



## CONVOCATION SPECIAL

# Prajwalam

The Newsletter Vol. 8, Issue 1 | February 2019

INDIAN INSTITUTE OF TECHNOLOGY, ROPAR

*NEW YEAR...NEW ASPIRATIONS*



### Director's Message

Dear Friends,

IIT Ropar has taken major step towards shifting to the new campus by moving its three major engineering departments namely viz. Computer Science & Engineering, Electrical Engineering and Mechanical Engineering to the newly built campus. It is projected to host more than 1500 students and 125 faculty in the new campus from

the summer of 2019. We are also proceeding aggressively to complete our entire first phase of construction to host 2500 students by 2020. Along with infrastructure building, IIT Ropar has kept its focus on academic excellence on equal footing. IIT Ropar's focus on excellence of research and its relevance to society has again being demonstrated during the last few months when the IIT faculty brought out AI-based tools for identification of currency notes by visually impaired. We are happy to announce the setting up of Indo-Taiwan

Centre of Excellence on AI and Machine Learning at IIT Ropar. Our team for Industry Connect has shown tremendous progress by connecting with industrial bodies like CII which held its Punjab Council meeting in IIT Ropar campus.

IIT Ropar is a vibrant place for students. We have made significant progress in Inter IIT sports and bagged several awards during the Inter IIT Cultural Meet. The 70th Republic Day was celebrated in a grand fashion at the new campus of IIT Ropar where again our students showed their social commitments through the newly formed NGO Pehchaan- Ek Safar. With the new campus blooming and new academic and other activities bubbling, IIT Ropar has also emerged as a vibrant and fast-growing academic institute in the country. We have taken decision to introduce new teaching programs on Mathematics and Computing (B.Tech.) and AI (M.Tech.). We have also started S.S.Bhatnagar series of lectures by eminent Bhatnagar awardees. We are confident that with your support and active help the institute will march forward to establish itself as an institute of global repute within the coming months.

Jai Hind.

**Prof. Sarit K. Das**

### Convocation '18



IIT Ropar celebrated its 7<sup>th</sup> Annual Convocation at the permanent campus. Prof. John H. Lienhard V, PhD, PE, Professor of Water, Director, Abdul Latif Jameel World Water and Food Security Laboratory, Massachusetts Institute of Technology, USA, graced the occasion as the chief guest and delivered the convocation address. Prof. S. K. Das, Director IIT Ropar presided over the ceremony.

A total of 173 degrees were awarded this year. 103 B.Tech., 19 M.Tech., 27 M.Sc. and 24 PhD degrees were handed out to students.

First time, IIT Ropar introduced Best Thesis Award and in this category, 4 students, Dr. Aru Beri (Awarded PhD in 2016), Dr. Balwinder Kaur (Awarded Degree in 2016), Dr. Harpreet Singh (Awarded Degree in 2015)

and Dr. Satyajit Pramanik (Awarded Degree in 2016) were felicitated.

Devendra Pratap Yadav, Department of Computer Science & Engineering received President of India Gold Medal amongst the graduating students of B. Tech this year. The Director Gold



Medal was awarded to Deepak Attri, Department of Electrical Engineering.

Institute Silver medals were given to Deepak Attri, B.Tech. Department of Electrical Engineering, Raghvendra Kumar Dwivedi, M.Tech. Mechanical Engineering, Apoorv Kushwaha, M.Sc. in Chemistry Programme, Lalit Pandey, M.Sc. in Physics Programme and Manoj Kumar, M.Sc. in Mathematics Programme.

IIT Ropar has excelled over the past year in many areas like research, student and faculty achievements and international collaborations. The Institute has also seen a remarkable growth in terms of the faculty and student strength.



## Surges Alumni numbers - 1st Alumni Meet



Former students of IIT Ropar took a stroll down the memory lane held at the permanent campus of IIT Ropar on December 2, 2018. The institute welcomed all passed-out graduates with warmth and vigour. It was the first time that they got a feel of their own new permanent campus at the foothills of the Shivalik and near the bank of river Sutlej.

The meet was graced by around 30 alumni ranging across various batches from B.Tech. Prof. S.K. Das, Director, IIT Ropar welcomed the alumni and appreciated their zeal to assemble for the meet despite their busy schedule and called for greater participation of alumni for the development of the college as many hold positions of responsibility in various government organizations, PSUs, private sector and academic institutions. Many of them are successful entrepreneurs providing jobs to others as well. Later, the alumni were taken for a campus tour which highlighted the recent developments in the Institute infrastructure. It also focused on visits to academic departments. The night was truly owned by the splendid cultural performances put forth by the students as a mark of respect to their senior alumni friends.

## Memorandum of Scientific Collaboration



IIT Ropar signed Memorandum of Scientific Collaboration on the implementation of the Extreme Light Infrastructure - Nuclear Physics (ELI-NP) Project with “Horia Hulubei” National Institute of Physics and Nuclear Engineering, Romania.

## Know Our Faculty



Prof. Javed N Agrewala joined IIT Ropar in March 2018 at the Centre for Biomedical Engineering. Earlier, he worked for 29 years at the CSIR-Institute of Microbial Technology, Chandigarh. He has been a Visiting Faculty at the Hammersmith Hospital, London [1994-1996] and Trudeau Institute,

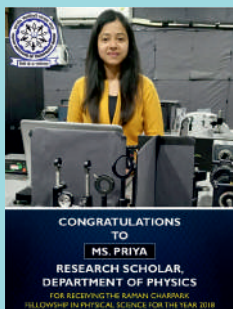
Saranac Lake, USA [2001-2002]. Dr Agrewala's group has made seminal contributions in the area of Immunology of Infectious Diseases and Vaccines. His group has published 95 papers in journals of high repute. Further, he has several national and international patents and technology to his credit. He is a recipient of 'Shanti Swarup Bhatnagar Award', and a Fellow of all the three science academies of India the 'Indian National Science Academy, Indian Academy of Sciences and National Academy of Sciences India'. Currently, Dr Agrewala's group is working on the development of the vaccine against narcotics. This study may play a pioneering role in neutralizing the impact of drugs through vaccination.

## Strengthening Ties – MoU with Concordia University, Canada



IIT Ropar signed an MoU with Concordia University, Montreal of Canada to support research collaboration, capacity building and other forms of academic partnerships. Under this MoU, both institutions will typically focus on opportunities in student exchange, faculty exchange and professional development programs.

The two institutions will also explore possibilities of collaborative Masters Programs and jointly supervised Ph.D. students. The MoU will cover the scope of interaction among members of faculty relating to joint research projects, research visits and when necessary, joint applications for research funding from external funding agencies.



## Awards and Recognitions



*Congratulations*  
**Dr. Ravibabu Mulaveesala**  
Associate Professor,  
Department of Electrical Engineering  
for bagging the 2<sup>nd</sup> prize in Grand Finale of  
Punjab Startup Yatra



*Congratulations*  
**DR. MUKESH KUMAR**  
ASSISTANT PROFESSOR  
FUNCTIONAL AND RENEWABLE ENERGY  
MATERIALS LABORATORY  
DEPARTMENT OF PHYSICS  
for receiving the Young Achiever Award  
from Department of Atomic Energy, Shri A. P. J. Abdul Kalam Centre,  
Govt. of India during the 6<sup>th</sup> All India Physics Symposium  
held at Hoshiarpur

## Research @IIT Ropar in News

### IIT makes low-cost device to check water pollution

Ropar Engineering Institute Says Gadget Will Use Sensors To Calculate Effluents In Real Time

Vinod Kumar 31 timesgroup.com

Chandigarh: Officials of the Punjab Pollution Control Board may soon be spared the need of collecting samples from water bodies to check the level of pollution there.

"This is because the Indian Institute of Technology (IIT) Ropar has developed a low-cost device which measures, reads and transmits the level of pollution in a water body in real time.

By using pollution sensors, the device measures toxic chemical levels (pH), dissolved hydrogen (pH) value, chemical oxygen demand (COD), biological oxygen demand (BOD) and

temperature of a water body and shares the data with the help of a GSM device and an

Android-based application. The device can be connected wirelessly to a smartphone or a tablet. The user can view the data on a smartphone or a tablet. The device can be connected wirelessly to a smartphone or a tablet. The user can view the data on a smartphone or a tablet.

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## High No. of antibodies can help prevent cancer: Study

Vinod Kumar 31 timesgroup.com

Chandigarh: High number of anti-pesticide antibodies can help in protecting people from pesticides-induced cancer. This has been found in a study conducted by Prof Javed N Agrewala and his group at the Institute of Technology (IIT) Ropar, and Institute of Microbial Technology (IMTECH), Chandigarh.

Punjab, being a leading agricultural state, prevalence of pesticides-induced cancer is much higher among the people of the region, as compared with other parts of the country. Prof Javed and his group monitored the presence of anti-pesticides antibodies in the blood of healthy farmers of Punjab and those suffering from cancer. For the study, blood samples of 75 cancer patients and 30 healthy people were acquired from the Advanced Cancer Centre, Guru Govind Singh Medical College, Faridkot. The study

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**The motive of the study was to ascertain whether antibodies play any role in preventing or provoking cancer. The results of the study show that antibodies can help in protecting cancer**

**JAVED AGREWALA**  
Professor, IIT Ropar

Whereas, highest number of antibodies was found in the blood of healthy farmers. The study concluded that the prevalence of high-level of antibodies in healthy individuals may be one of the causes for protecting them from cancer, as they neutralise the effect of xenobiotics present in the body. The low level of antibodies may be inefficient in clearing xenobiotics, giving chemicals opportunity to inflict people with cancer.

Prof Javed suggests that administration of anti-pesticides antibodies may be a useful approach to protect people from pesticides-induced cancer. "Some pesticides can combine with body proteins and become immunogenic and activate the cells of the immune system and elicit the production of anti-pesticides antibodies. Antibodies can remove them from the body and block the cancer provoking property of these substances," said Prof Javed.

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## 'Roshni' to help visually impaired identify notes

A FIRST Ropar IIT launches free Android-based application

TRIBUNE NEWS SERVICE

ROPAR, JANUARY 23

The Indian Institute of Technology, Ropar, has come to the aid of visually impaired, who have been facing difficulty in identifying the new currency notes introduced by the Reserve Bank of India, post demonetisation.

The application "Roshni" is free of cost. A team comprising Dr Puneet Goyal, PhD scholars Mandhatya Singh and Joohi Chauhan, and student R Ram from the institute demonstrated the app in the presence of students from Institute for Visually Impaired, Chandigarh.

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**VISIONARY:** There are about 80 lakh visually impaired people in the country, who will benefit from the initiative.

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Play Store has to bring the currency note in front of the phone camera and the app will provide audio notification identifying the currency note's denomination. If the image is not clear or not focused, or the desirable minimum prediction accuracy is not achieved, the user is provided aural notification to "try again".

The usability aspects were considered in designing this app and it worked in a broad range of light conditions and holding angles, they added.

Dr Puneet said, "Seeing AI App by Microsoft is only other application that facilitates recognition of both

old and new Indian currency notes, but it is an iOS App and not available for Android users. It fails to identify the currency notes which are faded or old."

A faculty member and students of the visually impaired institute said, "Prior to demonetisation, they used to differentiate the currencies based on the length and width of the note. Now, it is difficult for them to identify the denomination due to similarity in sizes of new and old notes of different denomination."

Ropar IIT Director SK Das said the team would continue working on it for further improvisation.

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## IIT Ropar team invents pen-size inverter

Vinod Kumar 31 timesgroup.com

Perth: Researchers at IIT Ropar have invented a pocket size inverter, which is just the size of a pen. The researchers claimed that the device would cost around Rs 5,000, which is way much cheaper than any other commercially available inverter.

The compact sized inverter is useful for UPS, electric vehicles, and renewable energy power conversion applications. Owing to the harmful effects of pollution and depletion of natural resources, generation of electrical power with renewable energy sources and demand for pollution free electric vehicle technologies is the need of the hour, they point out.

Having dimensions of 14x5 cm, the designed inverter is 4W, which is capable of driving up to 14W field machines. The researchers claimed that in comparison to others, this pocket-size inverter can supply

power four times more than the home UPS inverters. The researchers claim that inverters being used in homes can convert and supply power up to 1.1kW, whereas this new compact inverter, having current rating up to 10A, while travelling in vehicles, said A V

Trip, assistant professor at electrical engineering department, IIT Ropar. The research has been conducted by this institute PhD scholars Advait Kumar Rana and Mukundhan Sengupta.

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part design is capable of supplying power up to 4W.

Its design comes as two-layer printed circuit



## Inter IIT Sports Meet

IIT Ropar participated in the 53<sup>rd</sup> Inter IIT Sports Meet held at IIT Guwahati in December 2018. IIT Ropar competed in total 15 events. Ten events in men's category and five events in women's category. IIT Ropar Athletes reached finals of Shot Put, Discus, Long Jump, 4 x 100 meters relay race and also reached semi finals in many more events such as 200 meter race (two athletes), 100 meter (two athletes). In 5000 meters our athlete got 7<sup>th</sup> position in men's category. In women's category the athletes reached finals of Long Jump, 4 x 100 meter relay race and semifinals of 100 meter and 200 meter races.

## Achievements in 3<sup>rd</sup> Inter IIT Cultural Meet'18

IIT Ropar ranked 8<sup>th</sup> in 3<sup>rd</sup> inter IIT cultural meet among 21 IITs. Not only our students were ahead of all new IITs but also ranked higher than IIT Kanpur (ranked 9) and IIT Madras (ranked 16) in the cultural meet. This year students shown tremendous progress from the previous Meet as students of IIT Ropar brought laurels for their brilliant performances in various events.

### Proud Moment for IIT Ropar

3<sup>rd</sup> Inter IIT Cultural Meet 2018



#### Major Achievements:

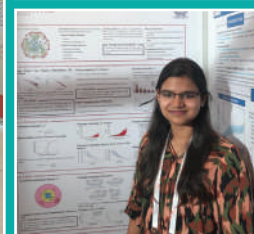
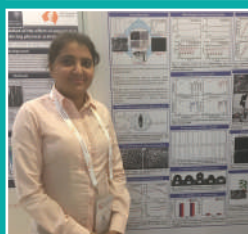
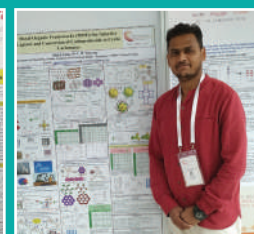
- 🔥 Undekha, the Dramatics club, bagged the 3<sup>rd</sup> prize in Stage Play as well as in Nukkad Natak (Street Play).
- 🔥 Ranked 2<sup>nd</sup> in the Monoact event
- 🔥 Ranked 4<sup>th</sup> in the Group Dance event by D-Cypher, the Dance club
- 🔥 Ranked 5<sup>th</sup> in the poetry competition amongst 46 participants
- 🔥 Ranked 5<sup>th</sup> in the Cooking event



## Global Young Scientist Summit 2019

Five Research scholars from IIT Ropar, Ms. Kamal, Ms. Beant, Ms. Anamika, Ms. Akrati and Mr. Bharat were selected to attend the annual Global Young Scientists Summit (GYSS) at the Nanyang Technological University (NTU) in Singapore

GYSS was a gathering of approximately 300 young scientists and researchers (PhD students and post-docs) from all over the globe, with eminent international science and technology leaders in Singapore. It was a multi-disciplinary summit, covering topics ranging from Chemistry, Physics, Medicine, Mathematics, Computer Science and Engineering. Speakers invited to the GYSS were globally recognized scientific leaders, including recipients of the Nobel Prize, Fields Medal, Millennium Technology Prize, Turing Award and IEEE Medal of Honor.



## Indo-Taiwan Research Center on Artificial Intelligence and Machine Learning coming up at IIT Ropar

IIT Ropar has embarked upon an aggressive trajectory to build the necessary expertise in AI and machine learning. As part of its international strategy, it has decided to setup a collaborative research ecosystem with National Chung Cheng University of Taiwan. In this connection, a high-level academic delegation from NCCU visited IIT Ropar to work on the modalities of an Indo-Taiwan Research Center on Artificial Intelligence and Machine Learning.



## IIT Ropar sets up Real Time Digital Simulation (RTDS) Facility

IIT Ropar Sets-up Real Time Digital Simulation (RTDS) Facility to Carry Out Smart & MicroGrid Training and Research. The SYNchrophasor Measurement And Research (SYMAR) Lab of Electrical Engineering Dept., IIT Ropar is now equipped with the state-of-the-art Real Time Digital Simulator (RTDS) facility, enabling the institute to carry out research in the cutting-edge areas of Smart and Micro Grids. The facility is funded by the DST-FIST grant, which was brought to the department by Dr. Ranjana Sodhi in 2017.



## IIT Ropar forms Council of Local Associates

In an effort to evolve and bring synergy to the development of IIT Ropar and also to the city Ropar, IIT Ropar has formed Council of Local Associates with renowned Philanthropists, Academicians, Industry representatives, Legal representatives and District Administration. The first meeting with the council held in the premises of IIT Ropar.



## IIT Ropar participated in CII AGRO TECH 2018

IIT Ropar participated in 13<sup>th</sup> Edition of India's Agro-Technology and business fair, CII Agro Tech 2018, during December 1-4, 2018. It was an international platform to showcase agricultural advancements which highlighted the growing importance of agriculture and food processing sector in India. Countries like Canada, China, Germany, Italy, Netherlands, Spain, UK and US participated. IIT Ropar is working on problems related to Indian agriculture. Some include management of stubble, prototyping agri-machinery, energy management.





## IIT Ropar selected as Nodal Institute under AGNI initiative of GoI

IIT Ropar under AGNI (Accelerating Growth of New India's Innovations) initiative of GOI, has been selected as Nodal Institute by Invest India – National Investment Promotion and Facilitation Agency under Department of Industrial Policy & Promotion (DIPP), A Government of India department. Under this esteemed program, IIT Ropar will carry out activities related to entrepreneurship & Innovation ecosystem. IIT Ropar will represent to Agro Climatic Zone VI of the country having three states – Punjab, Haryana, partial Rajasthan & one UT as of Chandigarh.



## IIT Ropar organized IEEE ICIIIS

The 13<sup>th</sup> IEEE ICIIIS (Institute of Electrical and Electronics Engineers - International conference on Industrial and Information Systems) is being organized by the Department of Electrical Engineering, IIT Ropar in its permanent campus during December 1-2, 2018. The conference received huge number of papers touching around 310, while, after rigorous review process only 90 papers were finally accepted. The presenters participated from IITs and NITs all over India apart from renowned universities of Sri Lanka.



## Permanent Campus

The New year came with a great sense of pleasure and satisfaction, as the Department of Mechanical Engineering has shifted to Satish Dhawan Block this January which is on its sprawling state-of-the-art residential permanent campus. Presently, the campus has housing for Faculty Members and Staff. Construction of houses for Staff Members is underway. Also, development of buildings for Kendriya Vidyalaya IIT Ropar (up to Class XII), is almost done.

## Giving back to Society

IIT Ropar (currently around 40) is active with a social service group under the name PEHCHAAN EK SAFAR (Search for an identity). The group has been working for the education of underprivileged children around IIT Ropar main campus. The children from this section of society are deprived of education. A year ago the students identified families and approached them for educating their children and admitting them in the nearby school. After getting their positive response they held meetings with the parents and tried to understand various problems they face in educating their children. Hence, they took a collective decision to help them, to their full capacity. With this objective, the NGO is formed



and now have gathered immense support from engineering students, research scholars as well as faculty members to help in this initiative. The group has been actively preparing the students for school admission, as a result around 30 children around IIT main campus have been enrolled this year to the Government Primary School, Haveli Kalan at Ropar. The

children have been facing a problem of transportation as the nearby school is 5 km away from their residence. This is a burden for a child to walk everyday. So, a donation of around Rs. 12000/- per month for their transportation is collected. The funds have been gathered regularly from inside IIT by donations from students and some faculty members.

## गीत गायन प्रतियोगिता

भारतीय प्रौद्योगिकी संस्थान रोपड़ में हिंदी प्रकोष्ठ द्वारा दिनांक 25 जनवरी 2019 को गणतंत्र दिवस के उपलक्ष्य में देशभक्ति गीत गायन प्रतियोगिता का आयोजन किया गया। इस कार्यक्रम में संस्थान के कर्मचारियों, संकाय सदस्यों तथा विद्यार्थियों ने बड़-चढ़ कर हिस्सा लिया। इस कार्यक्रम में प्रतिभागियों ने देशभक्तिपूर्ण गीतों के गायन के साथ पूरा वातावरण देशभक्ति के रंग में रंग दिया। इस प्रतियोगिता हेतु डॉ. यशवीर सिंह, सहायक प्राध्यापक, रसायन विभाग परीक्षक के रूप में उपस्थित थे। प्रतियोगिता में कर्मचारियों में सुश्री श्वेता रानी, श्री अंशु वेद, श्री अर्पित गुप्ता, श्री टी.एस. हांडा तथा सुश्री हरप्रीत कौर ने पुरस्कार प्राप्त किये। विद्यार्थियों में श्री मनिष सिंह, श्री प्रणव जोहरी, श्री शशांक, श्री कन्हैया, तथा श्री अजय सिंह ने पुरस्कार प्राप्त किये। डॉ. यशवीर सिंह, परीक्षक महोदय ने अंत में प्रतियोगिता एवं आयोजन को लेकर अपने विचार प्रस्तुत किये। श्री गिरीश कठाणे, कनि. हिंदी अनुवादक ने सभी प्रतिभागियों, श्रोताओं तथा परीक्षक महोदय का धन्यवाद ज्ञापित किया।



## Spic Macay (Kuttiyattam Dance)

IIT Ropar organized a dance performance performed by 7 artists from India headed by Shri Margi Madhu. Kuttiyattam is the oldest surviving form of Sanskrit theatre in Kerala. This theatre form has been declared by UNESCO as “Masterpiece of oral and intangible heritage of humanity.”

## Marching Forward as a Team - New Joining



**Dr. Anupam Bandhyopadhyay**  
Assistant Professor  
Department of Chemistry



**Dr. Bidhan Chandra Sardar**  
Assistant Professor  
Department of Mathematics



**Dr. Deepika Choudhury**  
Assistant Professor  
Department of Physics



**Dr. Khushboo Rakha**  
Assistant Professor  
Department of Mathematics



**Dr. Mitesh Surana**  
Assistant Professor  
Department of Civil Engineering



**Dr. Neelkanth**  
Assistant Professor  
Department of Chemical Engineering



**Dr. Raheena M**  
Assistant Professor  
Department of Civil Engineering



**Dr. Sayantan Ganguly**  
Assistant Professor  
Department of Civil Engineering

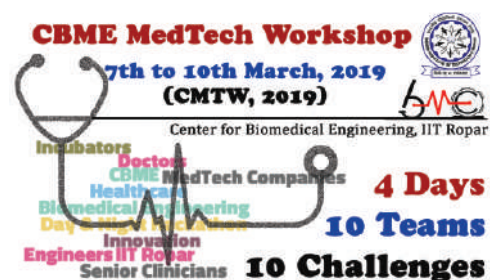


**Dr. Bhupinder Singh Bhullar**  
Executive Officer  
ICSR & II

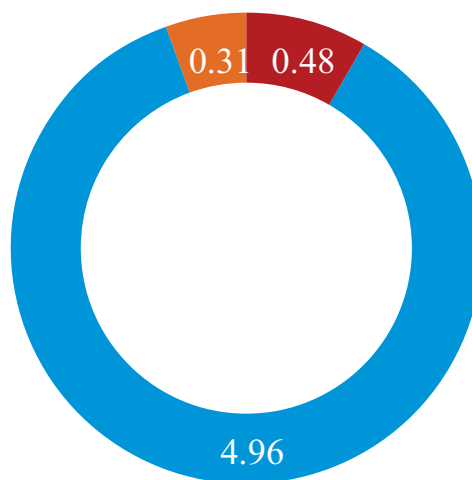


**Sh. N Sivaramakrishnan**  
Technical Officer  
Central Research Facility

## Upcoming Events



## External Funded Projects



DST  
**4.96**

Industrial Consultancy  
**0.31**

Indo-Russian Joint Project  
**0.48**

**Total amount Sanctioned Rs. 5.75 Crores.**