

4th Convocation

Tuesday, November 3, 2015



Director's Report



भारतीय प्रौद्योगिकी संस्थान रोपड़
INDIAN INSTITUTE OF TECHNOLOGY ROPAR

Honorable Mrs. Lila Poonawalla, Chairperson, Board of Governors of Indian Institute of Technology Ropar, today's distinguished Chief Guest Dr. T. Ramasami, Former Secretary, DST, Members of Board of Governors, Members of Senate of IIT Ropar, invited dignitaries, graduating class of 2015 and their proud parents and family members, members of press and electronic media, Faculty members, ladies and gentlemen: I extend the most cordial and hearty welcome to each one of you on the occasion of the fourth convocation of the institute.

I am immensely happy to welcome our chief guest, Dr. T. Ramasami, who will be delivering the fourth convocation address. Dr. Ramasami was the Secretary to the Government of India, Department of Science & Technology during 2006 - 2015, playing a pivotal role in coordinating and promoting scientific and technological activities in the country. One of the very successful initiatives, which carries the signature of Dr. Ramasami, is the INSPIRE programme of Government of India. As a scientist, Dr. Ramasami has set a standard of his own, emerging as an international expert in Chromium Chemistry. His research efforts at CLRI have saved the Indian leather industry from a disaster, when an environmental ban was slammed on this industry. He has been the former Chairman of BoG of IIT Ropar and a constant inspiration for us. We are grateful to you for accepting our invitation.

I have a great pleasure and privilege in welcoming Honorable Mrs. Lila Poonawalla, Chairperson of BoG of IIT Ropar whom the nation had honored with Padmashree. I must mention here that we are fortunate to have Honorable Mrs. Poonawalla as the first woman Chairperson of our BoG. She is a multifaceted personality: Industrialist, Philanthropist, Woman emancipator and is endowed with excellent humanistic qualities.

However, the champions of today's celebration are the graduates who through their hard work and perseverance have come to be known as IITians and are ready to embrace the difficult challenges and sea of opportunities of the 21st century. Surely, IIT Ropar during the past years has played an important role in shaping them as professionals, academicians, entrepreneurs and leaders of the society in the years to come.

In the next few minutes I shall present the developments that happened in this budding institute during the last year and try to project our activities for the coming years.

Academics

Academics is at the core of our activities. The institute currently has 7 Departments (Department of Chemistry, Department of Computer Science and Engineering, Department of Electrical Engineering, Department of Humanities and Social Sciences, Department of Mathematics, Department of Mechanical Engineering and Department of Physics) and 2 Centers (Center for Biomedical

Engineering and Center for Materials & Energy Engineering). We offer B.Tech degrees in three disciplines – Computer Science and Engineering, Electrical Engineering, Mechanical Engineering; M.Sc. degrees in Chemistry, Mathematics and Physics and M.Tech degree in Mechanical Engineering. Currently 651 students are enrolled at IIT Ropar of which 474 are undergraduate students, 42 are postgraduates and 135 PhD scholars. This year, the fresh intake at IIT Ropar was – 122 undergraduate students, 23 M.Sc. students, 19 M.Tech. students and 44 PhD scholars. This year, 107 undergraduate students and 17 PhD students are going to receive their degrees. I am very pleased to state that IIT Ropar is doing well in all outcome based parameters including JEE ranking of students admitted during 2015-16, on the impact of research publications emanating from IIT Ropar and in governance. Opening rank of students admitted to IIT Ropar during 2015-16 was the second best amongst ten new IITs.

A task force committee has been constituted in the institute which has recommended the starting of new UG and PG programs at IIT Ropar in the coming years. The committee has recommended that a B.Tech in Civil Engineering (with emphasis on water resources, environmental engineering, and structural dynamics) be started from July 2016 with a maximum strength of 25 students. Senate approval for the same has also been obtained. In the subsequent years, B.Tech in additional streams (such as Chemical Engineering, Biomedical Engineering etc.) will also be started, along with M.Tech in Electrical Engineering, Computer Science and Engineering, Civil Engineering, Chemical Engineering, Biomedical Engineering etc.

Faculties of IIT Ropar have been continuously involved in the up-gradation of curriculum, developing new courses and bringing in new teaching pedagogy. For instance, we are among the handful of institutes in the country with know-how and experience of designing and running MOOCs which is a key thrust area of MHRD. In addition, a formal curriculum task force committee has been constituted this year in order to review and recommend a UG curriculum that will impart theoretical, practical and leadership skills needed to make the students good human beings and fulfill the contemporary local and global engineering, technological and social needs. The objective of this committee is to design engineering UG curriculum that delivers, among other things, the following:

1. Improved curriculum with the aim of producing 21st century engineers and entrepreneurs,
2. Offers more flexibility to students,
3. Has novel and unique features to attract the brightest of students,
4. Has better utilization of manpower and resources,
5. Encourages industry-academia interaction,
6. Makes students more practical in approach,

7. Imparts soft/managerial skills in addition to science and engineering fundamentals,
8. Develops social responsibilities in students.

As one of the initiatives is to bring international exposure to the students, last year a Humanities course was offered by a faculty member from Canada (using the audio-video conferencing facilities). IIT Ropar has been encouraging and supporting UG students to be innovative. This include workshops, design and development of innovative products/gadgets, software development etc. IIT Ropar has been generously providing financial support to its UG students to present research papers in prestigious conferences abroad.

All our 3rd year students have secured internships in well-known Companies/Institutions in India and abroad including California Institute of Technology, University of Toledo, USA and Universitaet Duisburg-Essen, University of Ulm, Ruhr-Universität Bochum, Germany. Several of these students have undertaken summer internship abroad with prestigious fellowships (USA – S. N. Bose Fellowship, Canada – MITACS Fellowship and Germany - DAAD Fellowship etc). It was heartening to note that most of these were paid internships.

As a part of its academic responsibility, one of the notable features of IIT Ropar, has been in providing internships for B.Tech and other Post-graduate degree students. This year, nearly 80 Interns spent their time on short-time projects coming from different Institutions across the country.

The working of Academics Section has been automated using online tools which have been developed in-house by our IT Section in order to make the various processes involving the students' enrollment and course feedback fully online. Also, an anti-plagiarism software tool has been procured by the institute. In future, a Teaching Learning Center (TLC) is planned to be established at IIT Ropar to facilitate the revolutionary changes taking place in the paradigm of teaching-learning process.

The institute has started M. Tech programme in Mechanical Engineering and M.Sc. programmes in Mathematics, Physics and Chemistry from the academic year 2015-16. The main goals of the postgraduate programmes are to develop scientific and engineering manpower of the highest quality, to cater to the needs of Industry, R & D organizations and educational institutions, and to enable students to have awareness and sensitivity to the needs and aspirations of society. The programmes have been structured in such a way that interested students can upgrade to the PhD programme. MS programmes in the departments of Electrical Engineering and Computer Science Engineering with intake of 10 students each are likely to commence from January 2016.

Research

IIT Ropar research fraternity puts immense emphasis on promoting cutting edge research useful for the country and publications of highest quality and not just quantity. We firmly believe that this is the key to our recognition in the international research community. We offer PhD degrees in all disciplines. At present, we have 135 PhD scholars in the institute. 17 PhD scholars have successfully defended their theses and 44 scholars have joined the PhD program during the last one year.

Over the last one year, as many as 170 papers have been published in various high impact international journals. This has already placed us at the top of all the new IITs for having the highest average citations (Average Citation per Paper, ACPP of 5.16 as on October 23, 2015 SCOPUS data). Several sophisticated research equipment have been procured since last year, which regularly cater to a large number of institutions in and around Punjab. IIT Ropar has hosted 4 conferences / workshops over the last one year.

On the national front, IIT Ropar is deeply involved in the national level IMPRINT (Impacting Research Innovation and Technology) initiative. Several of our faculty members are directly involved in providing a road map for our country in the domains of energy, healthcare, environmental science and climate change, nanotechnology hardware, advanced materials etc. The Hon'ble President of India in presence of the Hon'ble Prime Minister of India and Hon'ble Minister of Human Resource Development will be inaugurating this initiative at the Rashtrapati Bhavan day after tomorrow. We are also actively involved in several other national initiatives like Rashtriya Avishkar Abhiyan, Unnat Bharat Abhiyan and Swachh Bharat Abhiyan, just to name a few.

As an institute, we dream of becoming the best in a few chosen areas of research rather than remaining a jack of all trades. Keeping this in mind, we have recognized our strength in a few domains and formed interdisciplinary groups, thereby trying to make a concerted effort to focus our research in the areas of manufacturing and skill development, bio imaging, bioinstrumentation, unconventional diagnostics and therapy, renewable and clean energy, sensors, micro and nanofabrication and agriculture & rural development, involving water resources, food preservation & processing and rural energy sources. We would be glad if this small step of ours turns out to be a giant leap towards meeting and eradicating some of our national needs and challenges.

Our institute acknowledges awards won at the national level by our faculty members. As a token of appreciation and encouragement, one of our faculty members, Dr. Rajesh V. Nair has been given a grant award from our institute for becoming an INSA young scientist medal awardee in Physical Sciences for the year 2015. I would like to mention here that he happens to be the only recipient of this award among all the new IITs. Besides this, our faculty members and students have won several awards of national and international repute.

In order to meet the national need of significantly increasing the number of PhD scholars as was pointed out by the Kakodkar Committee report, IIT Ropar has taken up several bold steps in this direction and started several new programs. Our M.Sc.-M.S. program in various disciplines is primarily aimed towards training world class graduate students. In addition to the normal and existing PhD programme, we are going to start Direct PhD and External PhD programme from the next semester, which would help us pool in brilliant undergraduates and PhD aspirants from other institutes, respectively. We are also introducing new and flexible programs like institute post-doctoral and pre-doctoral fellowships in order to promote a vibrant research environment.

Infrastructure

Transit Campus

The institute started functioning from the transit campus from August 19, 2009. This campus is serving most of the needs of our present students, faculty and administrative staff. We have all the necessary facilities on campus, such as health centre, institute transportation, bank, ATM, 24/7 Internet access, full power backup, guest house accommodation and sports and recreational facilities, which are required to support a comfortable on-campus living. We have recently rented a fully furnished apartment tower in the vicinity to provide comfortable accommodation to our growing number of research scholars. Though this transit campus has been serving our current population well, we are keen to move to the permanent campus by mid of 2017 so as to meet our projected growth ambitions.

New Campus

Progress of the permanent campus project has been a high priority item for us. The good news is that after starting the work on site in January 2015, we have been able to meet our physical and financial milestones in construction.

After taking office in June 2015, I took a detailed stock of the status and bottlenecks in this project. Coordination and monitoring were identified as two key issues facing the project. A mega project of this scale typically requires engaging multiple agencies, and thus coordination and monitoring issues are inevitable. In order to address these issues and meet the target of creating a functional campus our strategy today emphasizes on three aspects:

1. Define clear protocols for time boxed resolution of issues between interfacing agencies.
2. Implement a close monitoring mechanism to ensure progress and quality.
3. Plan for and ensure continued flow of funds for the project.

On ground, this strategy is implemented by a small group headed by the Director. This group, we call it Project Monitoring Group, comprises of the Associate Dean (Infrastructure) and two experienced external consultants. The group holds bi-weekly in-person meetings with key stakeholders in the project, i.e. Architects, CPWD and contractor, to monitor and resolve potential bottlenecks. As a result, the project has shown remarkable acceleration in recent months.

For Phase-I, we were originally sanctioned about 85400 sq. mtrs. buildup area. However, in order to have a functional campus, we had to include some more items which are essential. Our target today is to have the following buildings by mid of 2017:

1. Academic: CSE, EE, ME and Chemistry departments.
2. Common: Administration block, Library, Workshop, Lecture halls, Utilities centre (Health, bank, shops etc.), Sports facilities.
3. Residential: Boys Hostel (690 units), Girl's hostel (100 units), Visitor hostel (40 units), Residences for faculty (~120 units), staff (56 units) and the Director's Residence.

About Rs. 75 crores has been spent on construction till October 2015. As of today, all 12 main buildings planned in Phase-I have reached up to the plinth-level or above. Of these, we have casted the first floor slab for 2 buildings and shuttering for first floor slab has been done for 8 buildings. By the end of December, we shall cast the first floor slab for all the 12 buildings.

Looking forward:

Our original sanction from MHRD for total built-up area for all phases is about 2,21,000 sq. mtrs. By around 2020, we are looking to build the remaining of our planned departments. While intake of existing disciplines will grow, we will also be adding new programs and departments, which will include 2400 students and the requisite members of faculty and staff by 2020. From funding standpoint, we have strong indications that MHRD is revising fund allocations to various new IITs by taking into consideration the current scenario. Overall, we have built the much needed synergy and momentum in this project and have started to see its positive outcome.

Externally Funded Research and Consultancy Projects

As on October 21, 2015, the total funding from non-internal sources with the institute amounts to Rs. 22.68 crores. Forty individual faculty members are currently involved in 66 ongoing projects. Also, 22 externally funded projects worth Rs. 5.17 crores have been successfully completed. Assuming similar success, the institute may expect projects up to Rs. 40 crores at any given time during the coming year with an increase of faculty strength.

Success at non-internal funding support has drastically improved in recent months. This is seen from the following figures:

- Sanctioned non-internal funding across Jul 14 - Jun 15: Rs. 3.15 crores involving efforts from fifteen faculty (about Rs. 0.21 crore per faculty across 12 months).
- Sanctioned non-internal funding across Jun 15 - Oct 15: Rs. 6.79 crores involving effort from eight faculty (about Rs. 0.85 crore per faculty across four months).

Thus, if the institute takes an optimistic view of Rs. 6.79 crores across four months (the current momentum), then with a projected team of seventy two faculty by the end of this year we expect Rs. 20.37 crores per academic year. Needless to say that this will grow with the recruitment of new faculty in the coming years.

In order to handle this growing activity in the Sponsored Project & Industrial Consultancy front, it has been decided to establish a self-sufficient section of Sponsored Projects & Consultancy with its own set of rules and infrastructure for finance, accounts and establishment. The Dean of Sponsored Projects & Consultancy is already on the job to create this structure.

Re-organization of Administration

A number of administrative reforms have been carried out in the last year so as to provide better governance to the stakeholders of IIT Ropar. Three deans have been appointed, one each for Academics, Sponsored Projects & Consultancy and Faculty Affairs & Administration. Six associate-deans have also been appointed to take care of Academics-UG, Academics-PG, Research, Students Affairs, Infrastructure and Industrial Relations, International & Alumni Affairs. In order to speed-up the official procedures and provide better services, administrative and financial powers have been de-centralized at HoD, Dean and section levels. Departments/standing committees have been empowered to participate in the decision-making so as to bring transparency and involvement of stakeholders in the working of the institute. Two student members have been inducted into the Senate of IIT Ropar to bring the opinion of students' community in academic matters. In order to strengthen administration, two Deputy Registrars and two Assistant Registrars have been appointed. Re-organization of the administrative staff in order to facilitate time-bound and growing services is on the cards.

The process of recruitment and promotion of faculty at various levels have been started. In addition to this, the institute is planning to hire faculty from some of the top-class universities of US, Canada and UK through on-campus interviews in June 2016, for which a delegation from IIT Ropar shall visit these countries along with external experts.

Industrial Relations, International and Alumni Affairs

Realizing the need for industry-institute linkages & its growth, relations with international universities & Indian diaspora and alumni, a dedicated Dean's office, designated as Office of Industrial Relations, International and Alumni Affairs has been established in the month of July 2015. Industrial lecture series has been started, for which renowned industrialists are being invited on-campus to deliver technical and motivational talks. The institute has got the membership of Confederation of Indian Industry (CII) in order to strengthen its tie-ups with industry. The Department of Mechanical Engineering had organized an Industry-Academia Conclave on May 11, 2015, in which industrialists from more than thirty well-known organizations participated. In addition to its on-going MoUs with several universities, the institute recently signed MoUs with Swinburne University of Technology (SUT), Australia; Sungkyunkwan University (SKKU), South Korea; Aksaray University, Turkey and Semiconductor Lab (SCL), India. The institute has been actively participating in National-level initiatives such as Global Initiative of Academic Network (GIAN), under which the institute has got a grant to hold a short-term program on Surface Engineering in June 2016.

The placement results of B.Tech. 2015 passed-out batch at IIT Ropar were very encouraging. The organizations that participated in the final placement included premier companies, such as Google, Amazon, Microsoft, eBay, Arista Networks, Flipkart, Bharat Petroleum, Larsen & Toubro, Cognizant, Nagarro, SCA Technologies, Avanti and DRDO. Some of the new companies that participated in the placement process were Snapdeal, Zomato, Tata Motors, Capgemini, Elegant Marine, HCL, R Systems, Innoplexus, ITC Infotech, Kayako, Mahindra & Mahindra Ltd, Meritnation and Misys Software Solutions. The response from industry was overwhelming with companies in the recruitment process making 80 offers to the students with overall placement of 74%. The highest package offered in India was Rs. 28.5 lacs per annum. The average salaries offered to our students was 11 lac per annum. Recently, 98 students underwent the compulsory Soft Skill Development program conducted at IIT Ropar with an eye towards placement for the current year.

The institute is now working to set-up a research park, which shall be an independent company under Section 25 of the Companies Act 1956, promoted by Indian Institute of Technology Ropar with major financial support from MHRD. The draft proposal for the same has recently been submitted to MHRD. The objective is to facilitate the conversion of research activity into entrepreneurial ventures. An institute-level Industry-Institute Conclave shall be organized in May 2016 to host and interact with industrialists from more than 100 companies. In order to give a boost to the training and placement activities, the institute is going to establish Corporate Relations and Career Development Center by the end of this year.

In order to fulfill one of its mandates to foster mutual academic and research

collaborations with its neighboring institutes, the institute is going to organize one-day Directors'/Principals'/Deans' meet with engineering institutions of the region on November 19, 2015 at its campus. The aim is to adopt two engineering colleges of the region for their academic and research upliftment and constitute a consortium of engineering colleges to facilitate outreach programs.

Student Affairs

The present Student Affairs Section has been restructured with the following functional units:

- 1) Board of Hostel Affairs (BOHA)
- 2) Board of Cultural Activities (BOCA)
- 3) Board of Science & Technology (BOST)
- 4) Board of Sports Activities (BOSA)

For the first time, a Constitution of the student body has been prepared with the participation of students and the same was circulated to student community before it was adopted.

Elections were held on the September 5, 2015 under this constitution wherein one student General Secretary and four respective Board Secretaries were elected by the students.

Chief Warden was appointed for the first time and the activities of BOHA were extended to the new leased hostel.

The BOCA has conducted several functions, including Fresher's night and Gandhi Jayanti. Arrangements are being made to start a movie club for hosting movies every week for the entertainment of the campus community. BOCA is presently working on the conduct of Zeitgeist fest in the month of February 2016.

The BOST has conducted workshops on Android, Automobile, Androbot, Sparshbot and 3D printing, Intra college manual robot task (Robotics Club) and Monochrome Design. BOST is working towards the establishment of Centre of Innovation which provides ample opportunities to the students in Science & Technology.

Board of Sports Activities (BOSA) is supporting inter year, inter hostel sports activities. Further, the students were encouraged to participate in local/inter college sports activities to boost their performance in inter IIT Sports meet. Professional guides/coaches are taking care of training the students in individual sports. The sports facilities including gymnasium are being upgraded to enhance the quality of facilities at the institute.

To summarize, I would like to state with utmost pride and equal humility that IIT Ropar has embarked upon spearheading the technological growth of the Nation

in the 21st century. Our strength lies in the diversity of our faculty and students that makes our campus vibrant. Focused and highly directional pursuit in academics and research forms the bedrock of our success. We have made initial yet robust steps in the right direction and aim to take significant leap forward in the years to come.

Congratulations to the Graduating Class of 2015

Dear graduating class of 2015 and PhD recipients of IIT Ropar, I once again congratulate each and every one of you on your splendid achievement. I also salute your proud parents for providing you with all the required support during your studies. Today you not only have the degree certificate in your hand, you also have the most important ingredient for success, "a dream". As Late A. P. J. Abdul Kalam said, "Dream is not that which you see while sleeping, it is something that does not let you sleep". Let this dream carry you forward and induce you to spend sleepless nights to bring glory to your family, your profession, this great Nation and this proud Institute of yours. As IITians, you are not to be just professionals but leaders in whatever endeavor you take. The Nation has invested on you; it is now your turn to give back to the Nation. To drive my point further, I would like to quote the words of noted German writer, Johann Goethe:

"Whatever you can do, or dream you can do, begin it. Boldness has genius, power, and magic in it. Begin it now."

Acknowledgments

I thank Smt. Smriti Zubin Irani, Hon'ble Minister for MHRD for all her support and guidance. I wish to express my sincere thanks to Honorable Mrs. Lila Poonawalla, Chairperson, BoG and members of BoG for their valuable support and guidance. Finally, I wish to thank members of Senate, Faculty, Staff and Students of IIT Ropar for all their unstinted support and dedication.

I am confident that with the support of all of you we will be able to build a world class institution called Indian Institute of Technology Ropar, dedicated to the service of the Nation.

Jai Hind



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