

Students Activities

Cultural Activities

Board of Cultural Activities (BOCA) is dedicated to make students' campus life more enjoyable through a variety of cultural events. The Fine Arts Club conducted the "Taare Zameen Par" open sketching event on Gandhi Jayanti and Best *Out of Waste* event on November 11, 2015 to make something productive out of the waste material with the motto GO GREEN! On the same day, Inter Hostel Rangoli Competition was held.

On the eve of Diwali, the Drama Club organized *Stage Play Competition* and the Dance Club revived spirit of liveliness by organizing an open air dance event. To make Diwali more exciting, the Movie Club held its maiden screening. The show started with some great words by the Director, Prof. S. K. Das of IIT Ropar.

Music Club organized music events on October 2 and 'Come, Sing and Jam' on October 17, 2015. The Arturo-Photography Club covered all the events of the campus from Intra College Tech Meet during Diwali celebration.

Literary Club celebrated the traditional mythological heritage and folklore of India and organized '*Indian Mythology Quiz*'. Debate and extempore were conducted to judge the students' natural skills in speaking.



Science & Technology Events

Board of Science & Technology (BOST) has launched a three-phase plan for the student activities, keeping events for skills development, active



environment and enthusiasm in the first phase. Ready-to-use institute-oriented projects, prototype development in interdisciplinary research works and social projects will be worked upon through contests.

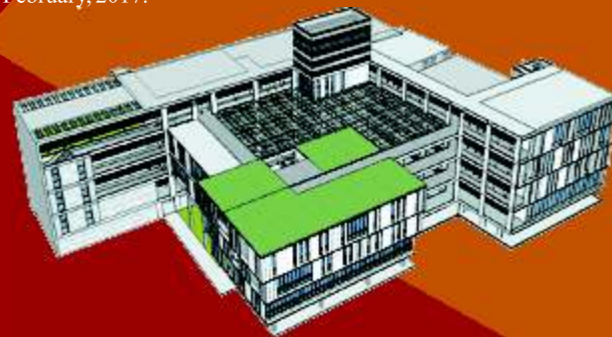
In association with Entrench Electronics, a *Weekend Workshop* was organized on October 3 - 4, 2015, covering the major directions that are useful for interdisciplinary projects. Hands-on experience on *automobiles & IC engines, android app development, 3D printing and robot-making* drew nearly 200 participants. *QUINTESENCE – Intra IIT Tech Championships*, was organized on November 6-7, 2015. Quiz-up battleground; Codeathon; Arth-vivad; Blueprint and Line-X were some of the events that provided students a platform to analyze their technical capabilities.

Glimpse of the upcoming Computer Science & Engineering Block

Construction of different buildings under phase-I for new campus of IIT Ropar has been entrusted to CPWD. At present 4 academic blocks are constructed at the main campus. The Computer Science & Engineering block is one of the buildings amongst these four academic blocks. This block is planned with modern building concepts & design and construction technology conforming to ECBC norms and Green Building certification of 3 star "GRIHA-LD". It will be a 3 storey RCC framed structure of 5200 sq. m. plinth area with two distinct zones namely, teaching area and faculty area, both interconnected by interactive corridors.

The architectural design encompasses user friendly teaching and faculty areas, naturally lit structures, airy and open spaces including shaded main spaces to have a cool & eco-friendly building with provision of integrated future extension. It will house a seminar hall for 100 person, 2 class rooms each for 30 and 60 students, 2 IT services and server rooms, reception and department office, 2 general purpose computing labs, an incubation lab and 15 research labs in the teaching area. 27 faculty offices, a meeting room, visiting faculty offices and a faculty lounge housed in faculty area. The entire building will be air conditioned with smart features such as occupancy sensors, building management system, electric signages, biometric attendance system, video and audio conferencing, video walls and screens. The area around building will be landscaped comprising of designed soft and hard landscapes to enhance the aesthetics completely integrated with the surroundings.

The expected date of completion of Computer Science block is February, 2017.



Perspective view of Computer Science Block

Prajwalam

The Newsletter

Indian Institute of Technology Ropar



Vol-4 | Issue -3

Convocation Special

Director's Message

Dear friends,

The summer semester is coming to an end and during this semester we have seen a plethora of academic and other activities at IIT Ropar. The campus today is a 'happening place' where we are realizing our dream of becoming a premier institute very passionately.

The most important event among them was the fourth convocation of the institute where 107 students received the B.Tech. degrees and 17 students received the PhD degrees. We have taken major steps towards enhancing our academic and research activities including the decision of establishing a new Department of Civil Engineering. A number of task forces to identify the research focus, the change in courses & curriculum and the introduction of new academic programs have been constituted.

We are in the process of adding to our faculty strength. We have taken up the task of enhancing the research infrastructure significantly. Most importantly, the construction of our main campus is progressing at a brisk pace. Our vibrant campus residents celebrated Diwali and the birthday of the Father of the Nation. I seek your support and suggestions to add to this vibrant atmosphere, which will help us to grow to a world class institution. Jai Hind!



Chairperson BoG, Mrs. Lila Poonawalla while addressing the gathering expressed that it has been a unique experience participating in the developments at IIT Ropar. She appreciated the fast progress on the construction of new campus and on starting of new academic programs such as the new PG programs and the UG program on Civil Engineering. Mrs. Lila Poonawalla impressed upon the enormous expectations from IIT Ropar in building a New India. In an inspiring speech, she presented personal anecdotes to motivate students.

The Chief Guest, Dr. T. Ramasami, described the roles and responsibilities of the younger generation and the importance of new IITs in shaping the future of India. He expressed that educational institutions limit their focus for preparation of unprepared minds. In a thought provoking speech, he brought to light how the conventional "Minds-on" approach is increasingly becoming irrelevant in today's "Hands-on" era.

The convocation saw 107 UG and 17 PhD students receiving degrees. The President of India's Gold Medal as well as the Director's Gold Medal was awarded to Pulkit Gera of the Department of Electrical Engineering. Institute Silver Medals were awarded to Gourav Bansal of Computer Science and Engineering and to R. Rohan Prasad of Mechanical Engineering.



Pulkit Gera
(President's Gold Medal & Director's Gold Medal)

Gourav Bansal
(Institute Silver Medal)

R. Rohan Prasad
(Institute Silver Medal)

Excerpts from the Address of the Chief Guest

Dr. T. Ramasami, the Chief Guest, inspired and motivated the students on their roles and responsibilities in shaping the future of India. Some of the important points emphasized by him were:

- Indian Institutes of Technology are the Change Agents for India
- The world has realized that the next best generation of Indians have arrived on the global scene
- New IITs can define cultural changes in work place and new paradigms in work ethics
- Graduating students of IIT Ropar are specially selected, carefully shaped and released into larger society with great expectations

Inception of Civil Engineering at IIT Ropar

IIT Ropar announces the commencement of the B.Tech. programme in Civil Engineering from the academic year 2016-17. Details are available inside.



Convocation 2015



The fourth convocation of IIT Ropar was held on November 3, 2015. The convocation Chief Guest was Dr. T. Ramasami, Former Secretary, Department of Science & Technology and was presided over by Ms. Lila Poonawalla, Chairperson, Board of Governors of IIT Ropar. The institute Director, Prof. Sarit K. Das presented Institute's report where he highlighted notable achievements of Institute by way of academic transformation, research output, infrastructure development, externally funded projects & industrial consultancy, reorganization of administration and industrial relations, international and alumni affairs etc.

Know Our Faculty

Dr. Harpreet Singh, Department of Mechanical Engineering



The prime focus of my research group is Surface Engineering and Tribology with an aim to develop materials with superior functionalities. This includes development of surface coatings using different thermal spraying techniques for addressing erosion problems in hydro-turbines, hot corrosion and erosion problems in boilers and developing superior bio-implant materials. We have extensively worked on developing several novel coating compositions with exceptional performance under severe degradation environment. Our group has contributed first-ever generic mathematical model to predict the erosion mechanisms for different materials (both ductile as well as brittle), namely, “Erosion Mechanism Identifier, ζ”.

Besides surface engineering, development of ultrafine grained materials with significantly improved mechanical and tribological properties is another area of research in our focus. We have used severe plastic deformation (SPD) processes such as friction stir processing for tailoring the surface properties of both crystalline and amorphous materials. This includes wide range of materials ranging from low strength magnesium alloys to high strength steels and bulk metallic glasses. In addition, we are also exploring SPD concept via modulation assisted machining to develop sustainable manufacturing process for several materials. Our group holds the unique distinction of having produced the first PhD student of the institute.

Civil Engineering at IIT Ropar

IIT Ropar announces its plan to establish an academic department of Civil Engineering with effect from July 2016. In the first phase, two academic programs viz. B.Tech. (Civil) and PhD shall be introduced. The B.Tech. program apart from covering the fundamental courses, shall imbibe all traditional aspects of Civil Engineering including materials, structures, water resources, environment, soil mechanics foundation, transportation and geomatics in a holistic mode avoiding unnecessary compartmentalization. Larger emphasis shall be placed upon the engineering sciences with an objective of producing “thinking” engineers, capable of tackling even unorthodox engineering challenges. In addition, focus shall be on related modern developments like new materials, wireless sensors, modeling and simulation and the current issues of climate change. Initially the intake into the program shall be restricted to 25.

The PhD program shall encompass the entire spectrum of Civil Engineering and other interfacing disciplines. However, larger emphasis shall be placed upon the problems of the region like floods, water-logging, earthquakes, road accidents, cancer epidemic, dwindling water resources, degrading environment & water quality.

New Research Facility

IIT Ropar has commissioned Sum Frequency Generation (SFG) vibrational spectrometer facility, which is a first of its kind in an academic institute/university in India. Dr. K. C. Jena, faculty of Physics, will be the Project Incharge of the SFG facility. It has been developed with a total budgetary overlay of Rs. 2.2 crores as part of the institute central facility.

In the recent past, SFG vibrational spectroscopic tool based on second-order nonlinear optical phenomenon has shown tremendous potential to probe interfacial properties with excellent molecular and surface specificities. SFG occurs when two pulsed laser beams, one of fixed visible frequency and the other of tunable infrared frequency satisfy the spatial and temporal overlap at an interface. The intensity of the generated SFG beam is resonantly enhanced when the frequency of the tunable infrared beam matches with a vibrational mode of the molecules residing at the interface. By detecting the SFG signal as a function of the infrared frequency, a vibrational spectrum of the interfacial species at the interfacial region can be obtained. The observed spectrum can be analysed to present the molecular conformation, composition, polar orientation and average tilt angle of the interfacial molecules at the interface. This has immense applications in probing protein folding, drug delivery, cellular activities, fuel cells and developing biocompatible materials.



MoU with Semiconductor Lab, ISRO

IIT Ropar and Semiconductor Lab (SCL), Mohali entered into an MoU on October 11, 2015. The MoU was signed by the Directors of both these organizations at our campus. The MOU involves collaboration between SCL and IIT Ropar in exchange of staff and students; collaboration in teaching, research & development and consultancy activities; joint project proposals and research activities in the areas of Advanced VLSI Device Fabrication, MEMS Fabrication, VLSI Device/MEMS Characterization, VLSI/CMOS-RF Circuit Design and Device Modeling.

IIT Ropar reaches out to colleges of Punjab

IIT Ropar organized the first of its kind Directors'/ Principals'/ Deans' Meet of Engineering Colleges of Punjab. Representatives from PEC University of Technology, Chandigarh; Guru Nanak Dev Engineering College, Ludhiana; IET Bhaddal, Ropar; Baba Banda Singh Bahadur Engineering College, Fatehgarh Sahib; Chandigarh University, Gharuan; Shaheed Udham Singh College of Engineering & Technology, Tangori; Amritsar College of Engineering and Technology, Amritsar; Guru Nanak Dev University, Sathiala; DAV Institute of Engineering and Technology, Jalandhar and DAV University, Jalandhar participated in the meet and presented their views to foster collaborative ecosystem among the participating institutions so that the standard of technical education in the state could be uplifted.

Prof. Sarit K. Das, Director of IIT Ropar during his inaugural speech emphasized on the need to raise the standard of engineering students so that well trained engineering manpower can be provided to the nation. He added that institutions should learn from each other and work together on areas of common interest. He designated all the participating institutions as **Associate Institutions of IIT Ropar** and promised to extend every possible help for the growth of these institutions. Dr. Harpreet Singh, Associate Dean (Industrial Relations, International & Alumni Affairs) stressed upon hosting student internships at IIT Ropar, sharing of central research facilities and library resources, continuing education and organizing workshops etc. for students and faculty members of Associate Institutions.

A *Council of Educational Associates* consisting of Heads of colleges under the Chairmanship of Prof. P. K. Raina, Dean (Academics), IIT Ropar was formed, which will work out and facilitate various activities to be conducted by the participating institutions. This council will formally launch its action plan for joint activities in January 2016.



Design Exhibition

IIT Ropar hosted a Design Exhibition on November 17, 2015. The participating departments were Mechanical, Electrical and Computer Science. 62 students under the guidance of Dr. Prabir Sarkar and 81 students under the guidance of Dr. Rohit Y. Sharma displayed their products and digital circuit designs. The institute has enthusiastically supported this event. Best designs were awarded cash prizes and special mentions. Mr. S. S. Bhogal, Chairman CII, Chandigarh, Mr. Dinesh Dhiman, GM, DCM Ropar, Mr. Gurharminder Singh, Senior Scientific Officer, Punjab State Council for Science and Technology, Chandigarh, and Mr. A. K. Saini, Group Director, Electronic Systems Group from SCL were the judges for this event.



Workshops

Advanced Semiconductor Packaging Workshop

An *Advanced Semiconductor Packaging Workshop* was held at the Indian Institute of Technology Ropar on November 7, 2015. This one-day event, a first in this region, was sponsored by the IEEE Components, Packaging and Manufacturing Technology Society (Bangalore Chapter), IEEE Delhi Section and IIT Ropar.

The aim of this workshop was to identify and address burning issues in the area of IC packaging particularly for young researchers and students of Northern India. The workshop had 4 technical sessions from renowned academic and industrial experts including, Prof. C. Balaji (IIT Madras), Dr. Dipanjan Gope (IISc Bangalore), Dr. Arun Chandrasekhar (Intel) and Mr. Rajkumar Nagpal (Synopsys Inc.). A keynote lecture titled *Electronics Systems Packaging-Challenges and Opportunities* was delivered by Prof. Madhavan Swaminathan (Georgia Institute of Technology, Atlanta, USA) that set the tone for this event.

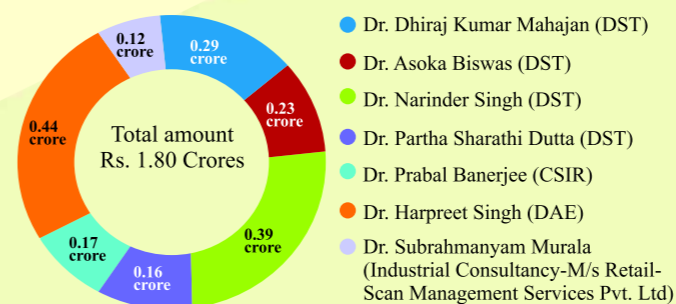
Speaking on the sidelines of this workshop, Dr. Rohit Y. Sharma, Workshop Convener, impressed upon creating awareness and a vibrant ecosystem for Electronic System Design in the region, particularly in light of various government initiatives like Digital India and Make in India. The inaugural session was presided by Prof. Ramesh Garg, Dean (Faculty Affairs and Administration), IIT Ropar. Over 60 participants from industry, government labs, IITs, NITs and universities in and around Ropar participated in this workshop.



Cynosure-2015

The Department of Mathematics, IIT Ropar organized the annual research day, *Cynosure-2015* on November 7, 2015. This event aims at motivating young students and academicians towards research in Mathematics and allied areas. There were four invited talks by Prof. R. B. Bapat of ISI Delhi, Prof. Sudhir R. Ghorpade of IIT Bombay, Prof. Amiya K. Pani of IIT Bombay and Prof. Govindan Rangarajan of IISc Bangalore. Out of the 75 participants, 28 presented their research work in the form of posters. Two best posters were selected by the invited speakers. Discussion among participants and experts on various issues affecting frontiers of Mathematics was very fruitful and accomplished the main intent of hosting this event.

External Funded Projects/ Industrial Consultancy



*Projects awarded from September 17, 2015 to November 20, 2015

Seminars and Colloquium

1. *Positioning India in global STI landscape: Role of Researchers* by **Dr. T. Ramasami**, Former Secretary, Department of Science & Technology, India on September 21, 2015.
2. Nobel Colloquium on *Burning of the Sun & Turning of the Earth: Probing Nature with Neutrinos* by Prof. **Amitava Raychaudhuri**, Particle Physicist on November 20, 2015.
3. *NanoFluidic Energy Conversion* by **Prof. Suman Chakraborty**, Department of Mechanical Engineering & Head of Medical Sciences & Technology, IIT Kharagpur on October 1, 2015.
4. Dr. Rajyashree Khushu-Lahiri Memorial Lecture on *Poetry and Poet in the 21st Century* by **Padmashree Keki N. Daruwalla** on September 22, 2015.

Library Meet

The 4th *Annual Meet of Newer IIT Library Managers* was held in IIT Ropar on November 20-21, 2015. The meet was inaugurated by Prof. S. K. Das, Director and Prof. P. K. Raina, Dean (Academics). Library managers from all the 8 newer IITs participated in this meet. The deliberations of the meeting surely guide in leading newer IIT libraries to a greater level of excellence and help to work out the strategies for future development including, optimization of library resources; forming best practices & policies of common interest; development of new library buildings; drafting policies for the Institutional Repository; exploring Patron Driven Acquisition; creation of formal structure and mechanism for Inter Library Loan; Library staff training in core & emerging areas; development of research support services; and identifying emerging technologies & tools for research data analysis.



हिंदी पखवाड़ा

भा.प्रौ.सं.रोपड़ में हिंदी दिवस के उपलक्ष्य में हिंदी पखवाड़ा 2015 का आयोजन दिनांक 14-09-2015 से 28-09-2015 तक किया गया। हिंदी पखवाड़ा कार्यक्रम के उद्घाटन सत्र में मुख्य अतिथि के रूप में राज्यसभा टीवी के पूर्व कार्यकारी संपादक श्री उर्मिलेश जी विशेष रूप से उपस्थित थे। डॉ. अरविंद कुमार गुप्ता, सहायक प्राध्यापक ने मुख्य अतिथि एवं सभी उपस्थितों का स्वागत किया। प्रो. सरित कुमार दास, निदेशक, भा.प्रौ.सं.रोपड़ ने मुख्य अतिथि महोदय का स्वागत किया। अपने वक्तव्य में प्रो. सरित कु. दास ने कहा कि अगर हिंदी को आगे बढ़ाना है तो उसे सरल बनाकर इस्तेमाल करना होगा। श्री उर्मिलेश जी ने हिंदी तथा मीडिया के अंतःसंबंध पर अपने विचार रखे और छात्रों, संकाय सदस्यों और स्टॉफ की जिज्ञासाओं का समाधान भी किया।

इस अवसर पर निदेशक महोदय प्रो. सरित कुमार दास जी ने हिंदी की ई-पत्रिका संगम का भी उद्घाटन किया। डॉ. अनुपम अग्रवाल, सहायक प्राध्यापक ने सभी का आभार व्यक्त किया। इन पंद्रह दिनों के कार्यक्रम में विद्यार्थियों, संकाय सदस्यों, कर्मचारियों तथा संकाय सदस्यों और कर्मचारियों के बच्चों के लिए भी अलग-अलग प्रतियोगिताओं का आयोजन किया गया जिसमें हिंदी निबंध, वादविवाद, क्वीज, कविता वाचन आदि प्रतियोगिताओं का समावेश था। सभी ने इसमें बढ़-चढ़कर हिस्सा लिया। दिनांक 28-09-2015 को प्रो. सरित कुमार दास, निदेशक महोदय की अध्यक्षता में हिंदी पखवाड़ा का समापन सत्र का आयोजन किया गया। कुल 46 नकद पुरस्कारों, स्मृतिचिन्हों तथा प्रमाणपत्रों का वितरण किया गया।

