raghuvaran Narasimhan (EE)<br>Dr.Anil Prabhakar<br>Dr.Nitin Chandrachoodan | • Best Paper Award, International Conference on Electronic Design, Computer Networks and Automated Verification (EDCAV 2015) |
| Jatheendranath Moothayil (ED)<br>Dr.Shankar Ram CS                         | • Student Paper Award, 7th Asian Conference on Multibody Dynamics (ACMD 2014)  |
| Chitra Margret Dey (MS)<br>Dr.Ganesh MP                                    | • First Prize for Best Paper, 14th Consortium of Management Students in Research(COSMAR-2014)                                |
| Giridhar Ramachandran (MS)<br>Dr.Richa Agrawal                             | • Third Prize, IMR Doctoral Conference 2014  |
| Nivethitha Santhanam (MS)<br>Prof.Kamalanabhan TJ<br>Dr.Lata Dyaram        | • Best Paper Award, 4th Annual International Conference on Business Strategy and Organizational Behaviour                    |
| Sowmya S (MS)<br>Dr.Krishna Prasanna P                                     | • Best Paper Award, 51st Eastern Finance Association Meeting   |
| Bala Suyambu Jeyaram (MA)<br>Dr.Rama R                                     | • Session's Best Paper Award, 18 <sup>th</sup> World Multi-Conference on Systemics, Cybernetics & Informatics (WMSCI 2014)   |
| Jayasree R (MM)<br>Dr.Sampath Kumar TS                                     | • Best Scientific Session Paper Award, 27th Annual Conference on the Indian Society for Dental Research                      |
| Dr.Sampath Kumar TS (MM)   | • JBT Best Paper Award 2014, American Scientific Publishers  |
| Anuj Kulshreshtha (OE)<br>Dr.Shanmugam P                                   | • Best Paper Award, International Conference on Water Resource, Coastal and Ocean Engineering (ICWRCOE'15)                   |

## Best Paper / Poster Awards (Contd...)

Patel AKP (OE)  
Dr.Rajiv Sharma

- Certificate of Excellence, International Maritime Technology Conference and Shipping & Maritime Expo

Sivabalan P (OE)  
Dr.Surendran Sankunny

- Best Paper Award, 9th International Conference on Marine Technology (MARTEC 2014)

Yogang Singh (OE)  
Vineet K. Upadhayay  
Dr.Idichandy VG

- First Prize in the Student Poster Competition, International Symposium (IEEE) on Underwater Technology - 2015 (UT 15)

Guruprasad Sahoo (PH)  
Dr.Mahaveer Kumar Jain

- Best Paper Award, International Symposium for Research Scholars on Metallurgy, Materials Science and Engineering (ISRS 2014)

Shaina PR (PH)  
Dr.Manu Jaiswal

- Best Poster Prize, NANODAYS 2015 Conference

\*Adjunct Faculty \*\*DST Young Scientist

## Scholarships

Karnati Vinod Reddy (CS)

- Aditya Birla Scholarship

Spandana Raj B (CS)

- Facebook's 2014 Grace Hopper Scholarship
- Google Anita Borg Memorial Scholarship (Asia Pacific)

Aayush Maloo (ED)  
Abhishek Goud Pandala (ME)  
Balasaravanan T Kumaravel (ME)  
Dhawal Rajendra Thakare (ME)  
George Francis (ED)  
Harish Venkatachalapathy (CH)  
Rama Srinivas Varanasi (MM)  
Sagar Joshi (ED)  
Sreedath Panat (ME)  
Sukruth Somappa (AE)

- DAAD Working Internships in Science and Engineering (WISE) Programme Scholarships

## Best Thesis Awards

- Dr. Anadi Singha Mahapatra (CY) • 2nd Prize, 2014 Lilly Outstanding Thesis Awards
- Dr. C. Venkatesh (EE) • Power System Operation Corporation (POSOCO) Award

## Student Prizes / Awards

- Chaitanya Peddawad (EE)  
Aman Goel, Dheeraj B • Third Place, Programming Contest, TAU Workshop, Monterey, CA.
- Shashwat Sharma (OE)  
Milind Agrawal  
Ankit Sharma  
Arpit Chaudhary  
Gaurav Bhargava • Third Place, PetroBowl - Quiz Competition of the Society of Petroleum Engineering International
- Rangeeth (AE)  
Sri Harsha K (CH)  
Sai Gole (ED)  
Koushick Balaji (ME)  
Aman Agrawal  
Anoop K  
Manish Prajapat,  
Rohit John  
Safar • Awards for Best use of advanced manufacturing methods and Best use of predictive design and simulation tools, Student Design Challenge, American Society of Mechanical Engineers
- Suthirth Vaidya (ED)  
Abhijit Chunduru  
Dr. Ganapathy Krishnamurthi  
Dr. M. Ramanathan • First Place at the Longitudinal Multiple Sclerosis Segmentation Challenge at ISBI 2015 held at New York.