ANNUAL REPORT 2020-21

भारतीय प्रौद्योगिकी संस्थान रोपड़

INDIAN INSTITUTE OF TECHNOLOGY ROPAR

ANNUAL REPORT

2020-21 (APRIL '20- MARCH '21)

IIT ROPAR : AT A GLANCE

DEPARTMENTS & CENTERS

DEPARTMENTS	:	11
CENTERS	:	3

STUDENTS ADMITTED IN AY 2020-21

UG PROGRAMME	:	351
PG PROGRAMME	:	181
PHD	:	184

STUDENTS STRENGTH

UG PROGRAMME	:	1246
PG PROGRAMME	:	304
PHD	:	677

NUMBER OF DEGREE AWARDEES

B. TECH.	:	135
M. TECH.	:	71
M. SC.	:	69
MS-R	:	4
PHD	:	32

FACULTY & STAFF STATISTICS

FACULTY	:	175
NEW JOINING	:	3
STAFF	:	114
NEW JOINING	:	1

RESEARCH PRODUCTIVITY

JOURNALS	:	336
CONFERENCES	:	78
BOOK CHAPTERS	:	21
BOOKS	:	2

ICSR & II

NUMBER OF CONSULTANCY PROJECTS	:	79
OUTLAY	:	7.29CR.
NUMBER OF SPONSORED PROJECTS	:	51
OUTLAY	:	130.18CR.

GRANTS (IN CRORES)

DST-TECHNOLOGY INNOVATION HUB	:	110
SERB - SWARNAJYANTI	:	3.09
NHAI	:	1.32
DRDO	:	0.58
OTHERS	:	15.19
TOTAL	**:**	**130.18**

CONTENTS

FROM THE DIRECTOR'S DESK

Just a year ago when the World Health Organisation (WHO) declared COVID-19 a Pandemic and India imposed a strict lockdown in March, a deep despondency and risk psychosis became pervasive. Since then, lives have been lost, surviving life has been disrupted and lifestyles have been fundamentally altered. In India, some areas of activity, especially contact intensive ones like education, have been deeply scarred whether it was School or Higher Education Institutions like IITs. Besides the toll on life and living, the year 2020 ravaged us and forced every sector to think differently to work.

At IIT Ropar, the academic session 20-21 has been an extraordinary one in every sense of the term. Despite the dark shadow of an impending global health crisis looming large over us, the academic session ending in June 2020 has been a truly rewarding one. With this year's admission, IIT Ropar student population has grown to 2389 students, including 1270 UG, 477 PG, 7 MS(R) and 633 PhD students. During the last six years from 2015-16 to 2020-21, the student's intake has increased from 124 to 370 of B.Tech. programme, 43 to 257 for M.Sc. and M.Tech. programmes and 53 to 110 for PhD programmes. Hence the strength of the students is raised from 546 in 2015-16 to 2389 in 2020-21, thereby increasing by more than 4 times.

There is an increase in the number of girl students admitted to IIT Ropar from 87 in 2015-16 to 524 in 2020-21 which is nearly a six times increase in girl student intake. The Institute is offering Internship Programme to the students of other institutes through the Continuing Education and Outreach activities. During the Internship programme, fellowship of amount Rs. 5000 per month max. for 2 months was also provided to the students. 60 students got this benefit. The institute is also a minor centre for QIP (Quality Improvement Programme). The main objective of the programme is to upgrade the expertise and capabilities of teachers of the AICTE approved degree-level engineering institutions.

MHRD-NIRF India Rankings 2020

A major achievement for the Institute came through the announcement of the MHRD's National Institutional Ranking Framework (NIRF), in which IIT Ropar ranked twenty fifth among top engineering institutions and thirty ninth among all the participating universities and institutions in the country. The credit for this success goes entirely to the faculty members, students, research scholars as well as the officers and staff members and well-wishers of the Institute. The Institute shall tirelessly strive to achieve a higher rank in the coming days.

It has also been ranked high by international agencies such as the 'QS' AND 'TIMES HIGHER EDUCATION' RANKING

- TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS 2021 – IIT Ropar

ranked in the bracket of 351-400 and 2nd in India with 100 percent citation score.

- TIMES HIGHER EDUCATION "YOUNG" World University Rankings 2020- IIT Ropar ranked 62nd in the World, reaching under Top 70 best Young Institutes in the world.
- TIMES HIGHER EDUCATION "ASIA" UNIVERSITY RANKINGS 2020- IIT Ropar ranked 47th and entering the top 50 list for the first time.
- QS INDIA UNIVERSITY RANKINGS – IIT Ropar ranked #25th in India scoring highest in Citation per paper.
- QS ASIA UNIVERSITY RANKINGS 2020 – IIT Ropar ranked #205 in Asia

Research & Development Activities

There has been considerable progress in Research and Development front during the last one year. Our research quality and impact can be ascertained from the average citation per paper, which stands at 15.88.This is highest among all the second generation IITs as per recent Scopus data. During the current year, the faculty members and scholars of the institute published 369 papers in high impact international journals with an H-Index of 68.

Over the past years, the Institute has proactively embarked on collaboration-oriented R&D projects involving joint participation of industries, R&D labs and government organizations. The research profile of the institute is continually improving every year. As a result, the institute is well-recognized as one of the centers of academic excellence. IIT Ropar has a thematic vision to align its R&D to create a positive impact nationally and internationally. It has attracted the best students and faculty to conduct break through research in the areas of science and engineering. During 2019-20, we have published 438 manuscripts and produced 32 research scholars. Our 358 research scholars have attended various conferences in India and abroad during this period.

With 177 Faculty and 633 research scholars, we provide them opportunity to:

- Explore new territories and break their own limitations.
- Continue research in the area of their expertise and drive it on a road map by doing smarter version.
- Dig into new knowledge and train themselves to master new skills to become professionals.
- Engineering research for human welfare.

The number of PhD students on campus is increasing every year. This year too has seen a considerable rise in numbers, growing from 515 students last year to 633. The current faculty to PhD student's ratio is 1:3.57.

During the ongoing COVID-19 crisis, the Institute has contributed towards various technologies to combat Covid-19, starting from making DIY mask to UVGI technology based UVSAFE, which has been recently used in IPL at Dubai to sanitize the rooms of the players. IIT Ropar has thus adhered to their vision of "Contribution to knowledge, Contribution to Society, Contribution to the NATION", thereby making a vital contribution to India's Technology revolution even during the days of crisis and giving back to the society that nurtured us.

Dr. Rajesh V. Nair, Associate Professor, Department of Physics in Indian Institute of Technology (IIT) Ropar, has bagged the Swarna Jayanti Fellowship in Physical Sciences for the year 2019-20.He is among the 21 prominent researchers across India, who are selected for the fellowship for this year. Dr. Nair is the first IIT Ropar faculty to achieve the fellowship in Physical Sciences since the second generation IIT was established in 2008.

Dr. Partha Sharathi Dutta, Associate Professor, Department of Mathematics was facilitated with Faculty Research and Innovation Award (Mid-Career Researcher) and Dr. Subrahmanyam Murala, Associate

Professor, Department of Electrical Engineering with Faculty Research and Innovation Award (Young Career Researcher) 2019-20.

Students of IIT Ropar have been selected for the Prime Minister Research Fellowship (PMRF). Ms. Priyanka and Ms. Samita Deb, pursuing PhD from the Department of Mathematics; and Ms. Ritika and Mr. Vatan Chawla, pursuing PhD from the Department of Chemistry have been so honoured.

Adding to our social responsibility, this year, the President of India through the National Mission on Interdisciplinary Cyber-Physical Systems (NM - ICPS), Department of Science & Technology, has awarded a Technology Innovation Hub to IIT Ropar in the domain of Agriculture and Water with an initial grant of 110 crores. IIT Ropar is the only institute in the country to get a Hub for the development of Agritech. In order to support the activities of the Agriculture and Water Technology Development Hub (AWaDH), we founded a Technology & Innovation Foundation at IIT Ropar. The Hub is primarily working on (i) Water and Soil Quality Assessment Processes, (ii) Water Treatment and Management, (iii) Agriculture Automation and Information Systems, (iv) Stubble Management and Urban Farming, (v) IoT Systems, and (vi) Nuclear Instrumentation for Agriculture & Water, towards eco-friendly farming practices and to make farming more profitable for the grower.

The mission of the Hub is to develop 30 Agritech, open 35 startups/spin-off companies, train more than 1000 professionals in Cyber-Physical Systems, give more than 8000 employments through different Agritech innovations, etc. The technology developed at Hub would advance the (i) Environment, Forest and Climate, (ii) Fisheries (iii) Food Processing and Public Distribution, (iv) Rural and Women Empowerment by Skill Development and Entrepreneurship, (v) Land Resources, (vi) Electronics and Information Technology, (vii) Fertilizers, to name a few. The Hub is led by Dr.Puhspendra P. Singh along with Dr. L. Vijay Anand, Dr. Neeraj Goel, Dr. Suman Kumar, Dr. Neelkanth Nirmalkar, Dr. Mukesh K. Saini, and Dr. Prabir Sarkar.

Industrial Consultancy, Sponsored Research & Industry Interaction section has been re-organised to enable the faculty and students to execute their research and consultancy projects in a more effective and timely manner. The section has started working independently to provide administrative, purchase, accounts, recruitments, and audit support to the PIs. Recently the section has revised ICSR policy by taking inputs from various stakeholders, which has been approved by BoG. The policy has been revised to improve upon governance practices being extended to the PIs and research staff. In its continuous endeavor to reach the peak of academic excellence, IIT Ropar has taken several initiatives such as:

- Nurturing strong links with industry for joint research, technology transfer, and specialized human resource development.
- Encouraging commercialization and application of technologies and inventions.
- Facilitating access to research, expertise and technology databases and selective dissemination of information.

The faculty members of IIT Ropar are actively engaged in various research projects funded by external funding agencies. Since the inception of the institute, the faculty has been attracting research projects from the different funding agencies such as Department of Science and Technology (DST), Defence Research and Development Organisation (DRDO), Board of Research in Nuclear Sciences (BRNS), Council of Scientific & Industrial Research (CSIR), Department of Biotechnology (DBT), Biotechnology Industry Research Assistance Council (BIRAC), All India Council for Technical Education (AICTE),

National Disaster Management Authority (NDMA), National Highways Authority of India (NHAI), Punjab State Council for Science & Technology (PSCST), EPSRC, GCRF, UKIERI, Technology Innovation Hub, INDO-US Science & Technology Forum (IUSSTF). We received 51 projects in 2020-21 with a sanctioned amount of Rs. 130.18 crores. There is a growing trend each year in terms of availing external funding. IIT Ropar is deeply involved in the national level initiatives such as IMPRINT, UAY, SPARC, VAJRA and STARS. 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.

Several faculty members have taken up industrial consultancy projects from highly reputed organizations. To name a few, there are projects from Max Speciality Films Limited (MSFL), National Project Implementation Unit (NPIU), Cedrus Lifestyle Ltd, Mohan Fibre Products Ltd. , SGF Infra Private Limited, Handtool Industries, Jalandhar, Drish Shoes Ltd, MINT Life Sciences Private Limited, YAMAHA Pvt. LTD, Trimble Navigation Pvt. Ltd., BIO Era Health Care, Deputy Excise and Taxation Commissioner Punjab, Airef Engineers (P) Ltd., Tech Indus One Services LLP, Adani Electricity Mumbai Limited, Dhruv Consultancy Services Ltd, Bharat Electronics Limited, Verisk Analytics India Private Limited and Punjab State Warehouse Corporation, Punjab etc. In 2020-21, IIT Ropar got 79 projects with an outlay of Rs. 7.29 Cr.

This year was quite challenging for us due to Covid-19. However, with the continuous efforts and initiatives of the International Relations Office, we have resulted in a significant number of joiningof international students. In addition, IIT Ropar has also enrolled under the Study in India programme of the MHRD, ASEAN PhD fellowship scheme and ICCR fellowship. This year, we received applications of international students from Bangladesh, Jordan, Ethiopia, Philippines, Myanmar, Nepal, South Korea, Iran, Morocco, Yemen etc. In all, 7 students have been enrolled for year 2020 in the Masters programme of IIT Ropar. We expect the number of applications to go up in the coming years.

Moreover, IIT Ropar UG/PG/PhD students have extensively enrolled in exchange visits with our partner universities by way of internships. Students have opted for short-term and medium-term internships with foreign universities. IIT Ropar has entered into MoUs with renowned universities of the world like University of Calgary, University of Bristol, University of Canberra, Academia Sinica, Network n+1 Engineering Institutes, France. The main objective of these MoUs is to promote academic cooperation in the following areas- Faculty exchange, Student exchange,Joint research projects, Exchange of scientific and teaching materials and Joint Conferences/Workshops/lectures. Our internationalization efforts have yielded rich dividends. We are making strenuous efforts/initiatives to internationalize the campus and promote bilateral collaborations.

It is quite exciting achievement for our institute that 2 students from IIT Ropar have been selected under Joint Ph.D programme with Swinburne University of Technology Australia. These students will undertake alternate or sequential periods of research (upto 12 months) at Swinburne University of Technology. We have also entered in joint Ph.D programme with National Chung Cheng University, Taiwan. In addition to this, our 5 students have been selected under the prestigious Newton Bhabha fellowship.

Apart from this, IIT Ropar has conducted a joint lecture with The State University of New York,Binghamton on the occasion of the 150th birth anniversary of Mahatma Gandhi. The purpose of this exercise was to allow Gandhian thoughts and philosophy to be widely disseminated in contemporary times.

I would also like to share that Dr. Rohit Sharma, Associate Dean, International

Relations has been awarded the DAAD fellowship on Management of Internalization 2020-21. This is a joint fellowship by the German Academic Exchange Service and Leibniz University, Hannover. Under this fellowship, he will be working on a proposal titled Augmenting international academic activities in the wake of COVID19 for a total duration of 1.5 yrs.

I am happy to share that two projects led by Dr.Parwinder Singh, Assistant Professor, Department of Humanities and Social Sciences and Dr.Reet Kamal Tiwari, Assistant Professor, Department of Civil Engineering, IIT Ropar have been approved under the MISTI Global Seed Funds umbrella of MIT USA. In addition, IIT Ropar is working on 17 bilateral projects and the total amount sanctioned for these projects is 9.04 Crores including the first of its kind bilateral centre on Artificial Intelligence and Machine Learning in collaboration with National Chung Cheng University, Taiwan.

Career Development and Corporate Relations Centre (CDCRC) caters to three very important facets; Placement and Internships, Corporate Relations and Professional Development. The efforts of the CDCRC team resulted in achieving 86% overall placements. Here, I am glad to share that the Computer Science department achieved 100% placement this year, followed by phenomenal performance by other departments too with an average package of Rs. 15 Lakh per annum. The Professional Development Team has connected with industry professionals globally through events like Techno HR meet and leadership seminars though Society of Women Engineers. Importantly, the Corporate Relations Cell has successfully connected various faculty members to different industries through various industry forms, corporate events and also have successfully initiated projects with different industries, Indian Army and DGCA.

To strengthen entrepreneurship & start-up ecosystem at IIT Ropar and in the region, institute has been running a Technology Business Incubator at its campus, which is an independent Section 8 Company, registered as IIT Ropar Technology Business Incubator Foundation (TBIF). It was formed in 2016 to host Technology Business Incubator (TBI) under NIDHI TBI Scheme of Department of Science & Technology (DST), Government of India. DST has recently sanctioned a Grant –In – Aid of Rs 5 Crore for this TBI. In the present situation when entrepreneurship and start- up eco system has taken a good start in this region, TBI has taken a step ahead to shake hand with other notable organisations & Institutions of the region such as TIE, PGI – ICMR, Punjab Biotechnology Incubator, Punjab Start-up Cell & many more. To further speed up the TBI activities, one independent Faculty-In-Charge Dr. Ashish Sahani from department of CBME has been entrusted with incubator. IIT Ropar TBIF has become a Nodal Agency of Punjab start-up Cell under the Department of Industries & Commerce to evaluate the ideas of people from the Punjab region, so that they can be recognised as a start-up. This TBI has 08 start-up companies at present & few of them has brought laurels in a very short span of time such as:

- Young Entrepreneur of the Region: Mr Amit Bhati, Director & Founder of ScratchnestPvt. Ltd has been awarded Young Entrepreneur of the region award by STPI Mohali during TiECON 2020, held at ISB Mohali in February 2020.
- First Women Entrepreneur of IIT Ropar - Ms Shivanshi Verma, UG student of Mechanical Engineering branch became the first women entrepreneur of IIT Ropar. She is founder of Start-up Company - YoboshuPvt. Ltd.
- Young Achievers Award - Two start-up companies - YoboshuPvt. Ltd. &ScratchnestPvt. Ltd. of IIT Ropar TBIF has been given young achievers award by Rotary International's Rupnagar chapter on the International Youth Day in January, 2020.
- Seed Grant of Rs. 3 Lakh by Startup

Punjab - Our startupAugniscient Pvt Ltd has been recognized by Punjab Startup Cell for the seed grant of Rs 3 lakh during TiECON 2020, held at ISB Mohali in February 2020.

Many initiatives were taken by our institute to facilitate and foster strong positive alumni relationships. Institute hosted many of the alumni members for the visit to the Main campus and this has been a dream coming true and a very thrilling experience for many, even those from the USA. Alumni visits also included many in-person interactions with our students and let them ignite their young minds, enrich their experience and well connect with the history and making of IIT Ropar with memorable hostel stories of their seniors. The e-Database of our alumni and many location-specific dedicated Whatsapp groups have been created for regular sharing of the information and active alumni interactions. The IIT Alumni Centre-Bengaluru (IITACB) invited me for the IIT-Industry Conclave 2020, held in Feb. 2020, as panel member. I was also invited by IITACB for the webinar in May 2020, well attended by alumni worldwide, on 'How are the IITs Contributing in Tackling Covid-19?'. This year, the Alumni Office is also linked with CDCRC and a new student body, named Alumni-Student Relationship Cell (ASRC), is formed to strengthen alumni relations and help our students better for training, placements and internship opportunities.

ADVITIYA 2020 – the annual techno festival of the Institute has been an extraordinary platform to showcase the latest inventions, exhibitions and technological advances from all over the globe and organises a plethora of events and competitions all designed to make the participants step outside their comfort zones and challenge the institution of conventional thinking. The 2020 edition of this festival saw the congregation of eminent personalities like Dr. R. Chidambram, Ex. Chairman, AEC, Dr. K. Radhakrishnan, Ex. Chairman, ISRO, Mr. Rakesh Malhotra, Founder SAR Group, Lumninous, Dr, Navakanta Bhat, Chairperson, Center for Nanoscience and Engineering, IISc, Bangalore, Dr. Shankar Venugopal, Vice President, Mahindra and Mahindra Group.

During the lockdown imposed due to COVID-19 virus, to promote fitness and health among the student community an online campaign by the name of Wellness Indoor Now India- #WINIndia was launched. In this campaign, various challenges were organised for students to complete and send their videos to the institutes' social media handles. An enthusiastic participation amongst the students was observed and it proved to be a great initiative.

The year 2020 has been a year in which the infrastructure development of the Institute had to suffer somewhat due to COVID-19 pandemic. In spite of the pandemic, the work of constructing the infrastructure in IIT Ropar has continued and presently we are in a position to cater to almost all of our institute's infrastructural requirements. Beginning from where we left off in the previous year all construction activities of Phase-1A have been completed and recorded. The completed infrastructures of Phase-1A that are operational are the S. Ramanujan Block (Computer Science), the J.C.Block (Electrical Engineering), the Satish Dhawan Block (Mechanical Engineering), the S. Bhatnagar Block (Chemistry), the M. Visvesvaraya Block (Administrative Building), Boys Hostels (Sutlej 460 capacity and Beas one wing of 230 capacity), Girls Hostel (Raavi Central 100 capacity), the Annapurna (Dining Hall), the Student's Activity Centre (Utility Block), Director's residence, Students Sports Complex (comprising of earthen cricket, hockey and football fields and synthetic volleyball, basketball and tennis courts), the S. Radhakrishnan Block (Lecture Hall Complex), 11/ 0.433 kV Electrical Sub-Stations (ESS1,2 and3), 66 / 11 kV Grid Sub-Station (Switchyard), the Water Treatment Plant (WTP), the Sewage Treatment Plant 500 KLD (STP), Staff residential flats (56 flats), Faculty residential flats (56 flats), the

Gate Complex.

In the second phase, that is Phase 1B, the facilities that had been completed in 2019 and made operational were the Boys Hostel (Chenab 720 capacity) and Girls Hostels (Raavi East 100 capacity and Raavi West 160 capacity) and an Electrical Sub-Station (ESS 4). In 2020 the other buildings of Phase 1B that have been completed and being occupied are the Faculty residences (72 flats), the Campus School and the Workshop Complex.

The final phase that is Phase 1C has also undergone speedy recovery after the onset of the pandemic and after the design related issues of the huge and iconic Super Academic Block (SAB) having been finalized. The structural construction of the Super Academic Block is going on at good speed.

The overall progress of the construction work of IIT Ropar permanent campus, considering all the three phases, up to end November 2020 is 79 %.

To sum up, the year gone by has left a scar on the education system; a collective global effort to fight the pandemic will surely bring better results than individual countries fighting on their own. The G20 goal of strong, sustainable and inclusive growth is still within reach.

Jai Hind!

Professor Rajeev Ahuja
Director, IIT Ropar

THE INSTITUTE

Motto:

धियो यो नः प्रचोदयात्

(deploy our intellect on the right path)

Mission:

To foster a transformative learning environment and a culture of excellence enabling creation of knowledge and development of socially responsible, enterprising leaders contributing significantly to national progress and humanity

Vision:

To be a trendsetter among the technology universities born in this millennium

EXECUTIVE SUMMARY

The coronavirus (COVID-19) pandemic dominated the past year, around the world. The pandemic is the greatest shared global challenge that every country has faced, with pain, uncertainty and vulnerability. The global health, social, economic and human rights crises triggered by the pandemic have underscored the importance of multilateral cooperation and the Science & Technology interventions to combat such pandemics during these testing times.

IIT Ropar has actively responded to the crisis, by safeguarding students, faculty and staff by adhering to the lockdown protocols and arranging online classes for the students and by making 'Work from Home' strategy for smooth functioning of the office work during these times.

Despite the dark shadow of a global health crisis impending large over us, year 2020 has been a truly rewarding one, in every sense of the term.

IIT Ropar has entered its 11th year of existence and it's worth mentioning that this year, IIT Ropar's permanent campus has been e-inaugurated by Hon'ble Union Minister of Education, Dr. Ramesh Pokhriyal 'Nishank' on 22nd October 2020 in the presence of Sh. Sanjay Dhotre, Hon'ble Minister of State, Ministry of Education, GoI.Sh. Pokhriyal ji highlighted that the Indian Institute of Technology (IIT) Ropar has featured consistently among the top-ranking educational institutions in the country and abroad.

A major achievement for the Institute came through the announcement of the MHRD's National Institutional Ranking Framework (NIRF), in which IIT Ropar ranked twenty fifth among top engineering institutions and thirty ninth among all the participating universities and institutions in the country.

It has also been ranked high by international agencies such as the 'QS' AND 'TIMES HIGHER EDUCATION' RANKING

- **TIMES HIGHER EDUCATION WORLD UNIVERSITY RANKINGS 2021** – IIT Ropar ranked in the bracket of 351-400 and 2nd in India with 100 percent citation score.
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During the ongoing COVID-19 crisis, the Institute has contributed towards various technologies to combat Covid-19, starting from making DIY mask to UVGI technology based UVSAFE, which has been recently used in IPL at Dubai to sanitize the rooms of the players.

TOP 5 RESEARCHES AND INNOVATIONS DEVELOPED AND CONCEPTUALISED BY IIT ROPAR DURING COVID PANDEMIC.

1. **Negative Pressure Room (NPR)** IIT Ropar has developed a design of a negative pressure room (NPR) to prevent the transmission of COVID-19 through air at isolation wards and testing labs, thus protecting the medical staff from getting infected.
2. IIT Ropar has developed **Negative Pressure Ambulance** to carry people infected with COVID-19 without posing the threat to the health workers serving them in the ambulance.

3. A unique **UVGI based Room Disinfection Device** has been developed by IIT Ropar researchers, UVSAFE. The unique patented design ensures zero-shadow 360o disinfection and is being in use at IPL, Dubai.

4. IIT Ropar collaborated with PGIMER, to develop two state-of-the art low cost autonomous vehicles, **"Medi-Sarathi' and "AI-Powered Trolley"** for COVID patients with an intent to minimize healthcare workers' contact with infected patients and contaminated surroundings.

5. **DOFFING UNIT (STATION) FOR HEALTHCARE WORKERS:** Doffing Unit: Design of a doffing station using chemical disinfectants, UVGI technology and negative pressure room technology.

During the year, one more feather was added in IIT Ropar's cap, as IIT Ropar Professor selected for Government's Swarnajayanti Fellowship, Dr. Rajesh V. Nair, Associate Professor, Department of Physics in Indian Institute of Technology (IIT) Ropar, has bagged the Swarna Jayanti Fellowship in Physical Sciences for the year 2019-20. He was among the 21 prominent researchers across India, selected for the fellowship for this year. Dr. Nair was the first IIT Ropar faculty to achieve the fellowship in Physical Sciences since the second generation IIT was established in 2008.

DST APPROVED 110 CRORES TO IIT ROPAR FOR SETTING UP A NATIONAL HUB TO DEVELOP TECHNOLOGIES FOR AGRICULTURE AND WATER

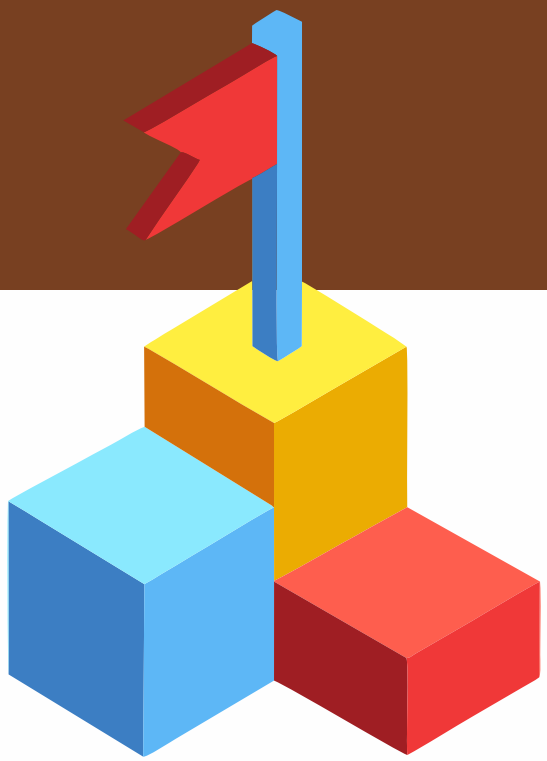
IIT Ropar has got INR 110 crores to set up "Technology Innovation Hub (TIH) in the domain of Agriculture & Water" in the Institute. Pioneering and unique, this setup is part of the framework of National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS). Under this scheme, scientists at IIT Ropar will develop state-of-the-art solutions to make agriculture more sustainable and profitable for farmers. Some of technologies that will be developed at the hub are: Water and Soil Quality Assessment, Water Treatment and Management, Agriculture Automation and Information Systems, Stubble Management Systems and Urban Farming, mapping of hazardous substances in water/soil and their treatment, deployment of IoT technologies in farming fields and in agricultural commodities management.

This hub will support startups, graduate and undergraduate research students, new companies in the domain of agriculture and water.

The scientific knowledge and technology advancements achieved at AWaDH will be deployed in (i) Food Processing Industries, (ii) Rural Development, (iii) Fisheries, (iv) Skill Development and Entrepreneurship, (v) Textiles industry for discharge management, (vi) Electronics and IT Industry for the development of IoT devices, (vii) Fertilizer industry for the optimized combinations of nutrients, (viii) Food and Public Distribution, (ix) Atomic Energy, (x) NITI Aayog for implementing different government schemes, (xi) implementation of farming practices in terms of preparation of farmland, pre/post-harvesting, delivery of the agricultural commodities to the consumers, preservation, and storage without affecting the environment.

We also mobilized our Alumni community to fill the funding gap for adaptation and resilience measures, highlighting the need to put these on an equal footing with efforts to curb the pandemic. As we look forward to the crucial events on climate and biodiversity in 2021, IIT Ropar look forward for an effort to create irreversible momentum for a healthy and safe Nation by R&D efforts through Science and Technology.

RANKING

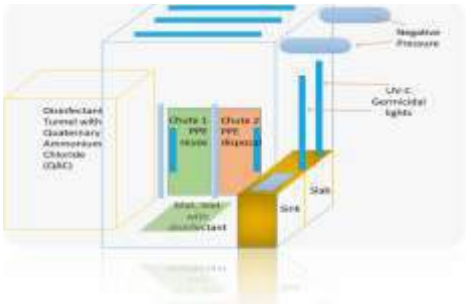


RANKING

- IIT Ropar once again made a mark in the **Emerging Economies University Rankings 2020,** being ranked **63rd sharing the rank** with IIT Madras and entering the top 100 list for the first time.
- IIT Ropar made a debut this year in the **Asia University Rankings 2020,** being ranked **47th and entering the top 50 list** for the first time. In spite of being a Young Institution, IIT Ropar has punched well above its weight from the more popular predecessors.
- IIT Ropar emerges as the top Indian Institute in **Times Young University Rankings 2020.** IIT Ropar charges ahead and catapults to the top 70 in the Times Higher Education Young University Rankings 2020 announced at UK. The Institute has been **ranked 62nd** in the World reaching under top70 best young institutes in the World.
- IIT Ropar has been ranked 39 in the overall category and climbed to **rank 25** in the engineering category in the latest India Rankings 2020 by the **National Institutional Ranking Framework (NIRF).**

RESEARCH INITIATIVES

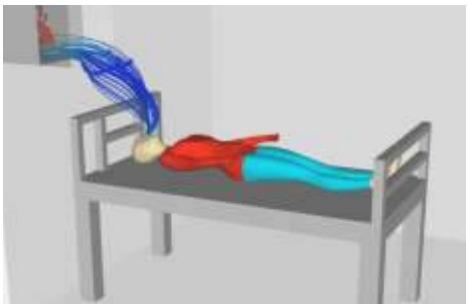
RESEARCH INITIATIVES BY IIT ROPAR TO COMBAT COVID-19



Doffing Unit: IIT Ropar conceptualised Doffing Unit (Station) for health care workers using chemical disinfectants, UVGI technology and Negative Pressure Room technology.

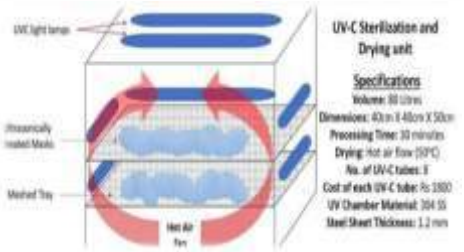
UV-C Sterilization Trunk:

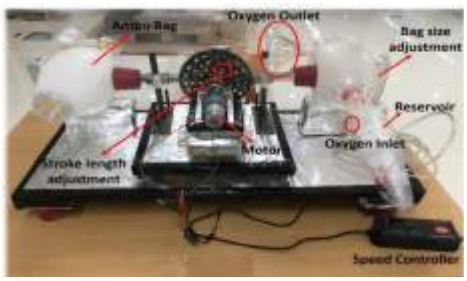
- IIT Ropar designed and fabricated a sanitizing device based on UV-C germicidal irradiation technology to sterilize groceries, vegetables, packages and personal belongings.
- This trunk shaped device is easy to fabricate, convenient to operate and chemical- free procedure for sanitization.



Negative Pressure Room (NPR):
IIT Ropar has developed a design for a negative pressure room (NPR) to prevent the transmission of COVID-19 through air at isolation wards and testing labs, thus protecting the medical staff from getting infected.

3-way PPE Sterilization:
IIT Ropar has designed a device to sterilize and cleanse 'Used PPE' by three proven pathogen- killers namely Ultraviolet-C irradiation, Ultra-sonication and an oxidizing agent. These techniques are known to disrupt the capsid of viruses and render them inactive. By employing three sterilizers in combination, respirators and PPE can be completely disinfected.





Low Cost Ventilator:
IIT Ropar team designed & fabricated a low cost ventilator.

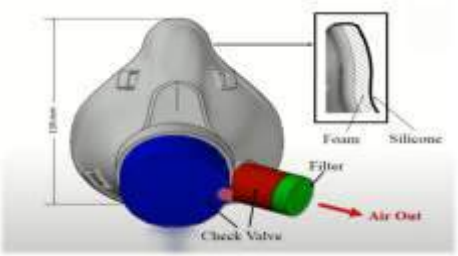
Line Robot:
IIT Ropar team designed a "wardbot" to deliver medicines/food in Covid-19 patients ward to minimize medical staff intervention.

Containment Box:
Containment Box is designed for protecting frontline healthcare workers that can allow it to be converted into a negative pressure chamber by connecting the vacuum from the wall-gas supplies, readily available in most hospitals.

Sampark-O-Meter:
A mobile-based app called "Sampark-O-Meter" is developed which can indicate areas on maps with maximum coronavirus infection possibility.

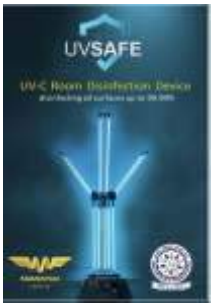
Intelligent Infrared Vision System for Covid-19 suspects' identification:
Intelligent Infrared Vision System has been developed which is portable, economical, and safe with remote screening capabilities along with self decision making ability to detect suspects without human intervention at crowded places.

Affordable, Compact and infection-free BiPAP MASK for SARS patients:
BiPAP (Bilevel Positive Airway Pressure) ventilation support is developed for the less critical COVID-19 cases and as a backup while traditional ventilators are occupied for the critical cases.



MEDI - Sarathi and AI Powered Trolley:
IIT Ropar in association with PGIMER, Chandigarh have developed and launched two state-of-the art low cost autonomous vehicles, “Medi- Sarathi’ and “AI-Powered Trolley” for COVID-19 patients with an intent to minimize healthcare workers' contact with infected patients and contaminated surroundings.

Enactus IIT Ropar team made more than 300 biodegradable masks from old clothes to reduce threat of Water and Land Pollution #MaskinHome, creating awareness to wear disposal masks made of clothes when we are not in high-risk proximity.



IIT Ropar in collaboration with Momentum India Pvt. Ltd. has developed a room disinfection device **"UVSAFE".** The device can be used on door knobs, table tops, cupboards, room fixtures, wall corners, work tops, artifacts; furniture tops etc. and has been deployed at Dubai Sports City.

INFRASTRUCTURE DEVELOPMENT

INFRASTRUCTURE DEVELOPMENT

The year 2020-2021 has been a year in which the infrastructure development of the Institute has continued amidst the COVID-19 pandemic. After the announcement of the countrywide lockdown, all the construction works of the Institute had to be stopped with effect from the 22nd of March, 2020. Some of the workmen who were staying within the campus started going to their native states due to sheer panic. However majority of the workmen stayed within the campus and were adequately looked after. The Government of India (Ministry of Home Affairs) vide their Order MOH No. 40-3/20-DM-1(A) dated 15th April 2020 issued consolidated guidelines for operation of construction activities. In view of the said order request was made to the local Government Authorities by the CPWD along with the Institute to take up partial execution of some of the works at site from 20th April 2020 with the available manpower and existing stock of materials and consumables duly abiding by all safety measures as mentioned in the Government of India order. After the local State Government authorities approved the request work the partial work at site started from 22.04.2020 onwards and slowly but steadily gathered momentum. By end April and beginning of May 2020 the workmen who had gone away from the site started returning back and this strengthened the existing workforce.

During this period the second phase that is Phase 1B which was continuing some building infrastructures have been completed and occupied by the Institute. These are the faculty residences (72 flats), out of which 64 are Type 5 and 8 are Type 6) , the Campus School , the group of Workshops of five blocks, Metallurgy workshop, IC Engine and CNC machine workshop, Tinkering, Traditional and Civil workshops) and the 38 room Visitor's Hostel and the Central Research Facility (CRF). In the Library Lecture Hall and Auditorium building, the Library and Lecture Hall portion is nearly complete but the Auditorium work is in progress. The second Dining Hall and the Sewage Treatment Plant (500 KLD) of Phase 1B are complete but commissioning of the 500 KLD sewage treatment plant is pending. The administrative and financial approval that has been accorded to the PMC by the Institute for this phase is of Rs. 350.69 Crores.

The Institute obtained revised approval for construction activities amounting to Rs. 1333.70 Crores from the Government of India on 30th August 2019, thereby meaning that an additional sanction of Rs. 102.70 Crores over the previous amount of Rs. 1231.00 Crores has been provided for construction work.

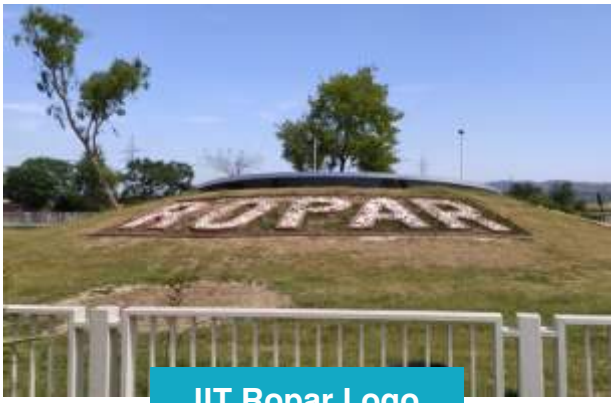
The final phase that is Phase 1C is also undergoing speedy progress and after the design related issues of the huge and iconic Super Academic Block (SAB) had been finalized. In this Phase 1C, the Nitrogen Plant building has been completed and the faculty and staff residential quarters (72 flats) are in their finishing stages. All structural drawings of the Super Academic building have been vetted by experts of IIT Roorkee and structures of the basement, ground, first and second floors have been completed. Structural work of other above floors is also under construction. The construction of the Students Hostel (G+5) of 520 seat capacity) is also in very advanced stage. This phase also has three Electrical Sub-Stations (ESS 5, 6 and 7) and the structural work of all have been completed and commissioning activities are in operation. The administrative and financial approval that has been accorded to the PMC by the Institute for this phase is of Rs. 387.83 Crores.

The overall progress of the construction work of IIT Ropar permanent campus, considering all the three phases, as declared by the PMC (CPWD) up to the end of March 2021 is 82 percent .

This year witnessed the greatest day of its history on the 22nd of October, 2020 during which the main campus of the Institute was inaugurated by the Hon'ble Minister of Education, Government of India, Shri Ramesh Pokhriyal 'Nishank' in the gracious presence of Shri Sanjay Dhotre, Minister of State, Ministry of Education and Shri Amit Khare, Secretary, Department of Higher Education in the August presence of the former Director Prof. Sarit Kumar Das.

IIT ROPAR-PHASE-1A

IIT ROPAR LOGO



IIT Ropar Logo

IIT Ropar Entrance Gate Complex

Main Gate Area

IIT Ropar Entrance Gate Complex

Spiral Structure

Administrative Building (G+3)

Computer Science

Electrical Engineering Block

Mechanical Block

Lecture Hall Complex

Dining Hall

Director Residence (G+1)

Boys Hostel (690 Cap)

Girls Hostel (100 Cap)

Type-4 Residences
(7 blocks-56 Units) (G+3)

Chemistry Department (G+3)

IIT ROPAR PHASE- 1B

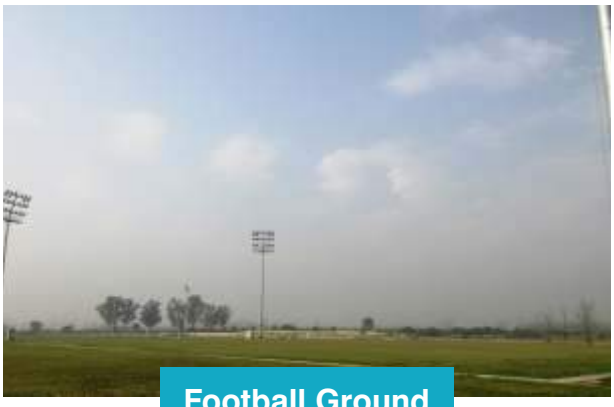
Gate Complex

Sports Complex

Basket Ball Court

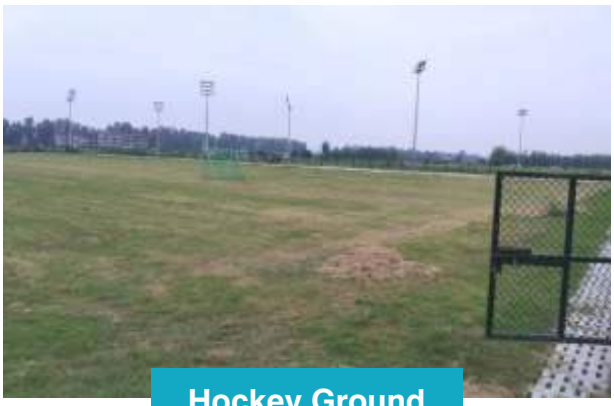
Tennis Court

Cricket Field



Football Ground

Volleyball Court



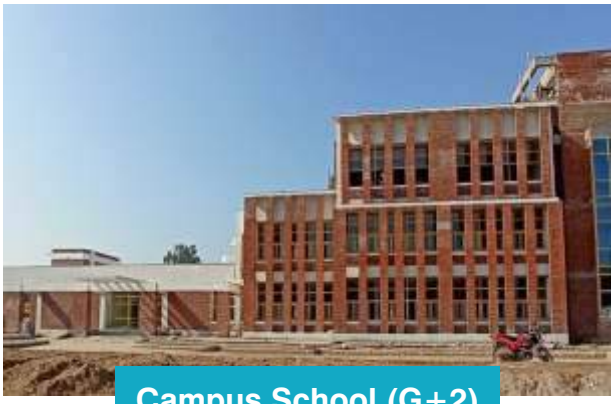
Hockey Ground

Girls Hostel (160 cap) (G+3)

Girls Hostel (100 cap) (G+3)

Boys Hostel (720 cap) (G+3)

Boys Hostel (230 cap) (G+3)

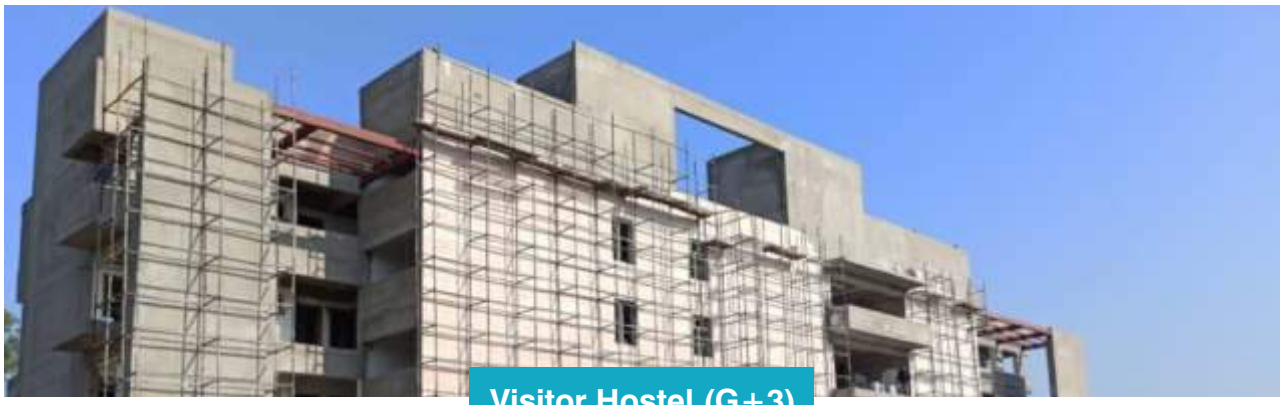


Campus School (G+2)

CRF Building (G+1)

Dining Hall (G+1)

Auditorium cum Library & Data Centre Complex(G+1)



Visitor Hostel (G+3)

T-5 RESIDENCES

T-5 (Block 1 & 2) Residence

T-5 (Block 3 & 4) Residence

T-5 (Block 5 & 6) Residence

T-5 (Block 7 & 8) Residence

Type-6 Residences
(1 block, 8 units) (G+3)

Workshop (Single Storey)

IIT ROPAR PHASE-1C

Super Academic Block (G+4)

Boys Hostel (463 cap)(G+5)

Residence T5 (24 Units) (G+3)

Residence T6 (24 Units) (G+1)

Residence T2B (24 Units) (G+2)

Liquid Nitrogen Plant (Single Storey)

03 Nos. ESS (Single Storey)

ACADEMICS

ACADEMICS

IIT Ropar is rapidly progressing in the field of Science and Technology. Since its inception in 2008, IIT Ropar has pursued excellence with committed determination. IIT Ropar has six Engineering disciplines: Chemical Engineering, Computer Science and Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, & Metallurgical & Materials Engineering; four Science Disciplines: Chemistry, Mathematics and Physics; and Humanities and Social Sciences; and one Center: Center for Bio-medical Engineering. As of April 2020, IIT Ropar has 1246 students enrolled in its B.Tech. programs, 304 M.Tech. students, 151 M.Sc. students and 677 PhD students. As of April 2021, faculty strength of IIT Ropar is 175. Faculty members are supported by nearly 144 staff (non-teaching) members. These numbers are anticipated to increase as the Institute is growing at a steady pace. The faculty members of IIT Ropar have a wide range of academic and research experience. They have been trained in the top ranked Institutes within the country and abroad. During 2020-21, numerous reforms to improve the academics of the Institute have been introduced. Some of these include:

1. Standard format for examination question papers, including the modified front cover of the answer-scripts.
2. Creating a repository of the question papers in the Central Library.
3. Establishment of a Teaching Learning Center (TLC).
4. Creation of Academic Committee for Post Graduate Studies (ACPGS), to streamline the masters program (non-research based).
5. Streamlining the class Timetable by creating a slot system and appointing a coordinating incharge.
6. Formation of a General Engineering Course Management Committee (GE-CMC) for allocation of faculty and Teaching Assistants for General Engineering Courses.
7. Timely disposal of disciplinary cases.
8. Creation of additional classrooms to accommodate the increased student strength.
9. Streamlining the operational aspects of minor/ concentration programs.

The number of students and scholars ADMITTED during year 2020-21

Sr. No.	Department	B.Tech.	M.Tech.	M.Sc.	Ph.D
1.	Biomedical Engineering	NA	14		12
2.	Chemical Engineering	22	17		14
3.	Chemistry	NA		24	25
4.	Civil Engineering	34	16		11
5.	Computer Science & Engineering	84	20		20
6.	Electrical Engineering	82	50		27
7.	Humanities & Social Studies	NA			14
8.	Mathematics	NA		23	15
9.	Mathematics & Computing	29			-
10	Mechanical Engineering	77	48		17
11.	Artificial Intelligence	NA	16		-
12.	Metallurgical and Materials Engineering	23			13
13.	Physics	NA		26	16
	Total	**351**	**181**	**73**	**184**

Numbers of students (Category wise)

Sr. No.	Programme	General	OBC	SC	ST	EWS	PD	Male	Female
1.	B.Tech.	134	98	55	23	36	5	278	73
2.	M.Tech.	74	47	31	11	18	0	159	22
3.	M.Sc.	32	20	9	5	7	0	51	22
4.	Ph.D	129	32	11	-	12	-	119	65

The number of students and scholars ON ROLL in the year 2020-21

Sr. No.	Department	B.Tech.	M.Tech.	M.Sc.	MS (R)	Ph.D
1.	Biomedical Engineering	NA	24			39
2.	Chemical Engineering	84	26			28
3.	Chemistry	NA		49		85
4.	Civil Engineering	130	26			48
5.	Computer Science & Engineering	308	36			65
6.	Electrical Engineering	295	85			98
7.	Humanities & Social Studies	NA				55
8.	Mathematics	NA		46		56
9.	Mathematics & Computing	51				-
10	Mechanical Engineering	280	80			120
11.	Mechanical Engineering (Dual Degree)	44				-
12.	Artificial Intelligence	NA	27			-
13.	Metallurgical and Materials Engineering	54				23
14.	Physics	NA		56		60
	Total	**1246**	**304**	**151**		**677**

No. of Students Category wise (on roll):

Sr. No.	Department	General	OBC	SC	ST	(EWS)	PD	Male	Female
1.	B.Tech.	546	341	197	93	54	15	1060	186
2.	M.Tech.	115	86	48	21	34	0	257	47
3.	M.Sc.	73	42	20	9	7	0	102	49
4.	MS (R)	5	-	-	-	-	-	5	-
5.	Ph.D	505	122	35	3	13	-	463	215

No. of Degrees Awarded in Year 2020-21

Sr. No.	Department	B.Tech.	Dual Degree	M.Tech.	M.Sc.
1.	Biomedical Engineering			9	
2.	Chemical Engineering				
3.	Chemistry				25
4.	Civil Engineering	20			
5.	Computer Science & Engineering	47		19	
6.	Electrical Engineering	35		18	
7.	Humanities & Social Studies				

8.	Mathematics				21
9.	Mechanical Engineering	33	7	25	
10	Metallurgical and Materials Engineering				
11.	Physics				23
	Total	**135**	**7**	**71**	**69**

B. Tech.

Merit cum Means Scholarship

The merit-cum-means scholarship is given to deserving undergraduate students. These are permissible to about 25% of the students. The present value of merit-cum-means scholarship is about Rs. 1000/- per month for general students and the recipientis exempted from paying tuition fee. The criteria on the merit for the first year is the All India Rank in JEE.

Institute Free Studentship

The institute offers free studentship to 10% students on the basis of means only.

Institute Merit Prize and Certificate

The Institute offers merit prizes and certificates to top 7% of the students of each 4 year B. Tech. programme for the 1st and 2nd semester. A total Amount of Rs.2500/-and a merit certificate is given to the students.

Free Messing

The Institute offers the award of free messing to SC/ST students.

Institute Merit Scholarship

Merit Scholarship equivalent to the tuition fee paid by the students having JEE (advanced) 2018 rank not exceeding 1500(open Category) will be awarded, who join the B.Tech. programme at IIT Ropar.

Scholarship given in the 1st semester of AY 2020-21

Sr. No.	Scholarship Name	Number of Student	Amount of Scholarship
1.	Merit-cum-means Scholarship	274	6034110
2.	Free Studentship Scholarship (10%)	11	366674
3.	Merit Prize & Certificate (top 7% students)	95	237500
4.	Free Messing Scholarship	5	56976
	Total	**385**	**6695260**

Scholarship given 2nd semester of AY 2020-21 *

Sr. No.	Scholarship Name	Number of Student	Amount of Scholarship
1.	Merit-cum-means Scholarship	274	6034110
2.	Free Studentship Scholarship (10%)	11	366674
3.	Merit Prize & Certificate (top 7% students)	95	237500
4.	Free Messing Scholarship	5	56976
	Total	**385**	**6695260**

**To be released*

Total Amount spent on the financial assistance to B.tech students is Rs. 13390520/- (2020-21)

M.Sc.

Merit cum Means Scholarship

The M.Sc. students received Merit–Cum-Means Scholarship (MCM) in the form of tuition fee waiver and monthly pocket allowance of Rs.1000/-.

1st semester of AY 2020-21

Sr. No.	Scholarship Name	Number of Student	Amount of Scholarship
1.	Merit cum Means Scholarship	31	2,81,185/-

2nd semester of AY 2020-21

Sr. No.	Scholarship Name	Number of Student	Amount of Scholarship
1.	Merit cum Means Scholarship	31	3,34,085/-

OUTREACH PROGRAMME

GLOBAL INITIATIVE OF ACADEMIC NETWORKS (GIAN)

Global Initiative of Academic Networks (GIAN) is aimed at tapping the talent pool of scientists and entrepreneurs, internationally to encourage their engagement with the institutes of Higher Education in India so as to augment the country's existing academic resources, accelerate the pace of quality reform, and elevate India's scientific and technological capacity to global excellence.

In order to garner the best international experience into our systems of education, enable interactions of students and faculty with the best academic and industry experts from all over the world; IIT Ropar has successfully conducted GIAN Courses on Mechanobiology, Robotic Systems, Data driven Kenametics, Synthsis, Biomimetics, Surface Engineering, Fatigue Mechanics with experts from abroad.

LIST OF GIAN COURSES ORGANIZED AT IIT ROPAR SINCE 1 JANUARY 2020

Sr. No.	Name of the IIT Ropar Faculty	Name of the Foreign Faculty	Title	Schedule	Amount Sanctioned	Completed / Not Completed	Remarks
1	Dr. M. Mishra, Mathematics	Prof R. Narayanan, University of Florida, Gainesville, USA	Interfacial Instability with Industrial Applications	TBD	8,52,000/-	Postponed because of the COVID and the unwillingness of the expert to travel	Sanctioned on 27/2/20
2	Dr. A Kumar, Mathematics	Prof N. N. Leonenko, Cardiff University, UK	Risky Asset Models with Dependence	TBD	NA	Postponed because of the COVID and the unwillingness of the expert to travel	Approved on 24/06/20

3	Dr. S. Kar, Humanities and Social Sciences	Prof. K. Fujita, Kyoto University, Japan	Current Issues in Biolinguistics and Evolutionary Linguistics	TBD	NA	Postponed because of the COVID and the unwillingness of the expert to travel	Approved on 24/06/20
4	Dr. K. Jena, Physics	Prof Akihiro Morita, Tohoku University Japan	Theory of Surface Nonlinear Spectroscopy	TBD	NA	Postponed because of the COVID and the unwillingness of the expert to travel	Approved on 24/06/20

INTERNSHIP REPORT 2020-21

List of students selected for internship in 2020-21			
Department of Chemistry			
Sr. No.	**Name of Supervisor**	**Name of Student**	**Institute /College Address**
1	Dr. T.J. Dhilip Kumar	Noor ul Azha	Islamia College of Science and Commerce, Kashmir University, Hawal Srinagar 190001
2	Dr. Debaprasad Mandal	Shaziya hassan	University of Kashmir
Department of Chemical Engineering			
Sr. No.	**Name of Supervisor**	**Name of Student**	**Institute /College Address**
1	Dr. S Manigandan	Sehrish Ahmad	Government Degree College Sopore (affiliated to Kashmir University)
2	Dr. Sarang Gumfekar	Bilkees Ara	University of Kashmir, Department of Biochemistry
3	Dr. Himanshu Paliwal	Saima Noor	Government Degree College, Sopore, Kashmir
4	Dr. Tarak Mondal	Bilal Ahmad Shah	University of Kashmir Hazratbal Srinagar, Bagh Rajpora pulwama J&K
5	Dr. Navin Gopinathan	Ritika gupta	Govt. Degree College, Kathua (Jammu And Kashmir)
6	Dr. Vishwajeet Mehandia	Syed Muneesa	Sri Pratap College, Srinagar
7	Dr. Arghya Banerjee	Shabnum Yousuf	Sri Pratap College, Cluster University, Srinagar
Department of Computer Science and Engineering			
Sr. No.	**Name of Supervisor**	**Name of Student**	**Institute /College Address**
1	Dr. Shashi Shekhar Jha	Sahil Qayoom	Government Collage of Engineering and Technology Chak Bhalwal,J&K-181122
2	Dr. Viswanath Gunturi	Reem Qadri	Islamic University of Science andTechnology; Awantipora, Pulwama, Pin-192122, J&K

3	Dr. Neeraj Goel	Aadil Azad Khan	Islamic University of Science and Technology, Pulwama
4	Dr. Sujata Pal	Bharat	University of Jammu
5	Dr. Puneet	Faisal Majeed	Islamic University of Science and Technology, 1-University Avenue Awantipora, Pulwama, Pin-192122, Jammu and Kashmir
Department of Civil Engineering			
Sr. No.	**Name of Supervisor**	**Name of Student**	**Institute /College Address**
1	Dr. Ratan Sarmah	Mallika Sharma	Model Institute of Engineering and Technology & Kot Bhalwal, Jammu and Kashmir
2	Dr. Ickkshaanshu Sonkar	Ghazar Muzaffar	Islamic University of Science And Technology, Awantipora, Pulwama,192122, Jammu and Kashmir
3	Dr. Putul Haldar	Saalem Javid	Islamic University of Science And Technology, Awantipora, Pulwama,192122, Jammu and Kashmir
Department of Electrical Engineering			
Sr. No.	**Name of Supervisor**	**Name of Student**	**Institute /College Address**
1	Dr. Saifullah Payami	Izzat Amin	Islamic University of Science And Technology, Pulwama,Jammu and Kashmir
2	Dr. Saifullah Payami	Tanzeela Azhar Sofi	Islamic University of Science and Technology
3	Dr. Satyam Agarwal	Wajid ul haque	SP college Srinagar
4	Dr. Satyam Agarwal	Shakirah nabi	Cluster university Srinagar Jammu and Kashmir
5	Dr. Ravibabu Mulaveesala	Ifla Mushtaq	Sri Pratap College M.A. Road Srinagar
6	Dr. Ravibabu Mulaveesala	Qurat Ul ain	Cluster university Srinagar
7	Dr Ravi Teja (HOD)	Kashif Bilal	University of Kashmir
8	Dr. Chakradhar Reddy. Chandupatla	Bisma Manzoor	Islamic university of science and technology Awantipora Jammu & Kashmir
9	Dr.K Ramachandra Sekhar.	Faiza Mohammad	Islamic University of Science and Technology, Awantipora, Pulwama, Jammu and Kashmir.
10	Dr.Saifullah payami	Zaheen javaid	Islamic university of science and technology,awantipora,pulwama ,J&K.
11	Dr.A.V Ravi Teja	Saqib Ahmad Pala	Islamic University of Science and Technology Awantipora ,Kashmir
12	Dr. A.V. Ravi Teja	Mohd Waqais Rather	Islamic University of Science and Technology Pulwama
13	Dr. Ashwani Sharma	Vasav Prashar	Goverment College Of Engineering and Technology, Chak Bhalwal 181122, Jammu,J&K.
14	Dr. Ashwani Sharma	Nowreen Fayaz	Islamic University of Science and Technology

Department of Mechanical Engineering			
Sr. No.	**Name of Supervisor**	**Name of Student**	**Institute /College Address**
1	Dr. Sachin Kumar	Amaan Muhammad Qadri	Islamic University of Science and Technology, Awantipora
2	Prof. Harpreet Singh	Hadia Feroz Bhat	Islamic University of Science and Technology

RESEARCH AND DEVELOPMENT ACTIVITIES

RESEARCH AND DEVELOPMENT ACTIVITIES

IIT Ropar puts immense emphasis on promoting cutting edge research and publications of high quality. We firmly believe that this is the key to our recognition in the international research community. We offer Ph.D degrees in all disciplines. At present, we have 677 Ph.D scholars in the Institute. 32 Ph.D scholars have successfully defended their thesis and 184 scholars have joined the Ph.D program during 2020-21.

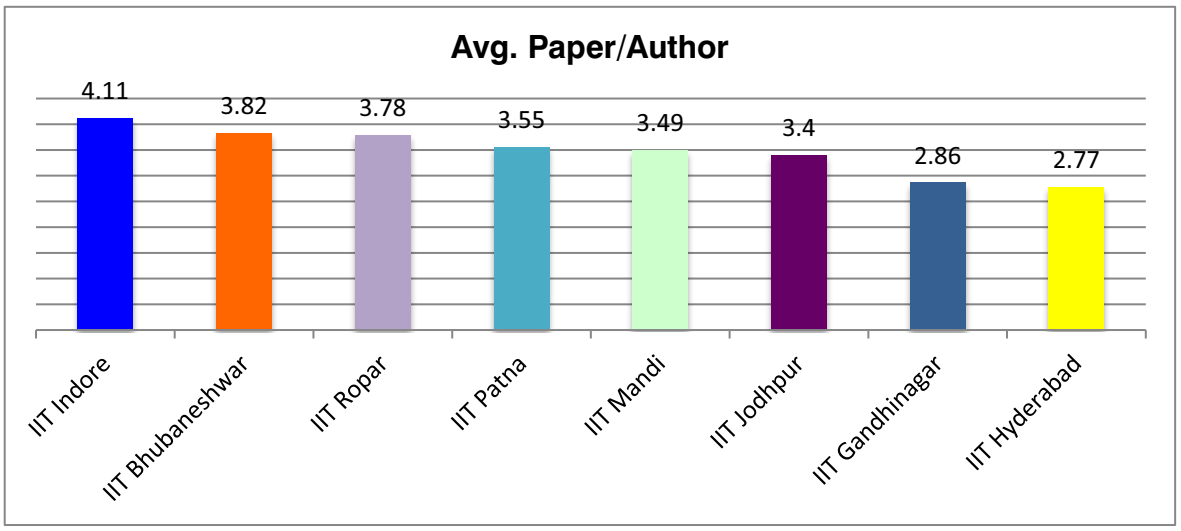


Figure 1: Average Paper per Author

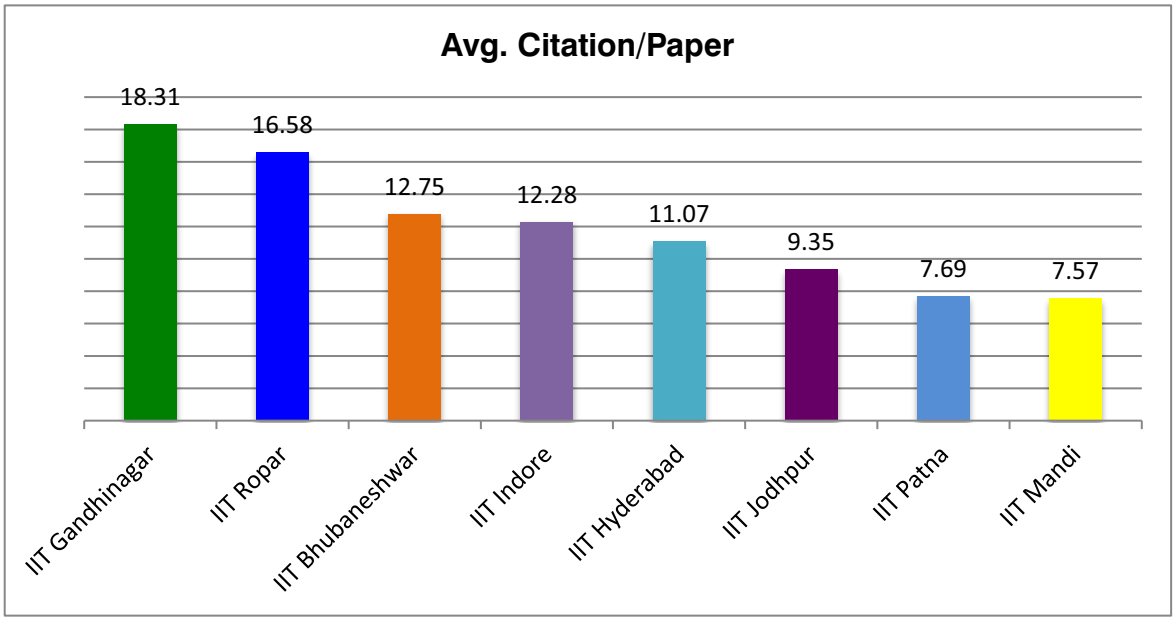
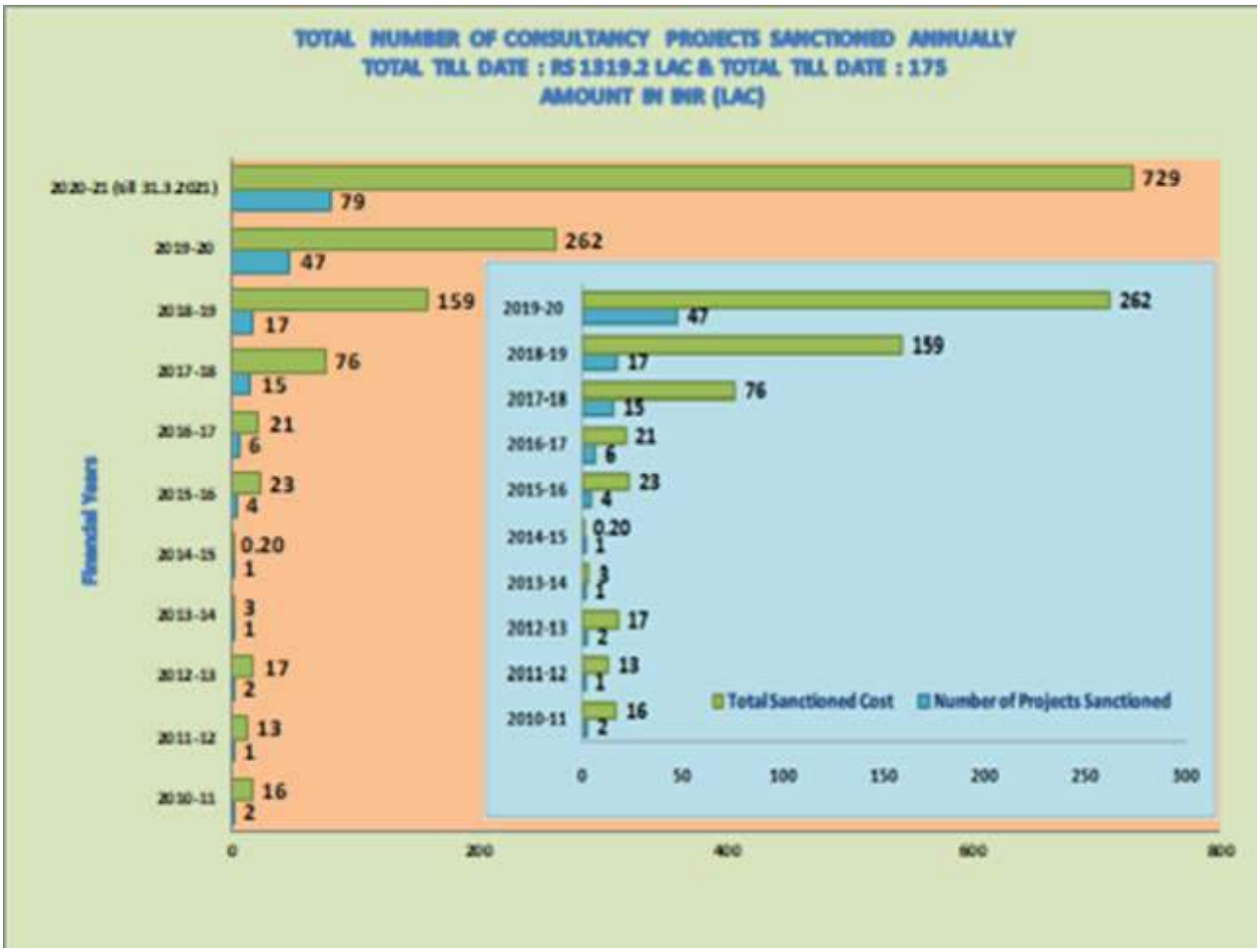
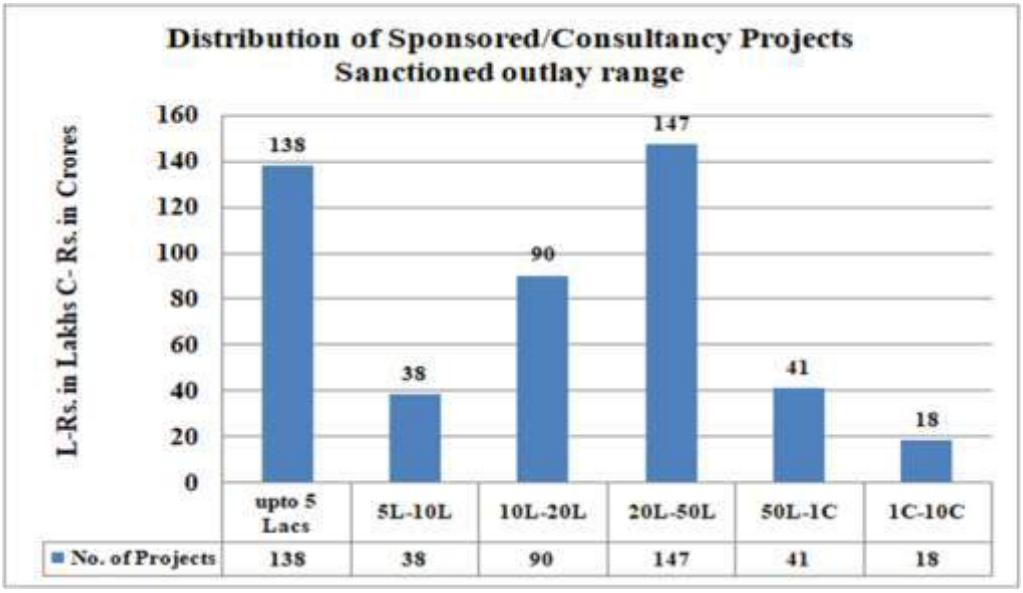


Figure 2: Average Citation per Paper

THE GROWTH OF R&D IN THE LAST YEAR



OVERVIEW



CONSULTANCY ACTIVITIES

Consultancy activities were taken up for the government, public sector and industry, both Indian and international. The types of consultancy provided included expert advice, retainership, product/ process/ software development, analysis, evaluation, product design and limited testing. We received 79 projects in 2020-21 with a sanctioned amount of Rs. 7.29 crores.

LIST OF SOME CONSULTANCY PROJECTS INITIATED

Consultancy Project money Sanctioned from Non-Internal Sources FY 2020-21

(Rs. in Crores)

Sr. No.	Funding Agency	Name of Faculty Member	Department	Title of Project	Total Sanctioned Amount
1	Industrial Consultancy	Dr. Khushboo Rakha	Metallurgical and Materials Engineering (MME)	Designing of one Trolley Type, in room UV-C disinfecting equipment	0.10
2	Industrial Consultancy	Dr. Khushboo Rakha (CI) and Dr. Naresh Rakha (Co-CI)	Metallurgical and Materials Engineering (MME)	Designing of one 'Front opening UV-C disinfecting box	0.01

3	Industrial Consultancy	Dr. Srivatsava Naidu (CI) Dr. Dhiraj K. Mahajan (Co-CI)	Mechanical Engineering	Synthesis and Validation of Germicidal Coating for Bopp Films	0.15
4	Industrial Consultancy	Dr. Aditya Singh Rajput (CI) and Dr. Mitesh Surana (Co-CI)	Civil Engineering	Vetting of structural designs and drawings +cost analysis	0.07
5	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking Detailed Design & Drawings of 35m Sanjay Bridge over Sanjay Nallah at Kargil-Leh Road in BRO (P) Vijayak	0.00
6	Industrial Consultancy	Dr. Naveen James	Civil Engineering	Consultancy work at the Rajpura Thermal Plant for Ash Pond Evacuation	0.02
7	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of centering and shuttering of beams/slabs of super academic building, IIT Ropar	0.00
8	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking Detailed Design & Drawings of 30m Nagrah Bridge over Nagrah Nallah at Dul-Galhar Road in BRO (P) Beacon	0.01
9	Industrial Consultancy	Dr. Narinder Singh	Chemistry	Design and Synthesis of Benzimidazolium and Pyridinium Based Membranes	0.04
10	Industrial Consultancy	Prof. C. R. Suri and Dr. Narinder Singh (CI), Prof. Harpreet Singh (Co-CI)	Chemistry, Mechanical Engineering	Synthesis of Organic Cation Based Copper Nanoclusters: Antigen-Antibody Based Sensor System	0.07

11	Industrial Consultancy	Dr. Narinder Singh	Chemistry	Development of Coatings to Resist the Microbial Attack on the Surface of Given Samples	0.03
12	Industrial Consultancy	Prof. C. R. Suri and Dr. Narinder Singh (CI), Prof. Harpreet Singh (Co-CI)	Chemistry, Mechanical Engineering	Conjugate and Coating Development for the Fabrication of Sensor Kit and Related Applications	0.04
13	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design of Box Type Storm Drainage Scheme on 200 Feet Wide Road from Junction of Pr-4 and Pr-7 To Junction of Sectors 118/120/125/126 on Pr-7 At S.A.S Nagar Mohali (Punjab)	0.00
14	Industrial Consultancy	Dr. Khushboo Rakha	Metallurgical and Materials Engineering (MME)	UVGI Technology Based Disinfection Cabinet	0.01
15	Industrial Consultancy	Dr. Rohit Y Sharma	Electrical Engineering	Design and development an AI-enabled hybrid Intrusion Detection, Prevention and Offensive System (IDPOS)	0.06
16	Industrial Consultancy	Dr. Naveen James	Civil Engineering	Third Party Test of Soil - California Bearing Ratio (CBR) Test	0.01
17	Industrial Consultancy	Dr. C. C. Reddy	Electrical Engineering	Investigations on Transition joint dielectrics of three different Manufactures	0.17
18	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Design, Drawings of 12m c/c span RCC Slab & Sub Structure designed for U.P. State Bridge Corporation LTD	0.01

19	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Construction of Bridges and Culverts on 200 Feet Wide Road From NH-21 (Sunny Enclave) to PR-4, New Chandigarh Mullanpur,SAS Nagar, Mohali	0.02
20	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design and Construction of 60mtr span major PMT Steel Girder Bridge with RCC Decking on Open Foundation over Mitalgarh Nallah (Mitalgarh Bridge) At Km 0.022 On Galhar-Sansari Road under 118 RCC/35 BRTF of Project Beacon in J&K State	0.01
21	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Vetting of Design and Construction Of 80M Span Major PMT Bridge (Sumdho Bridge) at Km 18.290 On Road Nimmu-Padam-Darcha Under 81 RCC/16 BRTF Of Project Vijayak In Leh-Ladakh Region Of J&K State	0.01
22	Industrial Consultancy	Dr. K.Ramachandra Sekhar	Electrical Engineering	Design and development of voltage regulators of fixed and variable type	0.01
23	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking Detailed Design & Drawings of 30m Nagrah Bridge over Nagrah Nallah at Dul-Galhar	0.01
24	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking Detailed Design & Drawings of 35m Sanjay Bridge over Sanjay Nallah at Kargil-Leh Road in BRO (P) Vijayak	0.00
25	Industrial Consultancy	Dr Shashi Shekhar Jha	Computer Science and Engineering	Text Analytics for Patent Databases	0.01

26	Industrial Consultancy	Dr. Sagar R. Chavan (CI) and Dr. Reet Kamal Tiwari (Co-CI)	Civil Engineering	Preparation of State Specific Action Plan (SSAP) on Water Sector of Punjab State	0.47
27	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Vetting of ROB at Ch. 117+049 related to the project Four Laning of Solan to Kaithlighat of NH - 22 (now NH-05) from Km. 106+139 to Km 129+0.5 under NHDP Phase-III on EPC mode pattern in the state of Himachal Pradesh	0.04
28	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Design and Drawing of RoB 128+419 (Only railway Portion)	0.00
29	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the structural designs and drawing of "Construction of 6 lane elevated corridor from Mayur Vihar Flyover (near Chilla Regulator) to Mahamaya Flyover on Noida - Greater Noida expressway, along Shahdara drain"	0.19
30	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design of Meeting Hall, Circuit House Mandi	0.00
31	Industrial Consultancy	Dr. C C Reddy	Electrical Engineering	Investigating the effect of Simulated 25KV AC Power line transients on BEL Product	0.01
32	Industrial Consultancy	Dr. C C Reddy (CI) Dr. Bibhu P Padhy and Dr. R. Sekhar (Co-CI)	Electrical Engineering	HV Test and Assessment of Coupling Capacitor of Stator Winding at 39.1kv DC and Tan Delta Assessment	0.01

33	Industrial Consultancy	Dr. C K Narayanan	Computer Science and Engineering	Visual Document Analysis and Understanding	0.12
34	Industrial Consultancy	Dr. K. Ramachandra Sekhar	Electrical Engineering	Proposal on Design and Development of Smart Voltage Regulators of Fixed and Variable Type	0.01
35	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Construction of 20m X 60m Box Culverts at Rd 4360 on 200 feet Wide Road From NH-21 (Sunny Enclave) To PR-4, New Chandigarh Mullanpur, SAS Nagar, Mohali	0.00
36	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Vetting of Standard Design & Drawings (24m c/c Expansion Joint) of PSC Superstructure, Pier cap, and Abutment Cap for U.P. State Bridge Corporation LTD	0.01
37	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the structural design of 140mtr (70+70mtr) double span Major Permanent bridge with Steel Super-structure at Km 1.45 over Indus River on Loma-Dungti road (Part-1) under 1445BCC/ 753 BRTF of Project Himank in J&K State	0.02
38	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Construction of 90m Span Major PMT bridge (Tulampatti Bridge) under Project Vijayak in Leh-Ladakh Region of J&K State	0.01
39	Industrial Consultancy	Dr. Dhiraj K. Mahajan	Mechanical Engineering	Design Support For Negative Pressure Ambulance And Isolation Room For COVID-19 Patients	0.03

40	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the structural design of 120m (90+30) double span major permanent bridge with Steel Super-structure at Krn 30.40 under project HIMANK in leh-Ladakh region of J&K State	0.01
41	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the structural design of 140rn (70+70) twin span Major PMT Chalunka bridge with Steel Super-structure at Krn 191.02 under project BEACON in J&K State	0.02
42	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Checking the structural design oL191. sparr Major PMT steel girder bridge over Naigarh Nallah at Km 11.050 under project BEACON in J&K State	0.01
43	Industrial Consultancy	Dr. Putul Haldar	Civil Engineering	Vetting of Revised Structural Drawings of APMC Azadpur, New Delhi	0.01
44	Industrial Consultancy	Dr. C. C. Reddy	Electrical Engineering	Greater Mohali Area Development Authority Document Vetting (Described in Scope of Project)	0.05
45	Industrial Consultancy	Dr. Aditya Singh Rajput (CI) and Dr. Mitesh Surana (Co-CI)	Civil Engineering	Condition assessment, structural stability analysis and preparation of befitting repair/retrofitting strategy for various warehouse structures	0.17
46	Industrial Consultancy	Dr. Reet Kamal Tiwari and Dr. Sagar Rohidas Chavan (CI)	Civil Engineering	Soil erosion hotspot study for catchment area of Ranjit Sagar Dam project	0.12
47	Industrial Consultancy	Dr. Saifullah Payami	Electrical Engineering	Development and Integration of LED Driver for Airfield Lighting System	0.07

48	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Vetting of Design and Drawing of Tunnel	0.05
49	Industrial Consultancy	Dr. Navin Kumar	Mechanical Engineering	Mechanical Testing of Elastomric Samples - OTY .40	0.00
50	Industrial Consultancy	Dr. Balwinder Sodhi	Computer Science and Engineering	Broadridge NHO program (Batch#1) project reference: BROADRIDGE/NHO2020-B1/B.SODHI	0.11
51	Industrial Consultancy	Dr. Anupam Agrawal	Mechanical Engineering	Copper Electrode Machining	0.05
52	Industrial Consultancy	Dr. Sagar Rohidas Chavan and Dr. Reet Kamal Tiwari (CI) Dr. Ratan Sarmah, Dr. Sayantan Ganguly, Dr. Ickkshaanshu Sonkar and Dr. Aditya Singh Rajput (CO-CI)	Civil Engineering	Comprehensive Design and Survey of Sustainable Lift Irrigation Schemes in Changer Area of Punjab	0.54
53	Industrial Consultancy	Ramjee Repaka	Mechanical Engineering	Design and development of automatic car wash product	0.05
54	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Design and Drawings for curved span of ROB Dadri Meerut	0.01
55	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the structural design of subzi mandi, Shimla	0.00

56	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of 15 M Span Of Rob Portion of The Bridge Between Stations of Ioravasan & Valsad Of Mumbai-Delhi Trunk Route	0.01
57	Industrial Consultancy	Dr. Asit K Chakraborti	Chemistry	Expert Opinion on an Indian Patent Application	0.04
58	Industrial Consultancy	Dr. Rajendra Srivastava	Chemistry	Synthesis of Nanocrystalline Zeolites having Inter/Intra-crystalline Mesoporosity of Different Framework Structure	0.71
59	Industrial Consultancy	Dr. Anupam Agrawal	Mechanical Engineering	Laser Cutting of Round Discs	0.01
60	Industrial Consultancy	Dr. C. C. Reddy	Electrical Engineering	Motorization of Main and Sluice Gates of Sirhind Canal System at Ropar Headworks	0.12
61	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof hecking the proposed rob bet stations of Joravasan & Valsad of Mmbai-Delhi Trunk Route of W.RLY	0.01
62	Industrial Consultancy	Dr.Subrahmanyam Murala	Electrical Engineering	Deep Image Matting	0.45
63	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structural Design of PSC Girder End Block	0.00

64	Industrial Consultancy	Dr. Rohit Y . Sharma	Electrical Engineering	Artificial Intelligence and Data Science Upskilling	1.24
65	Industrial Consultancy	Dr. C. C. Reddy	Electrical Engineering	Investigations on HV Power Cable Technology	0.23
66	Industrial Consultancy	Dr. Rakesh Kumar	Physics	Development of Strain-free transfer of smart 2DNMs to Flexible polymer substrate for its further studies on the effect of mechanical strain to its optical and vibrational properties	0.03
67	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Vetting of Self Supported Steel Roof Structures for Cargo Building at Chandigarh	0.01
68	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Vetting of Self Supported Steel Roof Structures Footings for Cargo Building at Chandigarh	0.00
69	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the structural design of ROB on level crossing no-106 Yamunanagar	0.02
70	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Structural Design of Inverted Syphon	0.00
71	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structural Design of the proposed ROB in lieu of Level Crossing S-148 on Jalandhar- Pathankot Railway Line	0.03

72	Industrial Consultancy	Dr. Sayantan Ganguly (CI), Dr. Reet Kamal Tiwari, Dr. Sagar Rohidas Chavan, Dr. Ratan Sarmah, Dr. Ickkshaanshu Sonkar and Indramani Dhada (Co-CIs)	Civil Engineering	Preparation of State-Specific Action Plan (SSAP) on Water Sector for State of Haryana	0.48
73	Industrial Consultancy	Dr. Subrahmanyam Murala	Electrical Engineering	Under Screen Camera Project	0.62
74	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering		0.00
75	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structure Design of Composite Steel Box Girder at L-Xing B-22 (Islamabad) (51.6m Span)	0.01
76	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structure Design of Composite Steel Girder at Bhandari Bridge (22 m Span)	0.00
77	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Vetting of PEB for Med Repair Shed at Leh	0.00
78	Industrial Consultancy	Dr. Brajesh Rawat	Electrical Engineering	Impact on emission reduction through replacement of coal by Renewable Energy Source, Paddy Straw, for industrial application	0.24
79	Industrial Consultancy	Dr. C. C. Reddy	Electrical Engineering	Testing of HT Cables for High Voltage Performance	0.01
					7.29

LIST OF SPONSORED PROJECTS

Sponsored Project money Sanctioned from Non-Internal Sources FY 2020-21

(Rs. in Crores)

Sr. No.	Funding Agency	Name of Faculty Member	Department	Title of Project	2020-21	Total Sanctioned Amount	Project Status
1	STARS	Dr. Navin Kumar	Mechanical Engineering	Model Development for clinician to predict the bone and soft tissue strength and quality for type 2 Diabetic patients	0.31	0.31	Running
2	SERB-ECR	Dr. Neha Sardana	Metallurgical & Materials Engineering	Tailorable plasmonic metamaterial substrates: Gold and Beyond!	0.50	0.50	Complete
3	DRDO-CARS	Dr. Navin Kumar	Mechanical Engineering	High speed impact Dynamic and Deformation analysis of Target-projectile system using 3D-DIC Technique	0.58	0.58	Running
4	SYST (DST-SEED)	Mr. Malkeet Singh -PI and Dr. Shilpi Chaoudhary Co-PI	Mechanical Engineering	Recycling Of Machining And Packing Waste Via An Innovative Additive Manufacturing Process	0.38	0.38	Running
5	BIRAC	Dr. Ashish Sahani	Biomedical Engineering	A Low-cost Ambu-bag Attachment for Rapid Mass Emergency Deployment as a Ventilator – AARMED	0.35	0.35	Running
6	National Programe on Technology Enhanced Learning (NPTEL)	Dr. Sudarshan Iyengar	Computer Science and Engineering	Joy of Computing using Python	0.07	0.07	Running
7	All India Council for Technical Education	Dr. Ashish Sahani	Biomedical Engineering	Online AICTE Training And Learning (ATAL) Academy Programme Artificial Intelligence	0.01	0.01	Running

8	DST-AGRI	Dr. Narinder Singh	Chemistry	Fabrication of Handheld Device for On-site Application: Pesticide Monitoring in Environment and Agriculture Products	0.58	0.58	Running
9	DST	HoD, Department of Physics	Physics	FIST Program	1.02	1.02	Running
10	DAE-BRNS	Dr. Pushpendra Pal Singh	Physics	Transition matrix elements calculation, Experimentaltion and simulation for 2vand 0v Double Beta Decay	0.35	0.35	GNR
11	DST-SYST	Dr. Gagandeep Singh under the mentorship of Dr. Narinder Singh	Biomedical Engineering	Development and Validation of Indigenous Kit for Detection of Food Spoilage	0.39	0.39	Running
12	DAE (YSRA)	Dr. Debangsu Roy	Physics	Investigation of magnon valve based on magnetic Insulators	0.25	0.25	Running
13	DAE	Dr. Indranil Chatterjee	Chemistry	Development of a urea derivative conpound (D27) as a potential drug against SARS-CoV-2	0.33	0.33	Running
14	NHAI	Dr. Naveen James	Civil Engineering	Slope Monitoring and Landslide Hazard Quantification for Hilly Roads	0.78	0.78	Running
15	NHAI	Dr. Resmi Sebastian	Civil Engineering	Utilisation of rice husk ash, bagasse ash and bottom ash in highway embankment	0.53	0.53	Running

16	DST-NRDMS	Dr. Naveen James PI, Dr. Reet Kamal Tiwari and Dr. C K Narayanan	Civil Engineering	Development of low cost Artificial Intelligence System for early detection of landslide	0.43	0.43	Running
17	DST-Technology Innovation Hub	Dr. Pushpendra Pal Singh	Physics	Technology for Agriculture & Water	110.00	110.00	
18	Swedish Research Council	Dr. Samaresh Bardhan (PI) jointly with Prof. Koustav Dalal, Mid Sweden University, Sweden	Humanities & Social Sciences	Stubble Burning: Health impacts and social perception - an explorative study for prevention	0.63	0.63	
19	SERB-SRG	Dr. Shweta Jain	Computer Science and Engineering	Towards Fair and Interpretable Machine Learning Models	0.28	0.28	Running
20	SERB-SRG	Dr. Brajesh Rawat	Electrical Engineering	Design and Development of Single Chip Gas Sensor Arrays based on Two-Dimensional MoS_2, and Metal Oxide Hybrid Nanomaterials for Air Pollutants Monitoring at Near RoomTemperature	0.24	0.24	Running
21	SERB-SRG	Dr.Saikat Roy	Chemical Engineering	Spatial stress correlations in strong colloidal gel and its connection to yielding/plasticity	0.32	0.32	Running
22	DST-SEED	Dr. Narinder Singh	Chemsitry	Fabrication and training for contamination free food packing	0.29	0.29	Running

23	SERB-CRG	Dr. Rajendra Srivastava	Chemsitry	Unique mild processes based on catalytic transfer hydrogenolysis/ hydrogenation and photocatalysis for lignin valorization: Eliminating the use of high temperatures and non-renewable H2	0.47	0.47	Running
24	DST-Swarnajayanti fellowship	Dr. Rajesh V. Nair	Physics	Swarnajayanti fellowship and research grant	0.25	0.25	Running
25	SERB-Swarnajayanti	Dr. Rajesh V. Nair	Physics	Studies on the spectral and temporal modification of spontaneous emission of solid state defects using resonant photonic structures	3.09	3.09	Running
26	SERB-SRG	Dr. Atharva Abhay Poundarik	Biomedical Engineering	Development of a low-cost, 3D-printable osteoadhesive with versatile applications in orthopaedic surgery	0.31	0.31	Running
27	SERB-SRG	Dr. Santanu Sarkar	Mathematics	Nearly Invariant Subspaces and Unconditional Basis in de Branges Spaces of vector valued functions and an Invariant of Finite Dimensional operator Spaces	0.04	0.04	Running
28	SERB-CRG	Dr. Debangsu Roy	Physics	Investigation of the spin current driven excitations in Antiferromagnets	0.80	0.80	Running
29	SERB-CRG	Dr. Asoka Biswas	Physics	Thermodynamics of spin-chain: A quantum mechanical approach	0.21	0.21	Running

30	SERB-CRG	Dr. Mukesh Kumar	Physics	Charge transport and interfacial studies of PtSe2/MoS2 van der Waals heterojunction and its application for near infrared photodetectors	0.39	0.39	Running
31	SERB-CRG	Dr. TJ Dhilip Kumar	Chemistry	Ultracold Molecules and Controlled Chemistry by Machine Learning	0.28	0.28	Running
32	SERB-CRG	Dr. Vishwajeet Mehandia and Dr. Manoranjan as Co-PI	Chemical Engineering	Linear and Non-Linear Bulk Rheology of Cell Monolayer	0.32	0.32	Running
33	SERB	Dr. Nagaraj Anbu under the mentorship of Dr. C.M Nagaraja	Chemistry	National Post-Doctoral Fellowship	0.20	0.20	
34	SERB-SRG	Dr. Ashish Sahani	Biomedical Engineering	Development of an anti-sore bed for neonates	0.24	0.24	Running
35	SERB-MTR	Dr. Sudipta Kumar Sinha	Chemistry	On the General Phenomenon of Dynamic Disorder of Complex Enzymatic Network?	0.07	0.07	Running
36	SERB-SRG	Dr. Rajesh Kumar	Biomedical Engineering	Development of a handheld instrument for in-site identification of "Indian Yellow Dragon"	0.30	0.30	Running
37	SERB-CRG	Dr. Manoranjan Mishra	Mathematics	Computational study of miscible chemo-hydrodynamic instability in a channel and porous medium	0.16	0.16	Running

38	DGRE-CARS	Dr. Muthulingam Subramaniyan	Civil Engineering	Analysis, Design & Optimization of Semi Flexible Snow Suppoting Structures	0.04	0.04	Running
39	SERB-CRG	Dr. Manoranjan Mishra	Mathematics	Computational study of miscible chemo-hydrodynamic instability in a channel and porous medium	0.16	0.16	Running
40	DHI	Dr. Prabhat K. Agnihotri	Mechanical Engineering	Development of Efficient Battery Thermal Management System for Two and Three Wheeler EV application through design of Innovative Packaging Material	1.70	1.70	
41	MIT Global Seed Funds	Dr. Parwinder Singh	Humanities & Social Sciences	A Checklist-based Advisory to Minimize the Cost and Duration of Worse-before-better in Transitioning from Chemical to Organic Smallholder Farming	0.03	0.03	Running
42	DST-CSRI	Dr. Deepti R Bathula	Computer Science Engineering	Understanding Depression-A Machine Learning Approach using Multi-Site, Multi-Modal Image Analysis	0.20	0.20	Running
43	ICSSR	Dr. Rahul T.M	Civil Engineering	Impact of Covid-19 pandemic on travel behaviour of people	0.04	0.04	Running
44	DST-HPC Applications, National Supercomputing Mission (NSM) NSM R&D-HPC	Dr. T. J. Dhilip Kumar	Chemistry	Modeling of Atmospheric Reactions by Quantum Dynamics on the Coupled Potential Energy Surfaces	0.16	0.16	Running

45	SERB-CRG	Dr. Ramjee Repaka with Dr. Naveen Kalra, PGIMER	Mechanical Engineering	Application of Microwave Ablation Technique in Destruction of Large Size Tumors: Numerical and Experimental Studies	0.23	0.23	Running
46	DST-HPC Applications, National Supercomputing Mission (NSM) NSM R&D-HPC	Dr. Nitin Auluck and Rajarajan Ganesan and Goverdhan D Puri, PGIMER Chandigarh	Computer Science Engineering	An Artificial Intelligence based forecasting model for non-linear multivariate biomedical time series	0.16	0.16	
47	SERB-CRG	Dr. Satyam Agarwal (PI) and Dr. Sam Darshi	Electrical Engineering	Enabling Distributed Beamforming via Machine Learning for Energy Efficient Communications	0.46	0.46	Running
48	SERB-CRG	Dr. Kaushik Mondal	Mathematics	Efficient Distributed Computation of Independent and Dominating Sets in Geometric Graphs	0.21	0.21	Running
49	SERB-CRG	Dr. Rakesh Kumar Maurya	Mechanical Engineering	Experimental investigation of toxicity and mutagenicity of particulates, and combustion stability in conventional as well as advanced high- efficiency reciprocating engines using different alternative fuels.	0.30	0.30	Running
50	SERB-CRG	Dr. K. Ramachandra Sekhar (PI) and Dr. Bibhu Prasad Padhy	Electrical Engineering	Implementation of Adaptive Reactive Power Compensation Mechanism for Enhance Power Quality in Weak Grid Connected Solar Inverter under Varying Solar Irradiance	0.32	0.32	Running

51	DST/TDT/WMT	Dr. Atharva Poundarik (PI) and Ajay Puri, Professor and Head of Department (Orthopaedic Oncology) & Head	Biomedical Engineering	Processing of waste placental tissue from maternity wards into regenerative tissue grafts for non-healing wounds and other clinical applications	0.40	0.40	Running
					130.18	**130.18**	

AUGMENTATION OF RESEARCH INFRASTRUCTURE

LIST OF INSTRUMENTS

1. Strain sensors, vibration accelerometers and accessories
2. Specification of semi-automatic weighing balance
3. Zmorph Vx
4. CS165CU1/M - ZeluxTM 1.6 MP Color CMOS Camera
5. Stryler Bone Mill
6. Dehumidifier
7. Rotavapor R-100 SJ29/32, V, 230V
8. EVEREST make peristaltic pump
9. 48V, 150Ah EV Lithium Battery pack
10. Fiber Laser Cutting Head
11. Air Compressor with dryer for laser cutting machine
12. SDR Training Solution
13. ARVINDA BLENDERS
14. Electronic weighing scale for laboratory
15. SM100 Cutting Mill
16. Anga 3D BioPrinter
17. Minimate TFF System (200-240 V AC)
18. Mica sense Red Edge & DJI Drone
19. Air Quality Monitor
20. Solar Power generating and Pump System
21. Oil to Water Heater
22. Prozen-Sonic Mini Resin/SLA 3D Printer
23. 3D scanner with iPad Bracket and lighting cable
24. Duper XL600 3D Printer
25. Polymer Film Making Equipment with SS die
26. Single Photon APDs (Single Photon Counting Module) Accessories
27. Spin Coater
28. Submersible Load Cell
29. Sorvall Legend Micro 21R microcentrifuge
30. Centrifuge Extractor
31. DATA LOGGER SYSTEM
32. HS18.35 Three Gang Bench Type Consolidomere
33. Aspirator Pump
34. Copper Foam Open Cell Cu Foam
35. Oven
36. Laboratory Permeability Apparatus
37. Nitrogen Gas Cylinder and Gas
38. Nitrogen Gas Cylinder and Gas
39. Autoclaves and Liners
40. Indoor Air Quality Monitor and server
41. Spectrometer Model CI-710S
42. High Precison balance
43. Acousto-Optic modulator and driver along with accessories
44. Mechanical Stirrer
45. DPC77S-V0L6-AA2

THRUST AREAS OF RESEARCH

- Water
- Cancer Research
- Environment Issues
- Electrical Vehicle
- Artificial Intelligence and Big Data
- Manufacturing
- Defense
- Energy
- Sensors
- Agriculture
- COVID-19

RESEARCH AWARDS

FACULTY RESEARCH AND INNOVATION AWARD:

Mid-Career Award	Early-Career Award
Dr. Partha Sharathi Dutta	Dr. Subrahmanyam Murala

INTELLECTUAL PROPERTY RIGHT CELL

Intellectual property cell at IIT Ropar strives to support innovators of the institute to patent their invention. A[art from patents, IPR cell also supports, design registration, Integrated circuits, copyrights and all other IP related rights. Backed by experts from different domains as committee members and outstanding staff support, IPR cell has come a long way in the last few years. Currently more than 50 patents are filed with three Indian patents granted, one US patent granted and several MOUs signed, IPR cell has many more patents filing in progress.

IP TYPE	APPLICATION FILED (No.)	GRANTED (No.)
Indian	18	01
USA	0	01

INTELLECTUAL PROPERTY RIGHT WORKSHOP

The Intellectual Property Rights (IPR) cell of Indian Institute of Technology Ropar organizes workshop on IP Technology & Commercialization at IIT Ropar on 12th February 2020. The workshop was majorly sponsored by the Cell for IPR Promotion and Management (CIPAM), Department for Promotion of Industry and Internal Trade (DPIIT), Govt. of India and

supported by Punjab State Council for Science & Technology (PSCST) under Mission Innovate Punjab.

The Workshop aimed to encourage innovators, researchers and start-up community of region to explore converting their innovative ideas/interventions for creating enterprise and promote entrepreneurship. Dr. Javed Agarwal, Dean Research, IIT Ropar addressed the audience during inaugural session. Dr. Prabir Sarkar, Chairman of IPR cell of IIT Ropar intimated about activities of the Cell. Mr. Shubham Istrewal from CIPAM gave detailed insight into Indian IPR Regime and initiatives being taken up by Government of India for IP Commercialization. Dr. Dapinder K. Bakshi, Coordinator, PSCST shared that although Punjab has good scientific infrastructure & scientific pool and is generating IPs, but most of IPs remain unutilized. Other eminent experts included Dr. Maneesh Kashyap, NIPER; Dr. Sukhjinder Singh, CSIR-IHBT; Dr. Suchita Markan, BCIL; Mr. Vinay Mehta, Chitkara University and Ms Divya Kaushik, PSCST also delivered informative talks. The experts shared insights into IP facilitation & management, technology licensing/ transfer, tech-economic viability assessments, business models, best practices, agreements & negotiations. The Director of IIT Ropar Prof. S K Das delivered the concluding talk. About 100 researchers, faculty members, student start-ups & innovators from the adjoining region participated in the workshop.

CAREER DEVELOPMENT & CORPORATE RELATIONS CENTRE (CDCRC)

CORPORATE RELATIONS CELL

The foundation stone of IIT's were laid down to fulfill three primary objectives: (i) to foster high-quality undergraduate and postgraduate studies; (ii) to conduct cutting edge research and; (iii) to assist holistic growth of the Indian industry through the development of state of the art technology. The Corporate Relations Cell at Indian Institute of Technology Ropar has been established to meet the third objective. However, instead of keeping it as an independent entity, the Corporate Relations Cell is part of broader framework of Career Development & Corporate Relations Center (CDCRC) which provides a single-window point of contact to industry fulfilling their entire spectrum of requirements, starting with the human resource to research and development needs.

The Corporate Relations cell team is actively engaged in visiting new companies/ organizations and exploring wide range of opportunities where IIT Ropar can participate.

1. **Memorandum of Understanding and Projects:**
   - Approval of LOI for DGCA proposal on BVLOS projects and project to be initiated in next financial year.
   - A project on usage of AI in patent industry initiated with T&T Consultant and CSE department.

2. **Defense and Armed Forces:** A great amount of focus has been given in past one year on having strong liaising with defence forces of India and to support "Make in India" imitative.

- Society of Indian defence Manufactures (SIDM) has submitted the interest to co-develop center for defence studies for Indian defence manufacturers to boat Make In India in defence sector.
- Naval Innovation & Indigenization Organization (NIIO) - Attended the seminar on special invitation by SIDM was chaired by Union Defence Minister, Government of India & CM of Uttar Pradesh.
- Invited as an expert for evaluation of "Make" Projects by Invest India for 8 projects related to Indian Armed Forces
- Attended interactive session hosted by the Ministry of Micro, Small and Medium Enterprises. Session chaired by Honb. Micro, Minister of Small and Medium Enterprises Mr. Nitin Gadkari.

3. **Faculty and Industry interaction:** Virtual sessions with corporates were organized by CDCRC where faculty representatives from different departments. Following are the names of the companies
   - Alstom
   - GE
   - Honeywell
   - EATON
   - IBM
   - Deloitte

4. **Projects Initiated & Joint Master Thesis Projects:** Following are the projects initiated by different faculty members after liaising with organizations

   - Micron Semi Conductor
   - Qualcomm
   - Intel
   - Dell
   - Cummins
   - Spark Minda

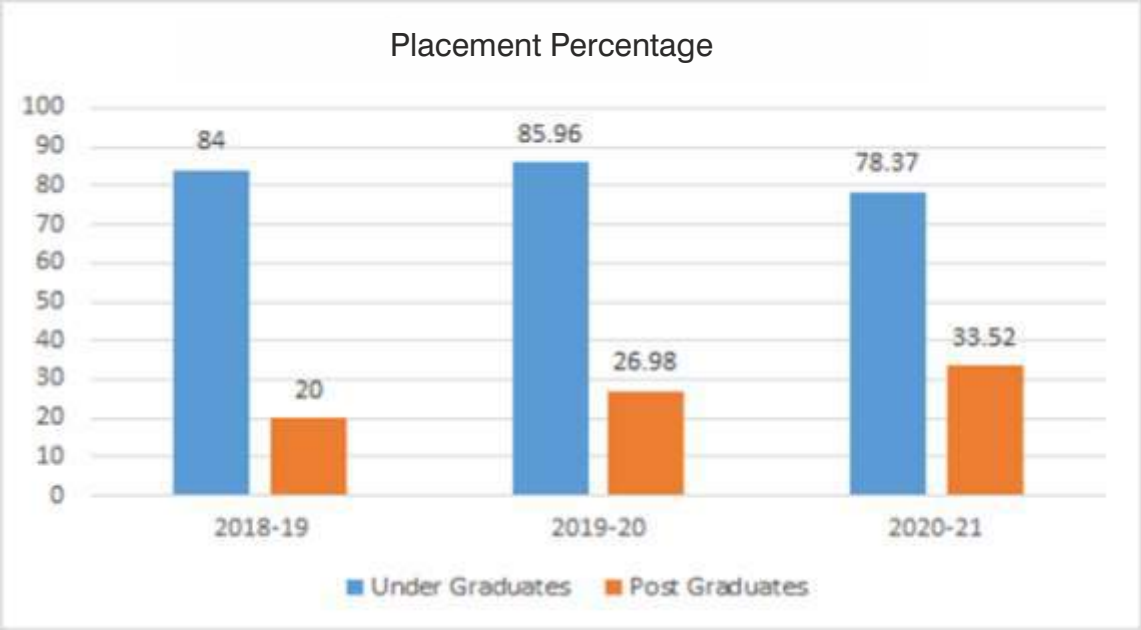
- MediaTek
- TATA Communications
- Strykr
- Ericsson
- GE
- Ubreathe
- Silicon Labs

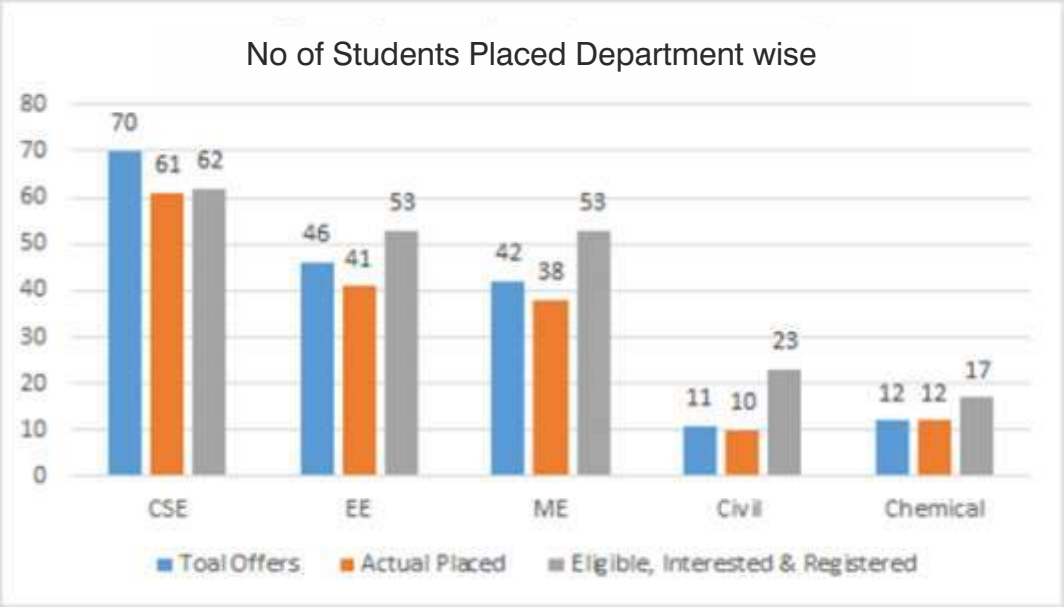
5. **Memberships:** To liaise with industries on national level IIT Ropar has taken membership of prominent industrial bodies
   - Confederation of Indian Industry (CII)
   - FICCI
   - Society of Indian Defence Manufacturers (SIDM)
   - PhD Chamber of Commerce
   - Society of Women Engineers (SWE)

TRAINING & PLACEMENT CELL

The placement results during September 2020 to May 2021 at IIT Ropar has been very encouraging. A good and encouraging response from the industry was seen for the campus recruitment process as a result of which 78.37% of our students were placed. 98.4 % of the Computer Science students, 79.25% of Electrical Engineering students, 71.70 % of the Mechanical Engineering students, and 43.5% of Civil Engineering students, 70.59% of Chemical Engineering students have been offered positions in core-technical, consultancy and IT companies. An average package of over 14.9 lakhs per annum was offered to students this year. Some of the premier companies where our students (2021 graduating batch) got placed are:

Microsoft, Nutanix, Goldman Sachs, DE Shaw, Flipkart, Commvault, Arista Networks, Saavn, Amazon, Land Rover - Jaguar, Zomato, GE Healthcare, Accenture, Signal Chip, Silicon Labs, Tata Consultancy Services, L&T Infotech, L&T Limited, Truminds, Chegg.com, Wipro, Nokia, Truechip,General Electric, Swiggy, Aecelor Mittal & Nippon Steel, Vedantu, Contata, Rural Electrification Corporation Limited, MAQ Software, Ernst and Young, IOL Chemical, Satellite Technologies, Broadridge, TATA Power, Honeywell, Unilarc Solar, Maruti Suzuki, Becton Dickison Etc.





A good number of internship opportunities were also offered to the students this year. Some of the premier companies/institutes that have offered summer internships to our students (2020 graduating batch) are:

Microsoft, Nutanix, Goldman Sachs, DE Shaw, Amazon, Arista Networks, GE Healthcare, Topline Co. Ltd. (Japan), Future First, OYO Rooms, Hero Cycles, MAQ Software, Flipkart, Monash University (Australia), Toronto Rehabilitation Institute (Canada), American University of Sharjah (UAE), Strota, Grazitti Interactive, Indian Institute of Technology Bombay, Indian Institute of Technology BHU, Ketto, Power Grid Corporation of India, Altair Engineering, Gemini Solutions, Indian Institute of Technology Mandi, Texas Instruments, Indian Institute of Technology Patna, Tevatron Technologies, MSCI Inc., FindMe Mentor, Toppr, Adapt Flex, IRage Capital, Indian Institute of Science Bangalore, Treebo Hotels, Tathya. Earth Etc.

PROFESSIONAL DEVELOPMENT

The Professional Development function at the Career Development and Corporate Relations Centre (CDCRC) reoriented its activities owing to the COVID19 Pandemic, which helped students connect with industry, and gain information on various career options.

a) As a part of Professional Development Cell the following activities were conducted:

The following talks were conducted:

1. Bridging Students with Industry - Dhruv Vyas, Arcelor Mittal September 14, 2020
2. Academic career opportunities in Germany, September 24, 2020
3. Career opportunities and scope in Steel/Metallurgical Industries, Dr. Siddhartha Misra, TATA Steel, October 17, 2020
4. LinkedIn and Resume Session - "Bridging Students with Industry" Initiative - Satyam Chauhan, Shell, October 17, 2020
5. Higher Education Opportunities in France: Webinar organized by Campus France, October 28, 2020
6. Student Interaction Session with Ms. Ilma Afroz (IPS 2018), November 22, 2020
7. Industry led sessions by ANSYS, COMSOL on CFD
8. Industry led talks by Bechtel India (Chemical Engineering and Civil Engineering), Ramboll (Civil Engineering)

b) Society of Women Engineers: IIT Ropar has an active Society of Women Engineers Chapter which is supported by the Career Development and Corporate Relations Centre. Under the chapter the following events were organized:

From January 28-31, 2021 a team of SWE IIT Ropar Students organized the SWE India Women in Engineering Conference (organized by SWE IIT Ropar Affiliate in collaboration with SWE India) wherein speakers and panelists from IBM, Intel, Dow, Cummins, American Express, McGraw Hill, SAGE Glass (Saint Gobain) , Ford , ANSYS and from leading US Universities (University of Chicago, University of Buffalo, University of Florida – Gainesville).

The following sessions were also conducted:

9. "Overcoming Job Search Challenges in 2020". - Ms. Rinita Laskar (Director HR, Emerson India) and Ms. Riya Thakkar (Functional Safety Manager, Mahindra Electric)
10. "Life Lessons on Leadership and Resilience from Women Leaders" on October 18, 2020 by Ms. Ritika Singh , Kontent Factory and Ms. Shivani Mukherjee, Rapyd
11. Fingerprinting your own STEM journey (Dr. Deepali Palta, Head- West Europe Snacks Portfolio, Pepsico-Research and Development):November 18, 2020
12. Virtual Interaction with Ms. Farnoosh Brock, CEO & Founder | Speaker | Author x4 | Business Coach | Career Coach, Company NameProlific Living Inc. December 22, 2020
13. SWE IIT Ropar Webinar-Anshuma Singh (Deputy Director, IT Applied Materials) | Digital Transformation – Future Proofing Yourself, December 2020
14. Dr. Shweta Khandelwal, Head, Nutrition Research at the Public Health Foundation of India (PHFI), Delhi, March 24, 2021
15. Dr. Shirish Paripatyadar, Retired from Shell Global Solutions has conducted numerous sessions to help students from diverse backgrounds.

c) Test Series in collaboration with Testbook (February 2021), Student-led Training Session on Google Analytics (July 2020); Tableau (August 2020)

INVITED TALKS

1. Dr. Asad Sahir gave a talk at the India Research Management Initiative Conference"A conceptual framework for research scholars towards developing future research managers" organized by DBT Wellcome India Trust in February 2021.
2. Dr. Asad Sahir and Mr. Subodh Sharma gave a talk at the SWE Leadership Competency Model: A Perspective from India at the SWE We Local India Conference 2021.
3. Dr. Asad Sahir participated in the Industrial Motivation Campaign for Toys Cluster at Dhanaula (Punjab): February 2021
4. Dr. Asad Sahir delivered the expert lecture on "Developing and Sustaining High Performance Work teams" May 22, 2020 at the National Level Short Term Course on Leadership and teamwork for performance excellence organized by NIITR Chandigarh.
5. Dr. Asad Sahir was invited by Allatra TV, Mind Sparkle Series and Misaal for Online Interviews and YouTube Sessions.

ALUMNI TALKS

The following alumni participated in helping IIT Ropar students during the pandemic for whom CDCRC is grateful

Alumni helping with Core Industry Sessions.

Name	Pass Out Year	Company
Rishabh Goel	Mechanical 2019	ISRO
Pranit	Mechanical 2019	Maruti
Mayank	Mechanical 2019	1mg
Kushal Singhal	Electrical 2019	Huawei

Alumni helping with sessions on Product Management:

Name	Batch	Current organization	Topic
Shashank Sah	2012	Flipkart	Product Management
Abhishek Ghosh	2013	Oyo	Product Management
Nitin Singhal	2012	Walmart Labs	Product Management
Shashank Sah	2012	Flipkart	Product Management
Akshat Jain	2017	American Express	Tableau

Alumni Helping with Interview Preparation:

Name	Batch	Current organization
Akash Bhardwaj	2020	LTHE
Arjun Menon	2020	Truechip Solutions
Soumya Singh	2020	Dell Technologies

Alumni helping with sessions on future education options:

Name	Batch	Current organization (Ph.D.)
Vijay Kumar	2020	University of Regina, Canada
Shriya Gumber	2020	IIT Delhi
Sandeep Mishra	2020	IIT Kharagpur

Alumni Virtual Interactions:

Name	Batch	Current Organisation
Vikas Aggarwal	2012	Cadence
Namit Pandey	2014	Airbus
Somyanshu Arora	2014	JP Morgan
Jitin Madhu	2017	Myntra Jabong
Anuj Jain	2013	Sprinklr
Kaustubh Bijalwan	2012	Swiggy
Riya Garg	2016	Walmart Labs
Pulkit Gera	2015	Adobe
Paras Ahuja	2016	Jio

TECHNOLOGY BUSINESS INCUBATOR FOUNDATION

Bolstering the nation's entrepreneurial and start-up ecosystem is the need of the hour, in order to achieve the vision of "AtmaNirbharBharat". Aligning with the goal, IIT Ropar - Technology Business Incubator Foundation (IITR-TBIF) has been set up, which is an independent Section-8 Not-for-profit Company of the institute. This incubator is being funded by the Department of Science & Technology (DST), New Delhi. This incubator is an umbrella programme for nurturing ideas and innovations (knowledge-based and technology-driven) into successful start-ups. It was formed in 2016 to host Technology Business Incubator (TBI) under NIDHI TBI Scheme of Department of Science & Technology, Government of India.

It is housed within the Administration Block of the institute with a floor area of 10,000 sq. feet. The incubator has its own Board of Directors with Prof. Rajeev Ahuja (Director-IIT Ropar) as the Chairman. Prof. Harpreet Singh (Dean, ICSR-II) is the Coordinator & one of the directors of TBIF. Dr. Ashish Sahani is the Faculty- In-charge of TBIF and heads the day to day operations of the organization. There is a full-time Incubation manager who operates as the Chief Executive Officer of the Incubator.

SOFT LOAN CATEGORY

Sr. No.	Name of Startup Company	Concept of Startup	Soft Loan/Seed Grant Given
1	Dron Digital Services Pvt. Ltd.	ERP Solution, Rolled out in market	Rs. 11.79 Lakh against their demand of Rs. 16.15 Lakh. This company has returned their first soft loan of Rs. 1.45 Lakh.
2	Augniscient Pvt. Ltd.	Sophisticated Helmet Device based on AR- VR Concept, designed for Indian Armed Forces.	Rs. 10 Lakh, against their requirement off Rs. 13.70 Lakh.
3	Vafo Layovers Pvt. Ltd	Short Stay Rental during Vacation	Rs. 3.5 Lakh against their demand of Rs. 11.98 Lakh.
4	ScratchNest Pvt. Ltd	RFID Technology	Rs. 18.07 lakh against their demand of Rs. 18.07 Lakh.
5	Yoboshu Pvt. Ltd.	Nutrition and Healthcare	Rs. 10.39 Lakh against their demand of Rs. 15.37 Lakh.
6	Logier Technologies Pvt. Ltd.	Earn on the Way	Rs. 4 Lakh against their demand of Rs. 4 Lakh.
7	Dakters Software Consulting Private Limited	Personalized Healthcare	Rs. 4.70 Lakh against their demand of Rs. 14.10 Lakh.

SEED GRANT CATEGORY

Sr. No.	Name of Startup Company	Concept of Startup	Seed Grant Given
1	Wevixit Pvt. Ltd.	Envopads	1 Lakh
2	Snizzr Technologies Pvt. Ltd.	Social Media Platform related to Poetry	1 Lakh

OFFICE SPACE & FACILITIES CATEGORY

Sr. No.	Name of Startup Company	Concept of Startup	Office Space & Facilities
1	Curartors Pvt. Ltd.	Chitr - cart	Co-Working Space and Mentorship
2	Enterainer Health Pvt. Ltd.	ML based application for fitness etc.	Co-Working Space and Mentorship
3	Epilepto Systems private Ltd	A wearable device for Epileptic Seizure Detection	Co-Working Space and Mentorship
4	Shinaizel Pvt. Ltd.	Personal cooling device in the form of body cooling jacket	Co-Working Space and Mentorship

IDEA PITCHING CATEGORY

Sr. No.	Name of Startup/ Company	Idea Concept / Submitted by	Present Stage
1	Meal Bell Pvt. Ltd	Mum'z Choice aims at serving hygienically prepared nutritious and flavorful food to kindergartens by Savneet Kaur & Ritish Garg	Idea pitching session completed. Company incorporation under process.
2	Makris Pvt. Ltd.	The Ultimate Education Management System/ERP by Madhav Anand & Mehak Anand	Idea pitching session completed. Company incorporation under process.
3	Vanix Technologies Pvt. Ltd.	CHEF – MP by Muddasani Satyanarayana & Ashwani Rana	Idea pitching session completed. Company incorporation under process.
4	Yet to Incorporate	Padhakku by Palak Jain, Jatin Batra	Idea pitching session completed. Company incorporation under process.

The main objectives of this Incubator are as under:

- To evolve into the best Business Incubator in the Punjab region.
- To streamline the incubation processes in a way a rate of high growth is sustainable YOY.
- To drastically minimize turnaround times for inducting new start-ups and charting a high-sustainable growth trajectory for them through best possible mentor support.
- To provide low-risk capital to startups. Incubator to also absorb risk through appropriate channeling of government funds.
- To minimize the bureaucratic hurdles for startups, by providing support for all government and legal compliances. Hence allowing for Start-ups to focus primarily on product and business development.
- To build facilities to such a degree that entrepreneurs incubated with us do not have to spend on procuring equipment and building facilities. They should spend most of the seed funds only for manpower and consumables. We aim to meet their every other need.

Core competences of the Incubator (Thrust areas of the Incubator)

- IT and IT-enabled Services
- Manufacturing
- Healthcare Technologies
- Clean Energy

MAJOR ACHIEVEMENTS OF TBIF

1. Received Rs 5Cr as Grant under Nidhi – TBI scheme from DST.
2. Five Start-up initiatives are being groomed under "Lunchpad- I", program for incubation.
3. The Second edition, "Launchpad – II" is being undertaken to groom 5 more initiatives.
4. Three companies have been selected under Digital Startup program initiative.
5. **First Women Entrepreneur of IIT Ropar:** The start-up "Yoboshu Pvt. Ltd., has been founded by Ms Shivanshi Verma, UG student of Mechanical Engineering branch. She is the first woman entrepreneur of IIT Ropar.

6. **Young Achievers Award:** Two start-up companies - Yoboshu Private Limited & ScratchNest Private Limited have been awarded "Young Achievers award" by Rotary International's Rupnagar chapter, on the International Youth Day, January, 2020.

7. **Young Entrepreneur of the Region:** Mr. Amit Bhati, Director & Founder of ScratchNest Private Limited has been awarded the Young Entrepreneur of the region award by STPI Mohali during TiECon 2020, held at ISB Mohali.

8. **Seed Grant of Rs. 3 Lakh by Startup Punjab:** Our startup Augniscient Private Limited has been recognized by Punjab Startup Cell for seed grant of Rs 3 lakh during TiECon 2020, held at ISB Mohali.

9. **Entrepreneurship Cell (E-Cell)** of IIT Ropar has been reconstituted and reinforced by IIT Ropar TBIF. E-Cell is a strong workforce having 65 members as its volunteers. These volunteers are doing wonderful job in creating an atmosphere for entrepreneurship and startup activities. Campus Hackathon, Workshops on design thinking, ideation, Problem Solving, idea pitching sessions, Angel investors meet, Venture capitalists meet organized by E-Cell during Advitiya and other events of IIT Ropar to sensitize the student community for adopting entrepreneurship as a career.

10. **Institutional Innovation Council (IIC) –** IIT Ropar TBI has established institutional innovation council (IIC) - an imitative of MHRD, Govt. of India to systematically foster the culture of Innovation amongst all Higher Education Institutions (HEIs). MHRD has notified to start minor course on entrepreneurship in all IITs. Senate of IIT Ropar has approved to start this course in the campus and we will start this course from July 2020. This initiative will definitely enhance the scope for entrepreneurship and startups among student community of IIT Ropar.

11. **Atal Ranking of Institutes on Innovation Activities (ARIIA) -** IIT Ropar TBIF is actively implementing activities of ARIIA, another initiative of MHRD in the campus resululting inclination of students towards entrepreneurship & startup activities.

REGULAR ACTIVITIES OF TBIF

(1) Under the Reservoir of Knowledge (talk series) following events organised:

(A) Dos and Don'ts" for startups: by Harit Mohan, CEO of Signicient, an IIT Madras Alumnus.
(B) "How to incorporate a company" by CA Abhinav Oberoi.
(C) Intellectual Property Rights for startups by Harit Mohan.
(D) Cyber Security & ethical Hacking by IPS Ravi Kumar.
(E) "Journey of an Entrepreneur" Edition 1 by Mr. Hans Germeraad from PUM Netherlands.
(F) Journey of Entrepreneur - Edition 2 by Mr Ajay Gupta, Founder HHK Foundation New Delhi.

(2) Visits & Participations

(A) Startup Master Class of IIT Kanpur Alumni at New Delhi.
(B) E-Leaders Workshop by Wadhwani Foundation at New Delhi.
(C) Wadhwani Foundation Workshop on start club activities at New Delhi.
(D) E-Summit IIT Bombay.
(E) E- Summit IIT Roorkee.

(3) Miscellaneous: In association with E-Cell, TBIF first time organized an interaction with new students of 2019 batch under ISMP.

Value added services offered by the Incubator to its incubatee startups:

S.no	Type of support	Details
1.	Mentoring Support	• Large mentor pool • Funded mentorship of upto 4 hours per month. We pay the mentors Rs. 2000 per hour. • Links to Mentors through TiE Chandigarh
2.	Technical Support	• Access to High performance server in-house • Access to Cloud computing service from Google and Amazon on reimbursement basis. • Access to Electronic Manufacturing and Testing facility • Access to Wet Lab • Access to 3D Printing and product prototyping
3.	Financial Support	• Funding in form of Seed grants up to Rs. 4.5 lakhs • Funding in form of Soft loans up to Rs. 20 Lakhs • Financial compliance support through affiliated CA/CS
4.	Legal and IPR Support	• Services of affiliated corporate lawyers are available from Talwar Advocates, Chandigarh at pre-negotiated subsidized rates. • Services of patenting are available from affiliated patent lawyers from FITT, IIT Delhi at pre-negotiated and subsidized rates. • We also provide end-to-end IPR filing support against equity.
5.	Networking Support	• Talks by eminent Entrepreneurs and VCs every month. • During monthly evaluation, key weaknesses and requirements of startups are identified and Mentors are identified and connected on a rolling basis.
6.	Staffing Support	• Connect affiliated startups with Placement cell of IIT Ropar to identify interns from academic programs of IIT Ropar.
7.	Co-working Space support	• Very low-cost Co-working spaces, private office spaces and semi-private office spaces are available. • The corporate offices of TBIF are under construction. Architectural design has been completed, tendering is pending.
8.	Marketing and Promotion support	• Subsidised graphic design support provided to startups through affiliated Graphic designer. • Twitter, Linkedin and Instagram engagement with posts of our startups and sharing them on our own handles. • Non-tech startups are provided with facility for creating a basic website under our website itself without spending money on domain name and hosting.
9.	Internal monitoring mechanism for startups	• Weekly evaluation cum mentoring meeting with one startup per week in a round robin fashion. • Re-evaluation of progress before release of every tranche of a grant/loan.

10.	Other support	• Full-fledged, entrepreneurship library with a large number of physical and digital books on entrepreneurship and business. Subscription to Harvard Business Review, Amazon Audible and Coursera. • Subscription to Autocad and Microsoft Office. • B/W and Colour printing facility on a central printer. • Full-fledged conference room facility. • Dry-pantry service with unlimited Tea and Coffee through vending machine, Refrigerator and microwave oven.

MEMORANDUM OF UNDERSTANDING

To train our Start-ups at par with world level standard of Entrepreneurship and Start-up Eco System, we have 7 strategic tie-ups/MoUs with National and International organizations as under:

1. IIT Ropar TBIF has signed a MoU with World Startup Factory (www.worldstartupfactory.com), based at Netherlands, for connecting mentors & experts to the startups of each other's initiative, promotion of events of both the parties, exchange program & co-organising events.
2. To equip our students on entrepreneurial knowledge, startup & incubation related activities at par with international standards, IIT Ropar TBI has associated with PUM – A Netherlands based organization to train our incubatee's. Mr. Hans Germarred, senior expert from PUM visited IIT Ropar on 14 days visit (from 9th September to 21st September) under the first phase of this association.
3. IIT Ropar TBIF has signed a MoU with IDEA Innovation Centre in Nicosia (Cyprus) for exchange of startups, exchange of expertise & visits & exchange of information on the two ecosystems respectively.
4. IIT Ropar TBIF has signed a Memorandum of Understanding (MoU) on September 20th, 2019 with the Startup Cell of Punjab Government. Under this MoU database of 112 students (who reached in the grand finale of recently concluded Startup Punjab Yatra) has been shared with TBIF. **46 technology based idea's has been identified, to whom mentorship/seed grant will be given by IIT Ropar TBIF in the first phase.**
5. IIT Ropar TBI have signed an MOU with Wadhwani Foundation (WF) – A Bengaluru based organization, fully engaged in entrepreneurship, Startup activities & skilling of students interested to do startups @ TBI. Under this MOU, a startup club has been established here. Apart from it, as a pilot project course on entrepreneurship (basic and advance) will be introduced from July 2020, which will increase the count of students interested in startup activities.
6. IIT Ropar TBIF and HDFC Bank Ltd. have signed a MoU to solve Tech. related problems of HDFC Bank.
7. IIT Ropar TBIF, PGIMER and Indian Council of Medical Research have signed MoU for exchange of startups, exchange of expertise, exchange of information and to provide mentorship to the incubatees of respective organizations.
8. IIT Ropar TBIF and iHub- AWaDH(Agriculture and Water Technology Development Hub) , established at IIT Ropar by DST , Govt. of India have signed MoU to jointly tap innovations and Technologies for venture creation by utilizing expertise and infrastructure available with both the companies in mutually beneficial areas.

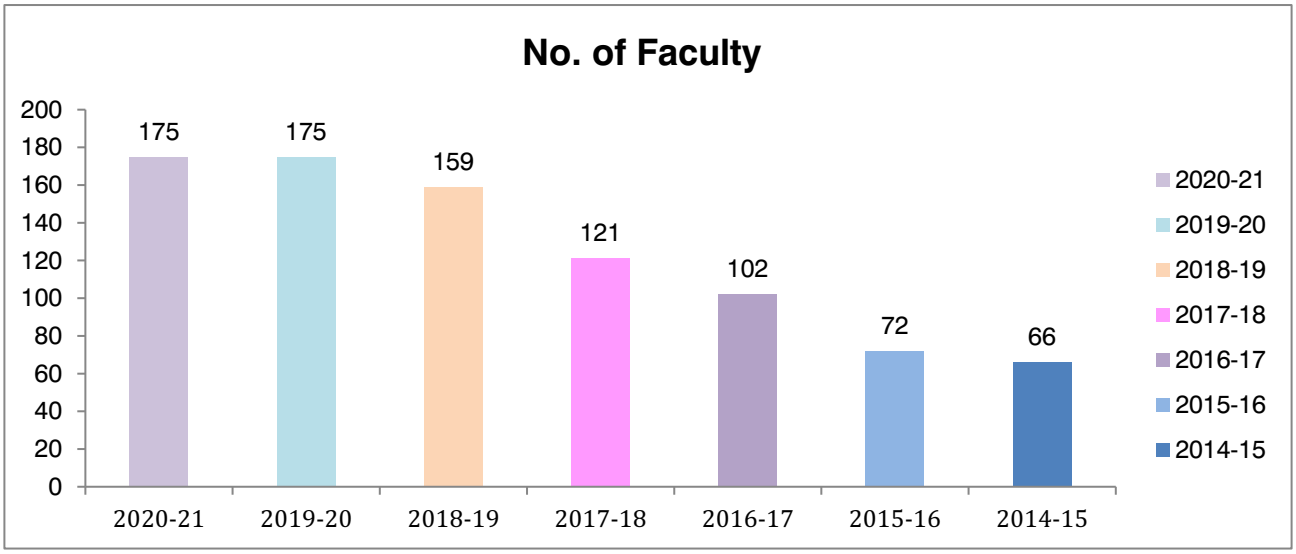
9. IIT Ropar TBIF and YES BANK Ltd. have signed a MoU to nurture innovation & entrepreneurship which would further help in the economic growth and create a collaborative platform for various stakeholders to evolve as a vibrant start-up ecosystem that actively contributes to the nation's economic goals.

NODAL AGENCY

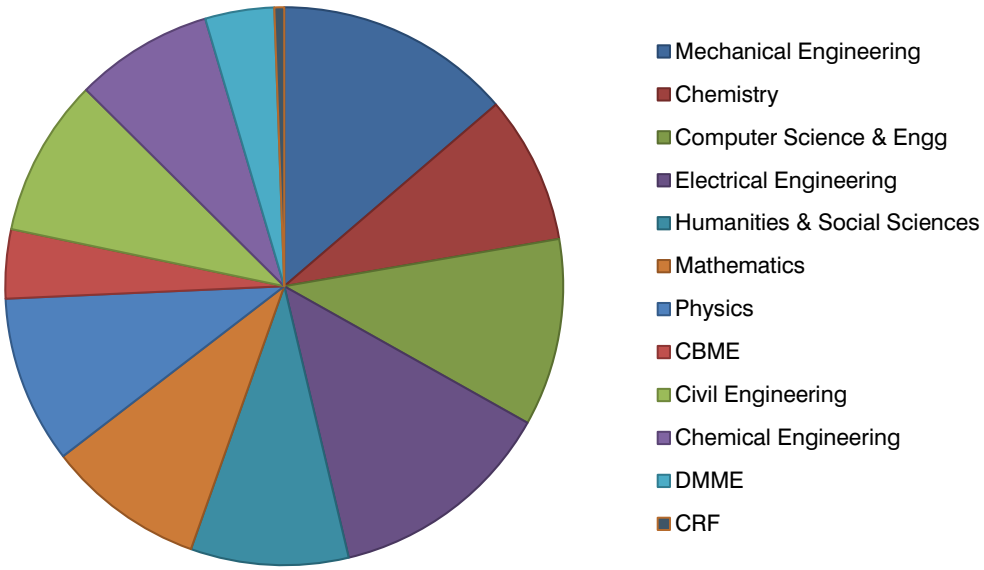
Department of Industry and Commerce, Govt. of Punjab has notified IIT Ropar TBIF as a Nodal Agency for evaluating the startup applications received by them and to release the seed funding to selected applicants through TBIF.

FACULTY & STAFF

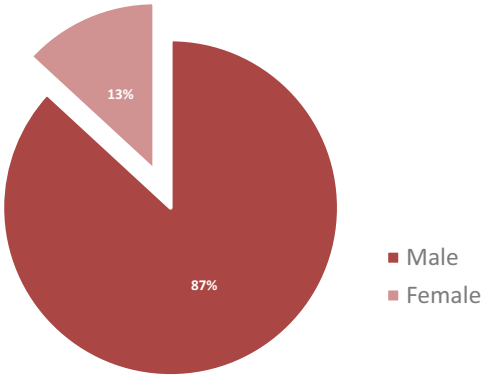
YEAR WISE TOTAL NUMBER OF FACULTY



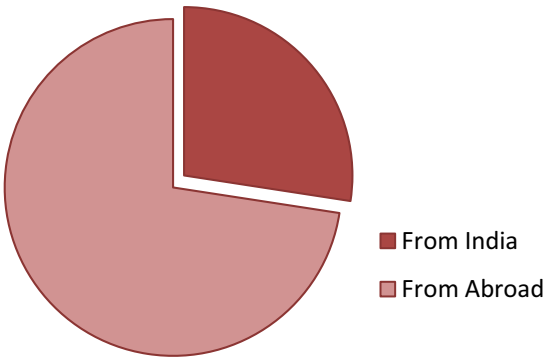
DEPARTMENT WISE FACULTY DISTRIBUTION 2020-21



GENDER WISE FACULTY 2020-21



Ph.D OF FACULTY MEMBERS 2020-21



FACULTY STATISTICS

IN POSITION -FACULTY & STAFF

Faculty	Visiting Faculty	Professor In Charge	Group A	Technical Staff	Administrative Staff
168	6	1	11	41	57

APPOINTED DURING 2020-21 (FACULTY & STAFF)

Faculty	Visiting Faculty	Group A	Technical Staff	Administrative Staff
3	Nil	Nil	1	Nil

APPOINTED DURING 2020-21 (FACULTY)

Id No.	Name	Designation	Department	Joining Date
10194	Dr. Arghya Banerjee	Assistant Professor	Chemical Engineering	30.07.2020
10195	Dr. Navaneeth K Marath	Assistant Professor	Mechanical Engineering	30.07.2020
10196	Dr. Bodhisatwa Das	Assistant Professor	Biomedical Engineering	05.08.2020

RESIGNED OR RELIEVED FACULTY DURING 2020-21

ID No.	Name	Designation	Department	Date Of Relieving
10193	Dr. Debdeep Sarkar	Assistant Professor	Electrical Engineering	23.07.2020
10122	Dr. Somitra Sanadhya	Associate Professor	Computer Science & Engg.	16.11.2020
20037	Prof. Ishwar Singh	Visiting Professor	Physics	25.01.2021

EXTRAORDINARY LEAVE / DEPUTATION / SABBATICAL (FACULTY)

Name	Designation	Department	Date	Nature of leave
Dr. Abhinav Dhall	Assistant Professor	CSE	01.06.2019 – 30.06.2021	Extra Ordinary Leave
Dr. Chittaranjan Mishra	Assistant Professor	Mathematics	11.04.2019 – 31.12.2020	Extra Ordinary Leave
Dr. S.R. Sudarshan	Associate Professor	CSE	01.01.2021 – 31.12.2021	Sabbatical Leave

DEPUTATION (STAFF)

Name	Designation	Joining Date	Deputation From
Sh. Ravinder Kumar	Joint Registrar	16.09.2020	SLIET Longowal

DEPUTATION (STAFF)

S.no.	Employee Code	Name	Designation	Category	Group (A,B,C)	Department	Date of Joining
1	30153	Sh. Mohit	Junior Lab Assistant	PWD	C	Physics	31.07.2020

STAFF RELIEVED/LEFT DURING 2020-21

S.no.	Employee Code	Names	Designation	Department	Date of Leaving
1	30112	Sh. Sangoju Sandeep	Junior Lab Assistant	Department of Metallurgical and Materials Engineering	26.10.2020
2	30117	Sh. Harmeet Singh Dhillon	Junior Lab Assistant	Department of Metallurgical and Materials Engineering	18.12.2020
3	30099	Sh. Vijay Narayan	Junior Superintendent	Academics	31.12.2020
4	30116	Sh. Arpit Gupta	Junior Lab Assistant	Civil Engineering	15.01.2021
5	30092	Sh. Tanveer Singh	Junior Lab Assistant	Chemistry	31.03.2021

INTERNATIONAL RELATIONS

ADMISSION OF INTERNATIONAL STUDENTS

This year, we received applications of international students from Bangladesh, Jordan, Ethiopia, Philippines, Myanmar, Nepal, South Korea, Iran, Morocco, Yemen etc. 7 students have been enrolled for year 2020 in the Masters Programme. With this, the total number of international students on campus stands at 9.

MoU SIGNING

IIT Ropar has entered into MoUs with renowned universities of the world like University of Bristol, Academia Sinica, Taiwan Network n+1 Engineering Institutes, France and Carleton University, Canada. The main objective of these MoUs is to promote academic cooperation in the following areas- Faculty exchange, Student exchange, Joint research projects, Exchange of scientific and teaching materials and Joint Conferences/Workshops/lectures. Our internationalization efforts have yielded rich dividends.

JOINT PhD WITH NATIONAL CHUNG CHENG UNIVERSITY, TAIWAN AND INTERNSHIP

IIT Ropar entered in joint Ph.D programme with National Chung Cheng University, Taiwan. In addition to this, our 5 students have been selected under the prestigious Newton Bhabha fellowship.

JOINT LECTURES

IIT Ropar conducted a joint lecture with The State University of New York,
Binghamton on the occasion of the 150th birth anniversary of Mahatma Gandhi. The purpose of this exercise was to allow Gandhian thoughts and philosophy to be widely disseminated in contemporary times.

DAAD FELLOWSHIP

Dr. Rohit Sharma, Associate Dean, International Relations has been awarded the DAAD fellowship on Management of Internalization 2020-21. This is a joint fellowship by the German Academic Exchange Service and Leibniz University, Hannover. Under this fellowship, he will be working on a proposal titled Augmenting international academic activities in the wake of COVID19 for a total duration of 1.5 yrs.

PROJECTS IN COLLABORATION WITH MIT, USA

Three projects led by Dr. Parwinder Singh, Assistant Professor, Department of Humanities and Social Sciences, Dr. Reet Kamal Tiwari, Assistant Professor, Department of Civil Engineering and Dr. Rajesh Kumar, Assistant Professor, Centre for Biomedical Engineering, IIT Ropar have been approved under the MISTI Global Seed Funds umbrella of MIT USA.

In addition, IIT Ropar is working on 17 bilateral projects and the total amount sanctioned for these projects is 9.04 Crores including the first of its kind bilateral Centre on Artificial Intelligence and Machine Learning in collaboration with National Chung Cheng University, Taiwan.

SPRING 2021 JOINT WEBINAR SERIES BY BINGHAMTON UNIVERSITY AND IIT ROPAR

1. Webinar on Smart Energy and Systems

The webinar was inaugurated by Prof. M. Stanley Whittingham, a distinguished Speaker of the 2019 Nobel Prize in Chemistry. Dr. Rohit Sharma, Associate Dean, IIT Ropar and Prof. Mark D Poliks, Professor & Director, Systems Science and Industrial Engineering, SUNY Binghamton, USA were the convenors of the webinar. This webinar series continued for next few months in which faculty members from IIT Ropar and SUNY Binghamton delivered the joint lectures on different topics.

EVENTS & ACTIVITIES

ADVITIYA 2020

Advitiya 2020, IIT Ropar's tech-fest concluded with a bang with a guest lecture by Dr. K Radhakrishnan, the Former Chairman of ISRO. He comprehensively spoke about the success story of ISRO and all the advancements from the recent space missions, mainly about Chandrayaan and Mangalyaan. Dr. K. Radhakrishnan's presentation about ISRO was quite enlightening about the challenges faced by the scientists back at ISRO. The audience voiced out several questions related to the ongoing research and the entire lecture has been successful in sparking off an interest for the young impressionable minds to consider a career at ISRO.

2 MONTH COURSE ON SOLID WASTE MANAGEMENT

IIT Ropar successfully organized a short duration course of two months under Green Skill Development Programme (GSDP) for Solid Waste Management in close association with Punjab State Council of Science & Technology which was sponsored by the Ministry of Environment, Forest & Climate Change, GoI. This course has been launched to enhance the skilled workforce/manpower in the areas related to the environment conservation/ preservation especially at field level and restoring environmental quality for a sustainable future. For this course, 15 students with different backgrounds and origins have been enrolled and were actively engaged in lively discussions and Green Skill development projects.

IIT ROPAR TO SET UP HUB FOR AGRICULTURE AND WATER TECHNOLOGIES

In a first of its kind initiative, IIT Ropar is setting up Sectoral Application Hub to bring the solutions for stubble management, water quality improvement, mapping of hazardous substances in water/soil and their treatment, deployment of IoT based Cyber-Physical System (CPS) technologies in farming fields. Being in the agrarian state, a major mandate of IIT Ropar has been to take up research aimed at addressing Water-Agriculture related issues and to support this vision. The hub is aimed to carry out translational research and work with Line Departments to develop prototypes, products, and implementations. The hub will create a platform for technologies and applications in Agriculture & Water.

IIT ROPAR SIGNED AN MoU WITH AICTE

In yet another step towards empowering the youth beyond its campus and own students, IIT Ropar has joined hands with All India Council for Technical Education (AICTE) in the auspicious presence of Union Minister for Human Resource Development, Ramesh Pokhriyal, 'Nishank', for extending internships to 100 meritorious students from Jammu and Kashmir, studying in AICTE approved institutions across the country under Prime Minister's Special Scholarship Scheme. Under this MoU, IIT Ropar will enroll 100 meritorious students from Jammu and Kashmir, for internship at its own campus. The objective of the MoU is to provide an exposure to the youth from Jammu and Kashmir to the academic culture at National Institute of importance. IIT Ropar is passionate to implement such initiatives.

FIT INDIA MOVEMENT INITIATIVE

Under Fit India Movement initiative by the Government of India, IIT Ropar, ODAC club and Fitness Club organized a "Family Throwball Competition."

UNITED SPORTS EVENT FOR CHILDREN WITH & WITHOUT INTELLECTUAL DISABILITIES

Pehchaan Ek Safar an NGO at IIT Ropar in collaboration with Special Olympics participants from Ambuja Manovikas Kendra, Ropar conducted a united sports event (Athletics, Football & Bocce) for children with & without Intellectual Disabilities.

71ST REPUBLIC DAY

The 71st Republic Day at IIT Ropar celebrated with great patriotic fervour. Pehchaan-Ek Safar (NGO, IIT Ropar) presented the realistically crafted Ashoka Chakra made entirely from waste metal and paper collected during Swachh Bharat Abhiyan.

IIT ROPAR PERMANENT CAMPUS DEDICATED TO THE NATION

Union Education Minister Shri Ramesh Pokhriyal 'Nishank' dedicated permanent campus of IIT Ropar to the nation on 22nd October 2020. Minister of State for Education, Shri Sanjay Dhotre also graced the occasion. Prof. Sarit K Das, Director, IIT Ropar and Shri Ravinder Kumar, Registrar, IIT Ropar and the other dignitaries also participated in the event.

Shri Pokhriyal highlighted that IIT Ropar has featured consistently among the top-ranking educational institutions in the country and abroad. IIT Ropar has shared the top place in India after IISc Bangalore with its position in the 351-400 rank in Times Higher Education World University Rankings 2021, he added. He further highlighted that IIT Ropar has been ranked as number one in the world in research citations. In NIRF, IIT Ropar stood 25th in all India Engineering institutional ranking 2019-20. In QS India Rankings 2020 with an overall rank of 25th in India, IIT Ropar is ahead of all IITs in research quality, scoring highest in Citations per Paper, he added.

The Minister appreciated the initiatives taken by IIT Ropar during Covid-19 crisis. He informed that the technologies include Negative Pressure Room to prevent the transmission of COVID-19 through air at isolation wards and testing labs, thus protecting the medical staff from getting infected. Negative Pressure Ambulance was also conceptualised to carry infected people without posing the threat to the health workers, serving them in the ambulance. He further informed that a unique UVGI based Room Disinfection Device, UVSAFE is founded in IIT Ropar. The unique patented design ensures zero-shadow 360 degree disinfection and is being in use at IPL, Dubai. Two state-of-the art low cost autonomous vehicles, “Medi-Sarathi' and “AI-Powered Trolley” for COVID patients with an intent to minimize healthcare workers' contact with infected patients and contaminated surroundings, he added.The Minister applauded the initiatives taken by IIT Ropar towards "Make in India" initiative through a consistent focus on innovation and research.

Shri Sanjay Dhotre shared that, “IITs are recognised worldwide as premier institutes of academic excellence. He also stated that the Ministry is working towards increasing the perception of IITs so that IITs are ranked top in world rankings.”

Shri Dhotre applauded the recent grant received by IIT Ropar of Rs 110 Crore from DST to set up "Technology Innovation Hub (TIH) in the domain of Agriculture & Water. Pioneering and unique, this setup is part of the framework of National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS).

Prof. Sarit K Das, Director, IIT Ropar shared the success story of the Institute with a decade of sustainability that has been an essential feature of the campus master plan. He also shared a video of the green campus that places a lot of emphasis on various sustainability features, including solar power, eco-friendly commute options, efficient water management, healthy waste management practices, zero-discharge, and many other measures. IIT Ropar campus has received a 5-star Green Rating for Integrated Habitat Assessment for Large Developments (GRIHA LD) for campus master plan. The Institute has won several accolades in Rankings and has been actively involved in research and development right from the beginning.

IIT ROPAR CONDUCTED IT'S NINTH CONVOCATION VIRTUALLY

- Prof. K. VijayRaghavan, Principal Scientific Advisor to the Government of India was the Chief Guest on this occasion.
- 318 students awarded degrees.

The Ninth Annual Convocation of Indian Institute of Technology Ropar (IIT Ropar) was held virtually on Friday, December 4, 2020. The Convocation was pre- recorded and streamed on YouTube.

Prof. Sarit K Das, Director, IIT Ropar presented the Annual Report and congratulated the faculty, staff and students for ensuring that the Annual Convocation was held on schedule despite the disruptions arising out of the coronavirus pandemic.

Chief Guest Prof K. Vijay Raghavan who delivered the Convocation Address, drew attention to some of the challenges of the post COVID world where he hoped the scientist and engineer community would play its part to help the world steer through these challenges.

He also stated that we humans have a very important task in paying for the environment and climate mitigation. This is the biggest challenge the youth of today has to take up.

Dr. K. Radhakrishnan, Chairman, Board of Governors, IIT Ropar shared his words during the convocation, stating that Academic excellence is the bedrock of IIT Ropar. He praised the research ecosystem at the campus, as exemplified by the research outcomes and publications.

AN OPEN HOUSE SESSION FOR SUCCESSFUL JEE ADVANCED RANK HOLDERS

IIT Ropar conducted an Open House for successful JEE Advanced rank holders. The live counselling session aimed to facilitate the students with the requisite information to help them make the right career choices. This was followed by a question and answer session, designed specifically to help the students in making a correct and informed choice in their career. Special counselling was planned for prospective female candidates by the helpdesk team of the Institute to clarify their queries, particularly on seat allocation through female supernumerary quota.

A THREE-DAY WEBINAR ON "THEORISING HUMANITIES AT THE TIME OF CRISIS"

The Department of Humanities and Social Sciences of IIT Ropar organised “Theorising Humanities at the Time of Crisis”, a three-day webinar across a gallery of affiliated schools-- Literature, Philosophy, Linguistics, Film Studies, History and Sociology. The webinar attempted to form a dialogue between disciplines in the backdrop of crisis-- of the past and contemporary.

WEBINAR ON THE TEACHINGS OF MAHATMA GANDHI AND MARTIN LUTHER KING JR.

IIT Ropar commemorated the 150th birth year of Mahatma Gandhi with a special lecture by joining hands with its partner university, The State University of New York, Binghamton (SUNY), to conduct an online lecture on the teachings of Mahatma Gandhi. The lecture focused on the teachings of Mahatma Gandhi and their relevance in contemporary times. It also focused on the views of Rev. Martin Luther King Jr. and his learnings about Satyagraha and Ahimsa.

IIT ROPAR OBSERVED CONSTITUTION DAY 2020

Constitution Day was celebrated at IIT Ropar with enthusiasm. In an online event, the Preamble was read out by the Director, IIT Ropar, attended by the members of faculty, administrative staff and students. Professor Sarit K Das spoke about Constitutional morality and highlighted the major milestones in the journey of 71 years of the adoption of our Constitution.

WORKSHOP ON "COMPUTER VISION WITH DEEP LEARNING" UNDER 15TH IEEE ICIIS 2020

IIT Ropar saw a massive online gathering of internationally renowned experts and delegates from more than eight countries including Sri Lanka, USA, Italy, Denmark, Australia, Germany, Sweden and Japan for the 15th (IEEE) International Conference on Industrial and Information Systems (ICIIS) 2020, which was conducted in a virtual mode, for the first time in the last fifteen years of the history of the conference, during 26th – 28th November 2020.

VIGILANCE AWARENESS WEEK 2020

IIT Ropar organised an invited lecture on “Honesty-A way of life” by Mr. Kanwaldeep Singh, SSP, Vigilance Bureau, Punjab (Rupnagar Range) during Vigilance Awareness Week 2020.

MoU SIGNED WITH NHAI

IIT Ropar and NHAI have signed two MoUs for research projects to utilise rice husk ash & bagasse ash for highway embankment & for slope monitoring & landslide hazard quantification for hilly roads.

DEFENCE INDIA STARTUP CHALLENGE-4

Indian Institute of Technology Ropar partnered with the Ministry of Defense, Government of India to successfully bring together “Defence India Startup Challenge-4.

74TH INDEPENDENCE DAY

IIT Ropar celebrated 74th Independence Day with low-key celebrations due to the COVID-19 implications, adhering to Social Distancing and MaskUp norms.

राजभाषा गतिविधियां

उल्लेखनीय उपलब्धि

भा.प्रौ.सं. रोपड़ को राजभाषा शील्ड

भारतीय प्रौद्योगिकी संस्थान रोपड़ को नगर राजभाषा कार्यान्वयन समिति, रुपनगर द्वारा वित्तीय वर्ष 2019–20 में राजभाषा कार्यान्वयन में श्रेष्ठ कार्य हेतु "वार्षिक राजभाषा शील्ड" प्रदान की गई।

कोविड–19 के कारण परिस्थितियां पूर्ववत् होने पर नराकास द्वारा आयोजित किए जाने वाले पुरस्कार समारोहध्बैठक में यह शील्ड प्रत्यक्ष रुप से प्रदान की जाएगी।

प्रशिक्षण कार्यक्रम

कंप्यूटर पर हिंदी में कार्य करने के लिए बेसिक प्रशिक्षण कार्यक्रम

वर्ष 2019–20 के अंतर्गत हिंदी शिक्षण योजना, राजभाषा विभाग, गृह मंत्रालय, चंडीगढ़ में दिनांक 27.01.2020 से 31.01.2020 तक कंप्यूटर पर हिंदी में काम करने के लिए पांच पूर्ण कार्यदिवसीय बेसिक प्रशिक्षण कार्यक्रम में संस्थान के पांच सदस्यों श्री पुनीत गर्ग (सहायक कुलसचिव, विद्यार्थी मामले), श्री विजय नारायण, कनिष्ठ अधीक्षक, अनुसंधान अनुभाग तथा डॉ. रवी कान्त (सहायक प्राध्यापक, यांत्रिकी अभियांत्रिकी विभाग) ने सहभागिता ली एवं सफलतापूर्वक इस प्रशिक्षण का लाभ लिया।

वर्ष 2019–20 के अंतर्गत हिंदी शिक्षण योजना, राजभाषा विभाग, गृह मंत्रालय, चंडीगढ़ में दिनांक 03.02.2020 से 07.02.2020 तक कंप्यूटर पर हिंदी में काम करने के लिए पांच पूर्ण कार्यदिवसीय बेसिक प्रशिक्षण कार्यक्रम में संस्थान के दो सदस्यों श्री अश्वनी चंद्रा (कनिष्ठ सहायक) और सुश्री सनप्रीत कौर (कनिष्ठ सहायक) ने सहभागिता ली एवं इस प्रशिक्षण का सफलतापूर्वक लाभ लिया।

हिंदी टंकण पत्राचार पाठ्यक्रम प्रशिक्षण

भा.प्रौ.सं. रोपड़ में हिंदी टाइपिंग प्रशिक्षण कार्यक्रम के 59 वें सत्र

केन्द्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार द्वारा आयोजित किए जा रहे हिंदी शब्द संसाधन (हिंदी टंकण) पत्राचार प्रशिक्षण कार्यक्रम (59 वां सत्र) हेतु भारतीय प्रौद्योगिकी संस्थान रोपड़ के कुल 8 सदस्य श्री अक्शप्रीत सिंह तम्बड़, कनिष्ठ सहायक, श्री विकास कौशिक, वरिष्ठ सहायक, श्री दिवाकर शर्मा, वरिष्ठ सहायक, श्री सौरभ भाटिया, कनिष्ठ सहायक, सुश्री मनिन्दर पाल कौर, कनिष्ठ सहायक श्री गुरदीप सिंह, कनिष्ठ अधीक्षक, श्री पुनीत गर्ग, सहायक कुलसिचव तथा डॉ. रवि कान्त, सहायक प्राध्यापक को संस्थान की ओर से नामित एवं के.हि.प्र.सं. द्वारा पंजीकृत कराया गया।

चार दिवसीय ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम का आयोजन (दिनांक 28 जुलाई से 31 जुलाई 2020)

केन्द्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार द्वारा आयोजित किए जा रहे हिंदी शब्द संसाधन (हिंदी टंकण) पत्राचार प्रशिक्षण कार्यक्रम (59 वां सत्र) हेतु भारतीय प्रौद्योगिकी संस्थान रोपड़ के पंजीकृत 08 सदस्यों की माह नवंबर 2020 में होने वाली परीक्षा को केन्द्र में रखते हुए चार दिवसीय ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम का आयोजन किया गया।

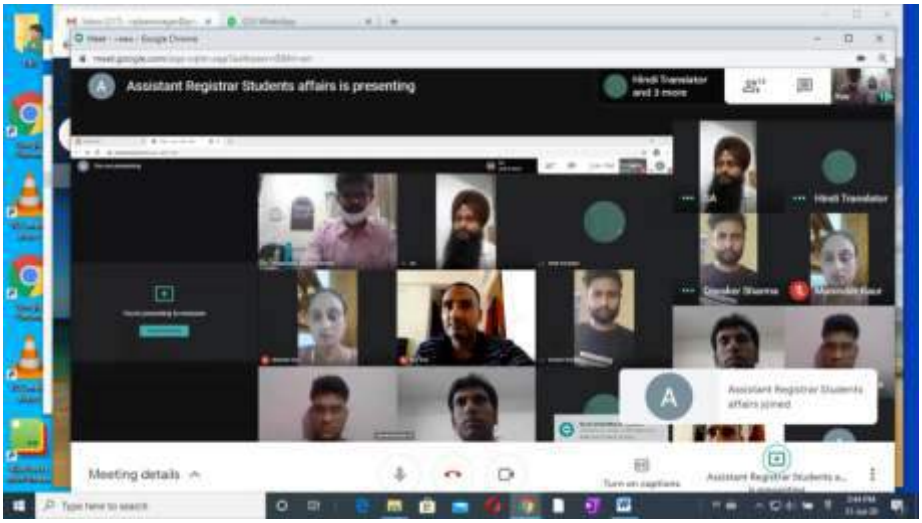
इस ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम में में श्री अरविंद कुमार, सहायक निदेशक, हिंदी शिक्षण योजना, चण्डीगढ़ ने प्रशिक्षक के रूप में सभी प्रशिक्षणार्थियों का मार्गदर्शन किया।

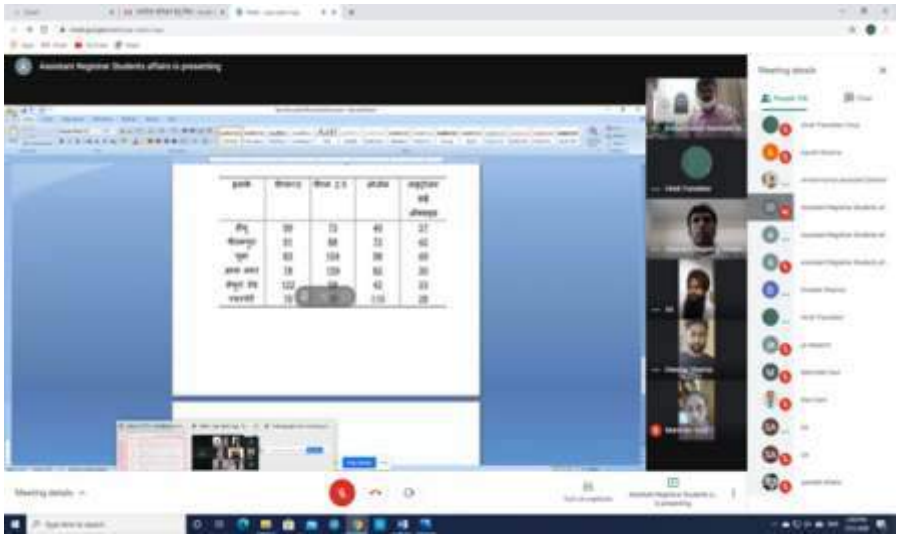
यह ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम 28जुलाई से 31 जुलाई 2020 तक आयोजित किया गया। इस आंतरिक प्रशिक्षण कार्यक्रम में संस्थान के 08 पंजीकृत सदस्यों श्री अक्शप्रीत सिंह तम्बर (कनिष्ठ सहायक), श्री गुरदीप सिंह (कनिष्ठ अधीक्षक), श्री पुनीत गर्ग (सहायक कुलसचिव), श्री विकास कौशिक (वरिष्ठ सहायक), श्री दिवाकर शर्मा (वरिष्ठ सहायक), डॉ. रवि कान्त (सहायक प्राध्यापक), श्री सौरभ भाटिया (कनिष्ठ सहायक), सुश्री मनिन्दर पाल कौर

(कनिष्ठ सहायक) ने हिंदी टाइपिंग करना , हिंदी में सारणी प्रारूप बनाना, हिंदी में विभिन्न आदेश, पत्रों और ज्ञापन को बनाना तथा हस्तलेख आदि का अभ्यास किया।

इस ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम का दिनांक 31 जुलाई 2020 को आयोजित चतुर्थ एवं अंतिम सत्र में डॉ. अरविंद कुमार गुप्ता, संकाय प्रभारी, हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड़ ने श्री अरविंद कुमार, सहायक निदेशक का धन्यवाद ज्ञापित किया और सभी प्रशिक्षणार्थियों को आगामी नवंबर माह में होनेवाली परीक्षा के लिए शुभकामनाएं दी साथ ही श्री गिरीश कठाणे, हिंदी अनुवादक का आतंरिक प्रशिक्षण कार्यक्रम का सफलतापूर्वक संचालन करने हेतु अभिनंदन किया।

श्री लगवीश कुमार, हिंदी अधिकारी, भा.प्रौ.सं. रोपड़ के मार्गदर्शन में इस चार दिवसीय आंतरिक प्रशिक्षण कार्यक्रम का आयोजन किया गया।





प्रशिक्षणार्थी अपने द्वारा किए गए अभ्यास की प्रशिक्षक महोदय द्वारा पुष्टि करते हुए

भा.प्रौ.सं. रोपड़ परीक्षा केन्द्र के रुप में

केन्द्रीय हिंदी प्रशिक्षण संस्थान नई दिल्ली द्वारा हिंदी शब्द संसाधन/हिंदी टंकण पत्राचार पाठ्यक्रम प्रशिक्षण के 59वें सत्र (अवधिः–फरवरी 2020 से जुलाई 2020) की परीक्षा हेतु भा.प्रौ.सं. रोपड़ को परीक्षा केन्द्र के रुप में सुनिश्चित किया गया। यह परीक्षा भा.प्रौ.सं. रोपड़ में दिनांक 03 नवंबर 2020 को संपन्न की गई। श्री लगवीश कुमार, संयुक्त कुलसचिव एवं हिंदी अधिकारी ने इस परीक्षा केन्द्र के केन्द्र अधीक्षक के रुप में तथा डॉ. गिरीश प्रमोदराव कठाणे, हिंदी अनुवादक ने केंद्र अधीक्षक के सहायक के रुप में अपने दायित्व का निर्वहन किया।

उक्त हिंदी शब्द संसाधन (हिंदी टंकण) पत्राचार प्रशिक्षण कार्यक्रम (59वां सत्र) (अवधि 01 फरवरी 2020 से माह जुलाई 2020) की दिनांक 03 नवंबर 2020 को संपन्न परीक्षा में भारतीय प्रौद्योगिकी संस्थान रोपड़ के निम्न 03 सदस्य विशेष प्रथम श्रेणी में उत्तीर्ण हुए:–

श्री दिवाकर शर्मा
वरिष्ठ सहायक
भंडार एवं क्रय अनुभाग

श्री गुरदीप सिंह
कनिष्ठ अधीक्षक
विद्यार्थी मामले अनुभाग

श्री पुनीत गर्ग
सहायक कुलसचिव
विद्यार्थी मामले अनुभाग

इसी के साथ वर्तमान तक संस्थान के 10 सदस्य इस प्रशिक्षण को सफलतापूर्वक संपन्न एवं उत्तीर्ण कर चुके है।

भा.प्रौ.सं. रोपड़ में हिंदी टाइपिंग प्रशिक्षण कार्यक्रम के 61 वां सत्र

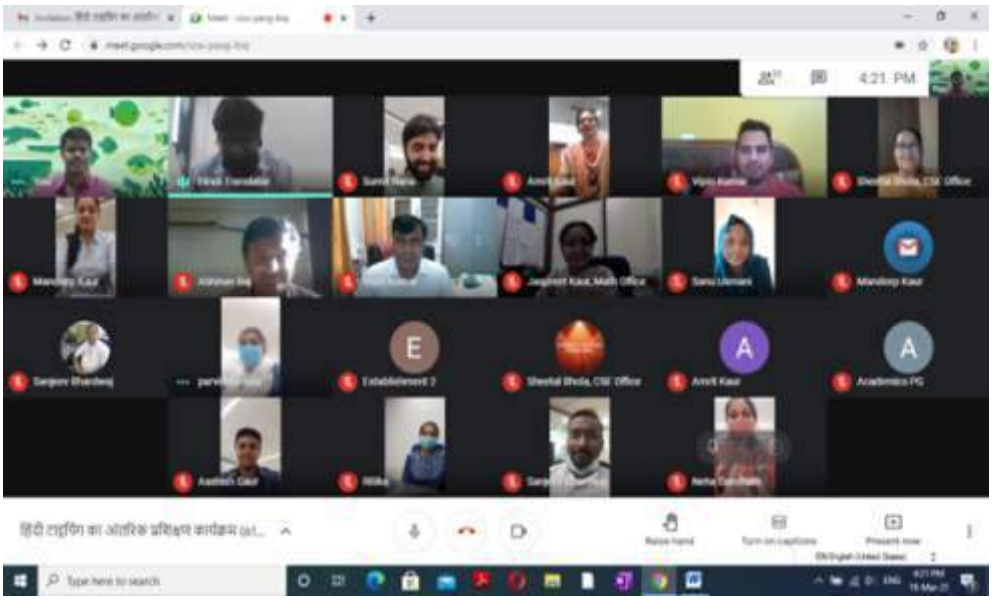
हिंदी शब्द संसाधन एवं हिदी टंकण पत्राचार प्रशिक्षण सत्र 01 फरवरी 2021 से जुलाई 2021 हेतु निम्न 23 सदस्यों का नामांकन केन्द्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार द्वारा स्वीकृत कर निम्न कुल 23 सदस्य उक्त प्रशिक्षण हेतु पंजीकृत किए गए है:

श्री रविंदर सिंह, वरिष्ठ सहायक	श्री दलजीत सिंह सैनी, वरिष्ठ सहायक (लेखा)
श्री नवीन, वरिष्ठ सहायक	सुश्री निधि सिन्हा, कनिष्ठ सहायक लेखा
सुश्री अमृत कौर, वरिष्ठ सहायक	सुश्री मनदीप कौर, कनिष्ठ सहायक
सुश्री परविंदर कौर, कनिष्ठ सहायक	श्री सुमित राणा, कनिष्ठ सहायक
सुश्री नेहा डण्ढारे, कनिष्ठ सहायक	सुश्री रुबल बत्ता, कनिष्ठ सहायक
सुश्री जसप्रीत कौर, कनिष्ठ सहायक	श्री विपिन कुमार, कनिष्ठ प्रयोगशाला सहायक
सुश्री शीतल भोला, कनिष्ठ सहायक	सुश्री सानू उस्मानी, कनिष्ठ सहायक
श्री आशीष गौड़, कनिष्ठ सहायक	श्री गगनदीप सिंह, कनिष्ठ सहायक लेखा
श्री नवीन कुमार, कनिष्ठ लेखा अधिकारी	श्री ललित कुमार, कनिष्ठ लेखा अधिकारी
श्री विपिन कुमार, लेखा अधिकारी	श्री गौरव दत्ता, कनिष्ठ लेखा अधिकारी
सुश्री रीतिका, कनिष्ठ अधीक्षक	श्री अभिनव राज, कनिष्ठ अभियंता (विद्युत)
श्री संजीव कुमार भारद्वाज, कनिष्ठ अभियंता (सिविल)	

चार दिवसीय ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम का आयोजन (दिनांक 15 मार्च से 18 मार्च 2021)

केन्द्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार द्वारा आयोजित किए जा रहे हिंदी शब्द संसाधन (हिंदी टंकण) पत्राचार प्रशिक्षण कार्यक्रम (61 वां सत्र) हेतु भारतीय प्रौद्योगिकी संस्थान रोपड़ के पंजीकृत 23 सदस्यों की माह जुलाई 2021 में होने वाली परीक्षा को केन्द्र में रखते हुए चार दिवसीय ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम का आयोजन किया गया।

इस ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम में प्रशिक्षक के रुप में श्री अरविंद कुमार, सहायक निदेशक, हिंदी शिक्षण योजना, चण्डीगढ़ को आमंत्रित किया गया था।

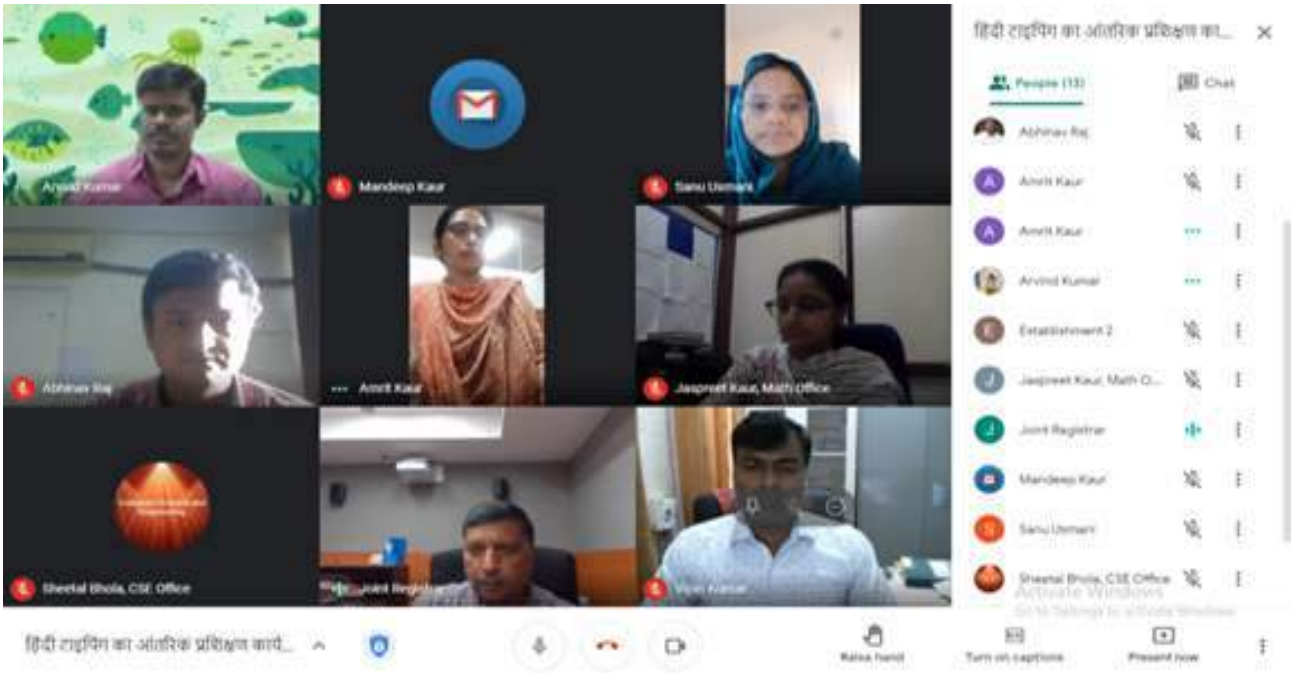


आंतरिक प्रशिक्षण कार्यक्रम का लाभ लेते हुए प्रशिक्षणार्थी

इस ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम को आरंभ करते हुए संस्थान के हिंदी अधिकारी श्री लगवीश कुमार ने श्री अरविंद कुमार, सहायक निदेशक, हिंदी शिक्षण योजना, चण्डीगढ़ का स्वागत करते हुए इस बात का उल्लेख किया कि वर्ष 2020 में इसी हिंदी टाइपिंग प्रशिक्षण के 59वें सत्र हेतु श्री अरविंद कुमार जी के मार्गदर्शन जो आंतरिक प्रशिक्षण कार्यक्रम संपन्न हुआ है। जिसके फलस्वरुप संस्थान के तीन सदस्य नवंबर 2020 में संपन्न परीक्षा में विशेष प्रथम श्रेणी में अपना स्थान सुनिश्चित कर पाने में सक्षम हुए।

इस चार दिवसीय आनलाइन आंतरिक प्रशिक्षण कार्यक्रम में संस्थान के 23 पंजीकृत सदस्यों ने हिंदी इनस्क्रिप्ट कुंजीपटल पर टाइपिंग करना , हिंदी में सारणी प्रारूप बनाना, हिंदी में विभिन्न आदेश, पत्रों और ज्ञापन को बनाना तथा हस्तलेख आदि का अभ्यास किया।

इस ऑनलाइन आंतरिक प्रशिक्षण कार्यक्रम का दिनांक 18 मार्च 2021 को आयोजित चतुर्थ एवं अंतिम सत्र में संस्थान के कुलसचिव श्री रविंदर कुमार ने श्री अरविंद कुमार, सहायक निदेशक का धन्यवाद ज्ञापित किया और सभी प्रशिक्षणार्थियों को आगामी जुलाई माह 2021 में होनेवाली परीक्षा के लिए शुभकामनाएं दी साथ ही डॉ गिरीश कठाणे, हिंदी अनुवादक का आतंरिक प्रशिक्षण कार्यक्रम का सफलतापूर्वक संचालन करने हेतु अभिनंदन किया।



संस्थान के कुलसचिव श्री रविंदर कुमार प्रशिक्षक महोदय का धन्यवाद ज्ञापित करते

आनलाइन अल्पकालिक गहन हिंदी कार्यशाला

केन्द्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, अल्पकालिक गहन प्रशिक्षण एकक द्वारा दिनांक 20 जुलाई 2020 से दिनांक 06 नवंबर 2020 तक आयोजित किए गए कुल 05 सत्रों में भा.प्रौ.सं. रोपड़ के कुल 62 कर्मचारियों ने आनलाइन अल्पकालिक गहन हिंदी कार्यशाला का लाभ लिया। विभिन्न सत्रों में आयोजित यह कार्यशाला हिंदी में कार्य करते हुए होनेवाली झिझक को दूर करने और अधिक से अधिक कार्यालयीन पत्राचार हिंदी में करने हेतु मार्गदर्शन आदि बिंदूओं को समाहित किए हुए थी।

दिनांक 20 जुलाई से 24 जुलाई 2020 के दौरान आयोजित कार्यशाला सं. 498 में भा.प्रौ.सं. रोपड़ के निम्न 15 कर्मचारियों ने सहभागिता ली:–

कार्यशाला सं. 498 (20 जुलाई से 24 जुलाई 2020)	श्री पुनीत गर्ग, सहायक कुलसचिव	कार्यशाला सं. 499 (03 अगस्त से 07 अगस्त 2020)	श्री पुनीत गोयल, उपकुलसचिव
	श्री रविंदर सिंह, वरिष्ठ सहायक		श्री अजीत पाल सिंह, खेल अधिकारी
	श्री अमित कुमार, तकनीकी अधीक्षक		सुश्री अमृता भट्टाचार्या, पुस्त. सू. अधि.
	सुश्री पूनम कटारिया, वरिष्ठ सहायक		सुश्री परविंदर कौर, कनिष्ठ सहायक
	श्री दिवाकर शर्मा, वरिष्ठ सहायक		श्री सरबजीत सिंह, कनिष्ठ परिचारक
	श्री विकास कौशिक, वरिष्ठ सहायक		सुश्री मनदीप कौर, कनिष्ठ सहायक
	श्री दलजीत सिंह सैनी, वरिष्ठ लेखाकार		श्री रिषभ सेमवाल, कनि. प्रयो. सहायक
	सुश्री रुबल बत्ता, कनिष्ठ सहायक		सुश्री जसप्रीत कौर, कनिष्ठ सहायक
	सुश्री पूनम, वरिष्ठ सहायक		श्री गुरदीप सिंह, कनिष्ठ अधीक्षक
	श्री विकास, भेषजज्ञ		श्री मनोज कुमार, कनिष्ठ सहायक
	सुश्री शीतल भोला, कनिष्ठ सहायक		सुश्री रीतिका, कनिष्ठ अधीक्षक
	श्री सुमित राणा, कनिष्ठ सहायक		श्री जसदीप सिंह, कनिष्ठ सहायक
	श्री आशीष गौर, कनिष्ठ सहायक		सुश्री भावना भाटिया, कनिष्ठ सहायक
	श्री टी.एस. आनंद, कार्यपालक अभियंता		
	डॉ. दिनेश के. एस., पुस्तकालयाध्यक्ष		

कार्यशाला सं. 500 (07 सितंबर से 11 सिंतबर 2020)	डॉ. चरणजीत सिंह, स्वास्थ्य अधिकारी	कार्यशाला सं. 501 (21 सितंबर से 25 सिंतबर 2020)	श्री अनिल कुमार, कनि. प्रयो. सहायक
	श्री गौतम शर्मा, सहायक कुलसचिव		श्री साहिल कपूर, कनिष्ठ परिचारक
	श्री विनित जामवाल, पुस्त. सू. सहायक		श्री देवेन्द्र कुमार, कनि. प्रयो. सहायक
	श्री अर्पित गुप्ता, कनि. प्रयो. सहायक		श्री कमल जीत सिंह, कनि. तक. अधीक्षक
	श्री करमवीर सिंह, कनिष्ठ सहायक लेखा		श्री जसप्रीत सिंह, कनि. परिचारक
	सुश्री सानू उस्मानी, कनिष्ठ सहायक		श्री राज कुमार मीणा, कनि. प्रयो. सहायक
	मो अनज़ारुल हक, कनिष्ठ सहायक		श्री सुखविंदर सिंह, वरि. प्रयो. सहायक
	श्री ललित कुमार, कनि. लेखा अधिकारी		श्री पुनीत कुमार, कनि. प्रयो. सहायक
	सुश्री अमृत कौर, वरिष्ठ सहायक		श्री हेमन्त कुमार, कनि. प्रयो. सहायक
	श्री रविंदर कुमार, वरिष्ठ सहायक		सुश्री दिलजीत कौर, स्टाफ नर्स

कार्यशाला सं. 502 (02 नवंबर से 06 नवंबर 2020)	श्री रुपिंदर सिंह मुन्द्रा, वरि. प्रयो. सहायक	श्री प्रमोद कुमार दुबे, कनिष्ठ अधीक्षक
	श्री दमनिंदर सिंह, कनि. तक. अधीक्षक	श्री गौरव दत्ता, कनि. लेखा अधिकारी
	श्री अवतार सिंह, कनि. प्रयो. सहायक	श्री जितेंदर पाल, कनिष्ठ अधीक्षक
	श्री दिलबाग सिंह, कनि. प्रयो. सहायक	श्री संदीप सिंह, कनिष्ठ सहायक
	श्री रामबीर सिंह, कनि. तक. अधीक्षक	श्री संतोष देवगम, कनिष्ठ सहायक
	सुश्री पूजा पाण्डेय, कनि. प्रयो. सहायक	सुश्री नेहा डण्ढारे, कनिष्ठ सहायक
	श्री अमित कौशल, कनि. तक. अधीक्षक	

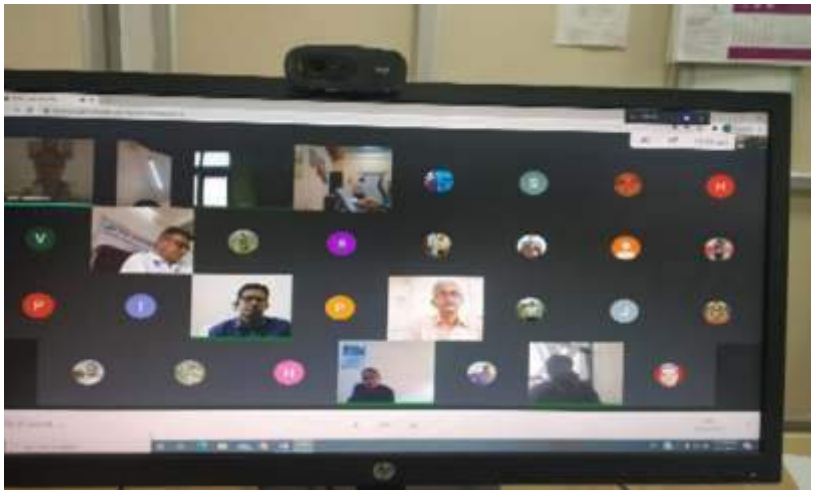
प्रबोध, प्रवीण, प्राज्ञ एवं पारंगत प्रशिक्षण

कें.हि.प्र.सं., नई दिल्ली द्वारा आयोजित जनवरी–मई 2021 सत्र के हिंदी भाषा प्रशिक्षण का संस्थान के कुल 53 सदस्य लाभ ले रहे है जिसमें प्रबोध हेतु 01, प्राज्ञ हेतु 09 तथा पारंगत हेतु 42 कर्मचारी पंजीकृत है।

राजभाषा अधिकारियों हेतु 05 दिवसीय आनलाइन अभिमुखी कार्यक्रम

राजभाषा नीति के सफल कार्यान्वयन के उद्देश्य को केंद्र में रखते हुए केंद्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार ने राजभाषा अधिकारियों हेतु 05 पूर्णदिवसीय आनलाइन अभिमुखी कार्यक्रम का आयोजन किया। यह अभिमुखी कार्यक्रम 15 मार्च 2021 से 19 मार्च 2021 तक आयोजित किया गया। इस 05 दिवसीय कार्यक्रम में संस्थान के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे को नामित किया गया था।

इस 05 दिवसीय आनलाइन अभिमुखी कार्यक्रम में विभिन्न विषयों पर कुल 9 सत्रों का आयोजन किया गया। जिसमें राजभाषा हिंदी की अद्यतन जानकारी, राजभाषा संबंधी दायित्वों से परिचय, राजभाषा नीति का सफल कार्यान्वयन, कंप्यूटर की आधारभूत जानकारी, राजभाषा विभाग द्वारा विकसित ई–टूल्स की जानकारी, प्रशिक्षण रोस्टर का रखरखाव, कार्यस्थल पर महिलाओं के साथ यौन उत्पीड़न तथा सूचना का अधिकार आदि विषयों का प्रमुखता से समावेश रहा।



इस अभिमुखी कार्यक्रम में कुल 9 सत्रों हेतु 9 विशेषज्ञों द्वारा जानकारी दी गई। यह जानकारी राजभाषा अधिकारियों को उनके कार्यालयों में राजभाषा कार्यान्वयन को सुचारु रुप से लागू करने में सहायक सिद्ध होगी।

प्राज्ञ/, प्रबोध पारंगत प्रशिक्षण जनवरी – मई 2021 सत्र

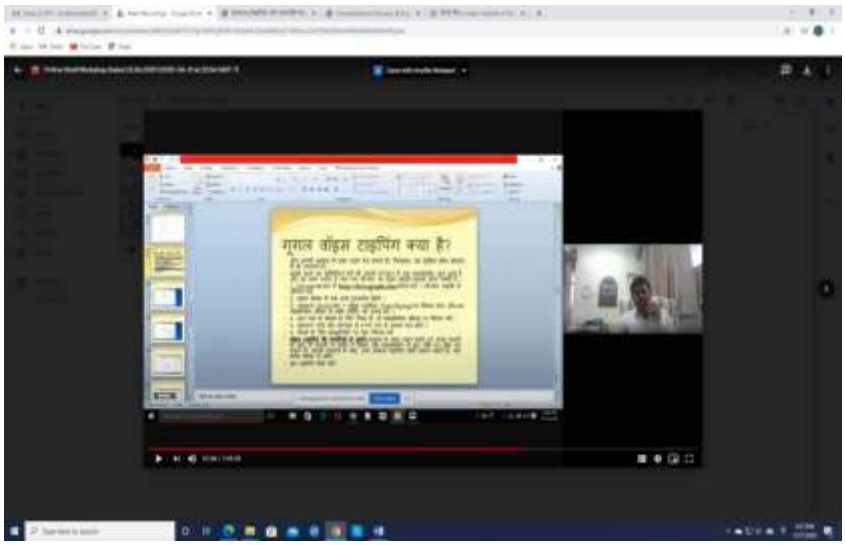
भा.प्रौ.सं. रोपड़ में ऑनलाइन हिंदी कार्यशाला सह प्रशिक्षण कार्यक्रम का आयोजन

भा.प्रौ.सं. रोपड़ में दिनांक 22 जून 2020 को सुबह 11.00 बजे ऑनलाइन हिंदी कार्यशाला का आयोजन किया। इस कार्यशाला का विषय "कंप्यूटर में हिंदी का प्रयोग" (हिंदी टंकण के विशेष संदर्भ में) था। इस कार्यशाला हेतु वक्ता के रुप में श्री अरविंद कुमार, सहायक निदेशक, हिंदी शिक्षण योजना, राजभाषा विभाग, गृह मंत्रालय, चण्डीगढ़ वक्ता के रुप में उपस्थित थे।

इस ऑनलाइन कार्यशाला हेतु संस्थान के सदस्यों से उत्साहजनक प्रतिक्रिया प्राप्त हुई। इस कार्यशाला में सहभागिता लेने हेतु कुल 96 प्रतिभागियोंनेपंजीकरणकरवाया।

श्री अरविंद कुमार, सहायक निदेशक ने सभी सहभागियों को कंप्यूटर पर हिंदी में कार्य करते समय आनेवाली कठिनाईयों को चिन्हित किया और उसका क्रमबद्ध रुप से निवारण/समाधान भी दिया। श्री अरविंद कुमार, सहायक निदेशक ने हिंदी टाइपिंग के संदर्भ में हिंदी इन्स्क्रीप्ट कीबोर्ड, फोनेटिक कीबोर्ड को कैसे कंप्यूटर में स्थापित (इन्स्टॉल) किया जाता है, इसकी जानकारी दी। साथ ही, संयुक्ताक्षर को कैसे टाइप किया जाएं इसका भी प्रशिक्षण दिया। भा.प्रौ.सं.रोपड़ का हिंदी प्रकोष्ठ समय–समय पर अपने संस्थान में इस प्रकार का प्रशिक्षण आयोजित करता आ रहा है। किंतु संस्थान में कई नवनियुक्त कर्मचारियों की दृष्टि से यह कार्यशाला उपयोगी सिद्ध हुई। इसके अतिरिक्त, श्री अरविंद कुमार, सहायक निदेशक ने संस्थान के अधिकारियों तथा उच्च अधिकारियों को केन्द्र में रखते हुए टवपबम ज्लचपदह कैसे की जाती है इसपर भी उन्हें प्रशिक्षित किया। इस कार्यशाला में डॉ. अरविंद कुमार गुप्ता, संकाय प्रभारी (हिंदी) विशेष रुप से उपस्थित थे।

ऑनलाइन कार्यशाला को समापन की ओर ले जाते हुए श्री लगवीश कुमार, हिंदी अधिकारी, भा.प्रौ.सं.रोपड़ ने श्री अरविंद कुमार सहायक निदेशक का धन्यवाद ज्ञापित किया साथ ही सभी प्रतिभागियों का इस कार्यशाला सह प्रशिक्षण कार्यक्रम में सहभागिता लेने हेतु धन्यवाद ज्ञापित किया।



इस आनलाइन कार्यशाला हेतु पंजीकृत सभी कर्मचारियों को डिजीटल प्रमाणपत्र प्रदान किए गए।

नराकास, रुपनगर हेतु आनलाइन हिंदी कार्यशाला का आयोजन

भारतीय प्रौद्योगिकी संस्थान रोपड़ ने नाइलिट, रुपनगर के साथ नगर राजभाषा कार्यान्वयन समिति रुपनगर के संयुक्त तत्वावधान में नराकास रुपनगर के सभी सदस्य कार्यालयों के लिए "सूचना प्रौद्योगिकी के युग में राजभाषा के प्रगामी प्रयोग में यूनिकोड की महत्ता (हिंदी टाइपिंग के विशेष संदर्भ में)" विषय पर दिनांक 18 दिसंबर, 2020 को आनलाइन हिंदी कार्यशाला का आयोजन किया।

इस कार्यशाला में मुख्य वक्ता एवं प्रशिक्षक रुप में श्री अरविंद कुमार, सहायक निदेशक, हिंदी टंकण एवं आशुलिपि प्रशिक्षण केन्द्र, राजभाषा विभाग, गृह मंत्रालय, चण्डीगढ़ केन्द्र को विशेष रुप से आमंत्रित किया गया था।

इस आनलाइन कार्यशाला का आरंभ आई आई टी रोपड़ के हिंदी अधिकारी / संयुक्त कुलसचिव श्री लगवीश कुमार द्वारा औपचारिक स्वागत भाषण से हुआ। श्री लगवीश कुमार ने कार्यशाला हेतु वक्ता एवं प्रशिक्षक रुप में आमंत्रित श्री अरविंद कुमार, सहायक निदेशक महोदय का स्वागत किया। साथ ही, नराकास रुपनगर के अध्यक्ष श्री आर. के. जसरोटिया, नराकास रुपनगर तथा सभी सदस्य कार्यालयों के सहभागियों का भी हार्दिक स्वागत किया।

श्री आर. के. जसरिटिया, अध्यक्ष, नराकास रुपनगर ने अपनी आरंभिक टिप्पणी में सभी सहभागियों से इस कार्यशाला का भरपूर लाभ लेने की बात कहीं और आई.आई.टी. रोपड़ और नाइलिट रुपनगर को इस आयोजन हेतु अपनी शुभकामनाएं दी।

इस आनलाइन कार्यशाला के वक्ता / प्रशिक्षक श्री अरविंद कुमार ने सभी सहभागियों के साथ सूचना प्रौद्योगिकी और राजभाषा हिंदी का विकास पर अपनी बात रखते हुए पॉवर पॉइंट प्रस्तुति से हिंदी टाइपिंग के विभिन्न टूल्स के संबंध में सभी को अवगत कराया और उनका अभ्यास भी कराया।

कार्यशाला का समापन करते हुए डॉ. अरविंद कुमार गुप्ता, संकाय प्रभारी (हिंदी), आई आई टी रोपड़ ने श्री अरविंद कुमार, सहायक निदेशक महोदय का कार्यशाला में पधारकर सभी को मार्गदर्शित करने हेतु धन्यवाद ज्ञापित किया। साथ ही नराकास रुपनगर के सभी सदस्य कार्यालयों के प्रमुखों, सहभागी सदस्यगणों का भी धन्यवाद ज्ञापित किया। इस कार्यशाला का संचालन आई आई टी रोपड़ के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे ने किया।

दिनांक 12 मार्च 2021 को आनलाइन हिंदी कार्यशाला का आयोजन

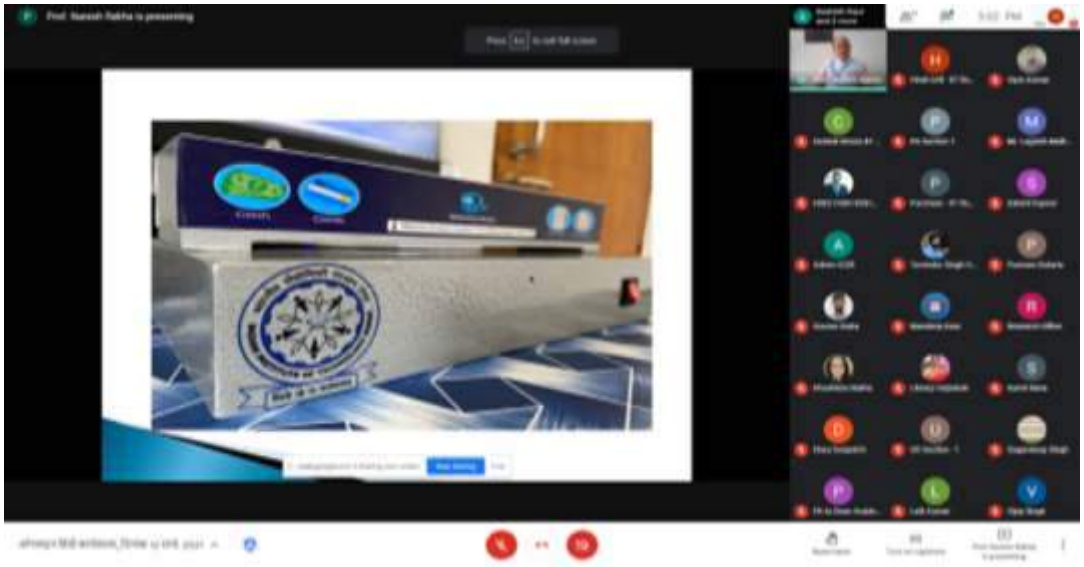
हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड़ ने दिनांक 12 मार्च, 2021 को आनलाइन माध्यम से "कोरोना से बचावः ज्ञान के प्रसार में हिंदी सशक्त माध्यम" विषय पर कार्यशाला का आयोजन किया। इस कार्यशाला में वक्ता के रुप में भा.प्रौ.सं. रोपड़ के प्रौद्योगिकी नवाचार हब के वरिष्ठ वैज्ञानिक अधिकारी डॉ. नरेश राखा थे।

कार्यशाला का औपचारिक स्वागत भाषण संस्थान के हिंदी अधिकारी श्री लगवीश कुमार ने किया। श्री लगवीश कुमार ने अपने स्वागत भाषण में कहा कि हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड़ राजभाषा विभाग, गृह मंत्रालय, भारत सरकार के दिशा–निर्देशों के अनुपालन में प्रत्येक तिमाही में कार्यशाला का आयोजन करता आ रहा है। श्री लगवीश कुमार ने डॉ. नरेश राखा और उपस्थित सभी संस्थान सदस्यों का स्वागत किया।

डॉ. नरेश राखा जी ने अपने वक्तव्य में कई ऐसे उपायों को सभी के साथ साझा किया जिसके फलस्वरुप कोविड़ के दौरान हम अपनी सुरक्षा कर सकते है। डॉ. राखा जी ने अत्यंत सरल हिंदी में रोचक ढंग से अपनी बात रखते हुए कोविड़–19 के दौरान उनके और उनके समूह द्वारा किए गए अनुसंधानों के प्रतिफलन में बनाएं गए उपकरणों तथा इनकी सार्थकता पर प्रकाश ड़ाला जिसमें घर में उपयोग में लायी जाने वाली तमाम वस्तुओं को कीटाणु मुक्त करने हेतु यूवी ट्रंक, स्वास्थ्य कर्मचारियों को कोविड़ संक्रमण से बचाने हेतु डिफिंग चेंबर आदि का समावेश था।

डॉ. राखा जी ने टीकाकरण के इस दौर में सभी को इस बात से अवगत कराया कि भले ही कुछ लोग वैक्सीन ना लगायें और उनको कोरोना भी ना हो परंतु यह लोग वैक्सीन की श्रृंखला भंग करने के जिम्मेदार होंगे। डॉ. राखा जी ने सभी से यह आग्रह किया वे टीकाकरण को लेकर किसी भी प्रकार से आशंकीतों को इस तथ्य से जागरुक कराएं और टीकाकरण के इस राष्ट्रीय उद्देश्य में अपनी भागीदारी सुनिश्चित करें।

कार्यशाला का समापन करते हुए संस्थान के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे ने डॉ. नरेश राखा और सभी उपस्थितों का धन्यवाद ज्ञापित किया।



मातृभाषा दिवस का आयोजन

भारतीय प्रौद्योगिकी संस्थान रोपड़ ने मातृभाषा दिवस उपलक्ष्य पर दिनांक 21 फरवरी, 2021 को एक दिवसीय मातृभाषा दिवस का अपने संस्थान में आयोजन किया। इस दो दिवसीय आयोजन में संस्थान के संकाय सदस्यों, अधिकारियों, कर्मचारियों तथा विद्यार्थियों के लिए मातृभाषा में कविता एवं गीत गायन प्रतियोगिता और मातृभाषा में भाषण प्रतियोगिता का आयोजन किया गया।

मातृभाषा में कविता एवं गीत गायन प्रतियोगिता तथा मातृभाषा में भाषण प्रतियोगिता में प्रतिभागियों ने अपनी– अपनी मातृभाषा जैसै कि पंजाबी, हिंदी, संथाली, कश्मीरी आदि भाषाओं में गीत गायन तथा भाषण दिया।

कविता एवं गीत गायन प्रतियोगिता के परीक्षक पैनल में डॉ. ब्रजेश रावत, सहायक प्राध्यापक, विद्युत अभियांत्रिकी विभाग और डॉ. शशि शेखर झा, सहायक प्राध्यापक, कंप्यूटर विज्ञान एवं अभियांत्रिकी विभाग थे। वहीं भाषण प्रतियोगिता के परीक्षक पैनल में डॉ. देवर्षि दास, सहायक प्राध्यापक, विद्युत अभियांत्रिकी विभाग तथा डॉ. अभिषेक तिवारी, सहायक प्राध्यापक, धातुकी एवं पदार्थ अभियांत्रिकी विभाग थे। इन प्रतियोगिता में संस्थान के सभी स्तरों से उत्साहजनक प्रतिभागिता देखी गई।

सुबह 10 बजे आयोजित मातृभाषा में कविता एवं गीत गायन प्रतियोगिता में **संकाय सदस्य / कर्मचारीगण की श्रेणी** में श्री विपिन (लेखा अधिकारी) को प्रथम पुरस्कार, श्री समनेन्द्र सिंह (कनिष्ठ अधीक्षक) को द्वितीय पुरस्कार, सुश्री हरप्रीत कौर (पुस्तकालय सूचना अधिकारी) और श्री संदीप सिंह (कनि. सहायक) को संयुक्त रुप से तृतीय पुरस्कार, डॉ. अभिषेक तिवारी (सहायक प्राध्यापक) और श्री नरिंदर कुमार (निर्माण प्रबंधन समूह) को संयुक्त रुप से प्रथम प्रोत्साहन पुरस्कार तथा श्री पुनीत गर्ग (सहायक कुलसचिव) और श्री अभिनव राज (कनि. अभियंता विद्युत) को संयुक्त रुप से द्वितीय प्रोत्साहन पुरस्कार प्रदान किया गया।

वहीं, **विद्यार्थी श्रेणी** में श्री अभिषेक कुमार (भौतिकी) को प्रथम पुरस्कार, श्री किष्ण के. द्विवेदी (जैवचिकित्सा अभि.) और श्री धीरज चमोली (यांत्रिक अभि.) को संयुक्त रुप से द्वितीय पुरस्कार, श्री जयेश भोजावत (गणित और अभिकलन), सुश्री प्रज्ञा शर्मा (भौतिकी), सुश्री संयुक्ता मरांडी (यांत्रिक अभि.) को संयुक्त रुप से तृतीय पुरस्कार, श्री दीपक कुमार (जैवचिकित्सा अभि.) और सुश्री मानसी सरदेसाई को संयुक्त रुप से प्रथम प्रोत्साहन पुरस्कार, तथा श्री सुप्रतीम हल्दार (भौतिकी) को द्वितीय प्रोत्साहन पुरस्कार प्रदान किया गया।

डॉ. अभिषेक तिवारी, सहायक प्राध्यापक गीत गायन करते हुए।

दोपहर 2.30 बजे आयोजित मातृभाषा में भाषण प्रतियोगिता में संकाय सदस्य / कर्मचारीगण की श्रेणी में श्री अभिनव राज (कनि. अभियंता विद्युत) को प्रथम पुरस्कार, श्री पुनीत गर्ग (सहायक कुलसचिव) को द्वितीय पुरस्कार तथा श्री विपिन कुमार (लेखा अधिकारी) को तृतीय पुरस्कार प्रदान किया गया

वहीं, विद्यार्थी श्रेणी में सुश्री अपूर्वा शेखर (मानविकी एवं सामाजिक विज्ञान) को प्रथम पुरस्कार, श्री ऋतभ किशोर (यांत्रिक अभि.) को द्वितीय पुरस्कार, श्री मनोज कुमार (विद्युत अभि.) को तृतीय पुरस्कार, सुश्री मानसी सरदेसाई (रासायनिक अभि.) को प्रथम प्रोत्साहन पुरस्कार तथा श्री जयेश भोजावत (गणित एवं अभिकलन) को द्वितीय प्रोत्साहन पुरस्कार प्रदान किया गया।

श्री अभिनव राज, कनि. अभियंता विद्युत भाषण प्रतियोगिता में अपने विचार रखते हुए।

सुश्री अपूर्वा शेखर, छात्रा भाषण प्रतियोगिता में अपने विचार रखते हुए।

आई.आई.टी. रोपड़ में आनलाइन हिंदी पखवाड़ा 2020 का आयोजन

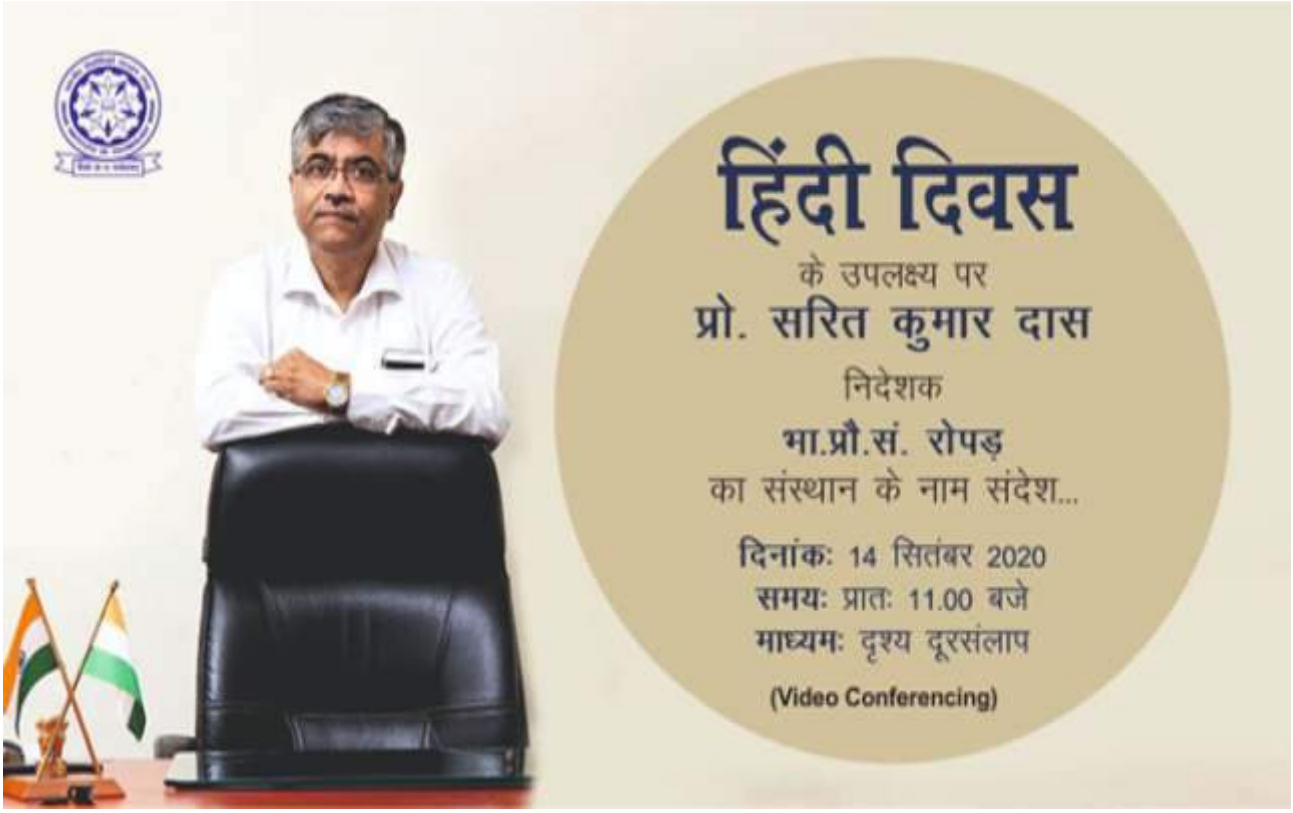
14 सितंबर 2020 को आई.आई.टी रोपड़ के निदेशक प्रो. सरित कुमार दास जी की अध्यक्षता और संबोधन के साथ आई. आई.टी रोपड़ के 15 दिवसीय हिंदी पखवाड़ा कार्यक्रम का शुभारंभ हुआ। हिंदी दिवस के अवसर पर प्रो. सरित कुमार दास, निदेशक, आई.आई.टी ने संस्थान सदस्यों से समक्ष कई प्रासंगिक विषयों पर अपने विचार साझा किए।

कोविद–19 और विज्ञान एवं प्रौद्योगिकी की भूमिका पर अपने विचार साझा करते हुए उन्होने कहा कि कोविद–19 के कारण दुनिया को यह समझ में आ गया कि विज्ञान और प्रौद्योगिकी केवल अध्ययन अध्यापन का विषय नहीं है बल्कि यह मानवजाति के संरक्षण और बचाव के लिए भी आवश्यक है और इसकी महती भूमिका है।

भारत की नई राष्ट्रीय शिक्षा नीति पर अपने विचार साझा करते हुए प्रो. सरित कुमार दास ने कहा कि चाहे तकनीक हो, विज्ञान हो अथवा कोई भी ज्ञानानुशासन हो नई राष्ट्रीय शिक्षा नीति इन सभी के उत्थान में एक निर्णायक भूमिका का निश्चित रुप से निर्वहन करेगी।

प्रो. एस. के. दास ने अपने वक्तव्य में यह भी कहा कि इस नई राष्ट्रीय शिक्षा नीति 2020 ने केवल हिंदी ही नहीं अपितु भारत की सभी भाषाओं के संवर्धन और उन्नति के बारे में गहराई से सोचा है क्योंकि इसमें जरा भी संदेह नहीं है कि हिंदी को समाज में, सरकारी कामकाज में बढ़ाना है तो हमें केवल हमारे संविधान की अनुसूची (Schedule) कि भाषाओं को ही नहीं बल्कि इस अनुसूची के बाहर की सभी भाषाओं को पास लाना होगा।

अंत में प्रो. सरित कुमार दास ने कहा कि हिंदी पर चर्चा, परिचर्चा होना और इसका विकास होना हमारे राष्ट्र के लिए आवश्यक है।



इस अवसर पर प्रो. दीपक कश्यप, विभागाध्यक्ष, सिविल अभियांत्रिकी विभाग ने कहा कि कोरना संकट समय में भी आई. आई.टी रोपड़ ने अपने अनुसंधान द्वारा राष्ट्र की सेवा में अपनी तत्परता को सिद्ध किया है और इसी क्रम में हिंदी पखवाड़ा 2020 का आयोजन भी है। प्रो. दीपक कश्यप ने कहा की हिंदी पखवाड़ा हमारे नवाचार (innovation) का सूचक है।

अंत में डॉ. अरुण कुमार, सहायक प्रोफेसर ने सभी का धन्यवाद ज्ञापित किया। इस कार्यक्रम का संचालन डॉ. सम दर्शी, सहायक प्रोफेसर ने किया।

समाचार पत्रों में हिंदी पखवाड़ा 2020 की कवरेज

पखवाड़ा के अंतर्गत विभिन्न प्रतियोगिताओं का आनलाइन माध्यम से आयोजन

हिंदी प्रकोष्ठ ने हिंदी दिवस के उपलक्ष्य में दिनांक 14 सितंबर से 28 सितंबर 2020 के दौरान कुल 19 आनलाइन प्रतियोगिता का आयोजन किया। इन 19 प्रतियोगिताओं में 05 प्रतियोगिताएं विद्यार्थियों के लिए, 11 प्रतियोगिताएं कर्मचारियों के लिए, 01 प्रतियोगिता संस्थान के सुरक्षा/सफाई आदि कर्मचारियों के लिए तथा प्रत्येकी एक प्रतियोगिता संस्थान कर्मचारियों के बच्चों और परिवारजनों के लिए आयोजित की गई थी।

सुरक्षा / सफाई कर्मचारियों की सुविधा को ध्यान में रखते हुए केवल यही एक प्रतियोगिता संस्थान के सेनेट सभागार में आयोजित की गई। शेष सभी (कुल 18 प्रतियोगिताएं) प्रतियोगिताएं आनलाइन माध्यम से आयोजित की गई।

इन सभी प्रतियोगिताओं को संस्थान के सभी स्तरों से उत्साहजनक प्रतिक्रिया प्राप्त हुई और सभी ने बढ़–चढ़ कर इन प्रतियोगिताओं में अपनी भागीदारी सुनिश्चित की।

विद्यार्थियों के लिए आयोजित सभी प्रतियोगिताओं में कुल 45 पुरस्कार प्रदान किए गए। संकाय सदस्य एवं कर्मचारियों के लिए आयोजित सभी प्रतियोगिताओं में कुल 60 पुरस्कार प्रदान किए गए।

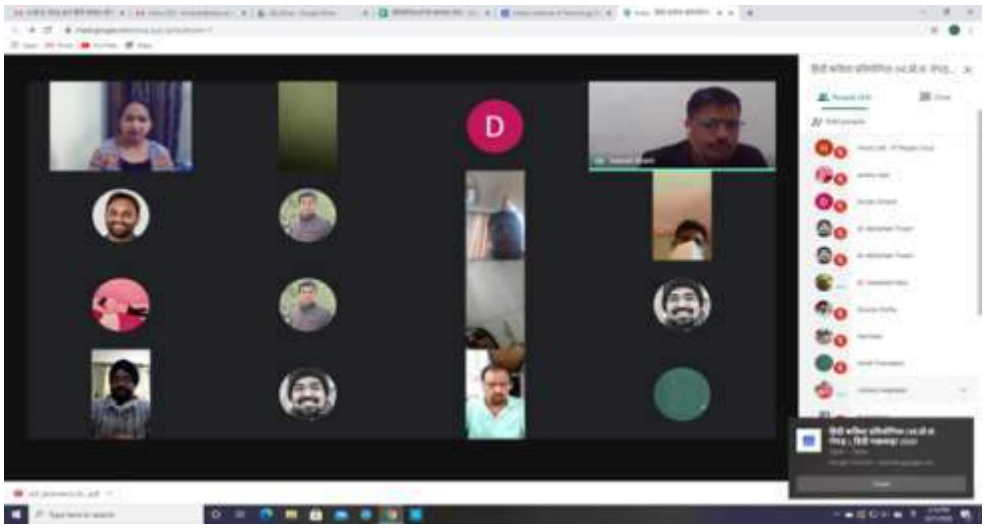
हिंदी पखवाड़ा के दौरान आयोजित की गई कुल 19 प्रतियोगिता में संस्थान के कुल 29 संकाय सदस्यों ने इसके मूल्यांकन के दायित्व का निर्वहन किया। साथ ही, हिंदी टाइपिंग प्रतियोगिता तथा कंप्यूटर पर हिंदी कार्यालय आदेश टाइपिंग प्रतियोगिता हेतु श्री अरविंद कुमार, सहायक निदेशक, केन्द्रीय हिंदी शिक्षण योजना, चण्डीगढ़ केन्द्र को इसके मूल्यांकन हेतु विशेष रुप से आमंत्रित किया गया था।

संस्थान में विभिन्न स्थानों पर हिंदी सुक्तियों लगाई गई

राजभाषा हिंदी के प्रचार–प्रसार को बढ़ावा देने के उद्देश्य से तथा राजभाषा विभाग, गृह मंत्रालय, भारत सरकार द्वारा हिंदी पखवाड़ा 2020 के संबंध में प्राप्त दिशा–निर्देशों के अनुपालन में भा.प्रौ.सं. रोपड़ के परिसर में विभिन स्थानों पर हिंदी की सुक्तियां लगाई गई।

हिंदी पखवाड़ा 2020 के दौरान नगर राजभाषा कार्यान्वयन समिति रुपनगर के सभी सदस्य कार्यालयों हेतु आनलाइन हिंदी कविता प्रतियोगिता का आयोजन

हिंदी दिवस के उपलक्ष्य पर आयोजित किए गए हिंदी पखवाड़ा 2020 के दौरान भारतीय प्रौद्योगिकी संस्थान रोपड़ द्वारा नगर राजभाषा कार्यान्वयन समिति रुपगनर के सभी सदस्य कार्यालयों हेतु दिनांक 21 सितंबर 2020 को आनलाइन हिंदी कविता प्रतियोगिता का आयोजन किया गया। इस प्रतियोगिता में नराकास रुपनगर के सभी सदस्य कार्यालयों के सदस्यों ने बढ़ चढ़ कर हिस्सा लिया जिसमें नेशनल फर्टिलाइजर्स लिमिटेड, नया नंगल, यूको बैंक शाखा रोपड़, नाइलिट, एनपीटीआई, भा.प्रौ.सं. रोपड़ आदि कार्यालयों का प्रमुखतः से समावेश था।



आनलाइन हिंदी कविता के दौरान प्रतिभागी अपनी कविता को प्रस्तुत करते हुए।

प्रतियोगिता के दौरान प्रतिभागियों ने अपनी कविता वाचन एवं गायन प्रस्तुति से इस प्रतियोगिता को एक अलग ही स्तर प्रदान किया। इसमें कुछ प्रतिभागियों ने स्वरचित तो कुछ प्रतिभागियों ने अन्य की कविताओं की प्रस्तुति की। इस प्रतियोगिता के परीक्षक के रुप में भारतीय प्रौद्योगिकी संस्थान रोपड़ के सहायक प्राध्यापक डॉ. ऋत कमल तिवारी और डॉ. पुष्पेन्द्र पाल सिंह थे। इस प्रतियोगिता हेतु नैशनल फर्टिलाइर लिमिटेड के उप प्रबंधक श्री अमरजीत बेदाम को प्रथम पुरस्कार, नैशनल फर्टिलाइर लिमिटेड के पाली अभियंता श्री राकेश वर्मा और भारतीय प्रौद्योगिकी संस्थान के वरिष्ठ सहायक श्री अंशु वेद के संयुक्त रुप से द्वितीय पुरस्कार तथा भारतीय प्रौद्योगिकी संस्थान रोपड़ की पुस्तकालय सूचना अधिकारी सुश्री हरप्रीत कौर को तृतीय पुरस्कार के लिए चयनित किया गया।

सभी विजेताओं को नराकास रुपनगर के अध्यक्ष श्री आर. के. जसरोटिया जी द्वारा प्रमाणपत्र प्रदान किए गए।

अंशु वेद, वरि. सहायक तथा सुश्री हरप्रीत कौर, पुस्तकालय सूचना अधिकारी नराकास रुपनगर के अध्यक्ष श्री आर. के. जसरोटिया जी द्वारा प्रमाणपत्र प्राप्त करते हुए।

नराकास रुपनगर की बैठक में भा.प्रौ.सं. रोपड़ के निदेशक प्रो. सरित कुमार दास मुख्य वक्ता के रुप में

दिनांक 21 अगस्त 2020 को नराकास रुपनगर की अर्धवार्षिक बैठक संपन्न हुई। इस बैठक में भारतीय प्रौद्योगिकी संस्थान रोपड़ के निदेशक प्रो. सरित कुमार दास को मुख्य वक्ता के रुप में आमंत्रित किया गया था। इस बैठक में प्रो. सरित कुमार दास जी के साथ श्रीमती सोनाली गिरी, उपायुक्त, रुपनगर मुख्य अतिथि के रुप में तथा श्री कुमार पाल शर्मा, उपनिदेशक, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार विशेष आमंत्रित के रुप में बैठक में सम्मिलित हुए।

बैठक के दौरान अपने विचार साझा करते हुए प्रो. सरित कुमार दास, निदेशक, भा.प्रौ.सं. रोपड़ ने नई राष्ट्रीय शिक्षा नीति 2020 के विभिन्न पहलुओं और विशेषताओं पर प्रकाश डाला और नई राष्ट्रीय शिक्षा नीति किस प्रकार नए भारत के निर्माण में प्रासंगिक है इस बिंदू पर सभी का मार्गदर्शन किया। प्रो. दास ने नई राष्ट्रीय शिक्षा नीति किस प्रकार से क्षेत्रीय भाषाओं के विकास और संवर्धन में महती भूमिका निभाएगी इस पर भी अपने विचार रखें। प्रो. दास ने अपने पूरे व्याख्यान में इस बात पर विशेष रुप से बल दिया कि राजभाषा हिंदी के विकास और इसके निर्धारित लक्ष्यों का मार्ग निश्चित रुप से क्षेत्रीय भाषाओं के विकास और संवर्धन से ही गुजरकर जाता है।

नराकास रुपनगर की अर्धवार्षिक बैठक के कुछ क्षण

DEPARTMENTS AND CENTRES

DEPARTMENT OF CHEMICAL ENGINEERING

Programs offered	:	B.Tech, M. Tech, PhD
No. of Students	:	B.Tech. : 86
		M.Tech. : 27
		PhD : 26
Head of the Department	:	Prof. Raj. P. Chhabra
No. of faculty members	:	14
No. of staff members	:	04
		Technical Staff : 02
		Administrative Staff : 02
Thrust Area	:	1. Catalysis and Reaction Engineering 2. Energy and Environment 3. Multiscale modeling 4. Soft Matter engineering 5. Transport Phenomena and Thermodynamics
No. of Publications	:	23

FACULTY MEMBERS

DR. ARGHYA BANERJEE
Assistant Professor
PhD(National University of Singapore)
Molecular Modelling, Computational Catalysis, Reaction Engineering, Heterogeneous Catalysis, Biomass conversion to chemicals, CO2 valorisation to chemicals

DR. ASAD H. SAHIR
Assistant Professor
PhD(University of Utah, Salt Lake City)
Energy and Environmental Engineering; Energy Systems Analysis (Techno-economic, infrastructure integration and life cycle aspects); Particle technology and reaction engineering; Combustion; Modeling and Simulation; Process Engineering and Design ; Process Systems Engineering

DR. CHANDI SASMAL
Assistant Professor
PhD(Monash University, Melbourne)
Soft Matter Engineering, Transport Phenomena and Thermodynamics, Multi-scale Modeling

DR. HIMANSHU PALIWAL
Assistant Professor
PhD(University of Virginia, Charlottesville)
Multi-scale Modeling, Process design, modeling and economics and Thermodynamics, Energy and Environment, Soft Matter Engineering

DR. MANIGANDAN S
Assistant Professor
PhD (IIT Madras)
Synthesis of polymeric and inorganic colloids; Synthesis of shape & functional anisotropic (Janus or Patchy) colloids; Self-assembly; Thermodynamics of interfacial systems; Pickering emulsion; Soft materials

DR. NAVIN GOPINATHAN
Assistant Professor
PhD(University of Bath, UK)
Indirect and direct porous media characterisation, controlled drug delivery, enhanced oil recovery, heavy oil upgrading and catalyst deactivation

DR. NEELKANTH NIRMALKAR
Assistant Professor
PhD(IIT Kanpur)
Transport Phenomena and Thermodynamics, Energy and Environment, Soft Matter Engineering

PROF. RAJ CHHABRA
Professor
PhD (Monash University, Melbourne)
Transport Phenomena, Multi-scale modeling , Soft Matter Engineering

DR. RAJAGOPAL VELLINGIRI
Assistant Professor
PhD (Imperial College London, UK)
Thin liquid films, Droplets dynamics, Multiphase flows, Low-dimensional modelling, Interfacial instabilities, Nonlinear waves, Asymptotic methods

DR. SAIKAT ROY
Assistant Professor
PhD(IIT Bombay)
Granular Mechanics, Complex Fluids, Soft Condensed Matter and related Solid Mechanics, Colloidal Gel Rheology, Jamming and Glass transition, Fluid Mechanics.

DR. SARANG P. GUMFEKAR
Assistant Professor
PhD(University of Alberta, Canada)
Functional polymers, cellulose nanocrystals, aerogels, hydrogels, water purification, nanofiltration membranes, advanced oxidation processes (AOPs), hydrodynamic cavitation, conductive adhesives, electrocatalysts, polymer gel electrolyte membranes.

DR. SWATI A. PATEL
Assistant Professor
PhD(IIT Kanpur)
Soft Matter Engineering, Transport Phenomena and Thermodynamics, Multi-scale Modeling

DR. TARAK MONDAL
Assistant Professor
PhD(IIT Delhi)
Catalysis and Reaction Engineering, Energy and Environment, Multi-scale modeling

DR. VISHWAJEET MEHANDIA
Assistant Professor
PhD(IISc, Bangalore)
Transport Phenomena and Thermodynamics, Multi-scale modeling, Soft Matter Engineering

FACILITIES

No. of Labs

UG : 04

- Fluid Flow & Heat Mass Transfer Laboratory
- Chemical Reaction Engineering & Thermodynamics Lab
- Chemical Engineering Simulation Learning Zone (1&2)
- Process Control Lab

Research: 11

Name of the lab	Name of the Head of the Research Lab	Name of the Equipments
Advanced Colloid, Interface and fluid research Laboratory	Dr. Swati A. Patel & Dr. Manigandan S.	Jacketed Reactor, Chiller, Microscope, Vacuum Oven, Vacuum Filtration Unit Sonicator, Fluorescent and Non Fluorescent Microscope, LBXD, Dip Coater, Centrifuge, homogenizer.
Multiphase Flow, Catalysis & Sustainable Energy Research Lab	Dr. Tarak Mondal & Dr. Neelkanth Nirmalkar	Fixed Bed Reactor, Gas Chromatography, Rotary Evaporator Muffle Furnace, Centrifuge, Hot air Oven, Multi parameter Kit, Nano Bubble Generator.

DRF Facilities	Dr. Neelkanth Nirmalkar, Dr. Swati A. Patel, Dr. Tarak Mondal	Nano Particle, Tracking Analysis, Zeta Sizer, Tensiometer, Master Sizer, Viscometer.
DRF Facilities	Dr. Tarak Mondal	Gas Chromatography Mass Spectrometry, Thermogravimetric Analyzer, Fourier Transform Infrared.
Complex Fluid Lab	Dr. Vishwajeet Mehandia	Rheometer, High Speed Monochromatic Camera.
Computational Fluid Dynamics	Dr. Neelkanth Nirmalkar	Workstations
DST-TIH water technology lab	Dr. Neelkanth Nirmalkar	Incubator, Hot air Oven, Rotary evaporator.
Soft matter & Microfluidic lab	Dr. Chandi Sasmal	Soft Lithography Station.
Computational Fluid Dynamics lab	Dr. Chandi Sasmal	HPC workstations.
Biomedical Engineering Lab	Dr. Vishwajeet Mehandia & Dr. Navin (Mechanical Deptt.)	Centrifuge, Fluorescent Microscope, Cell Culture Unit.
Multiscale Modelling Lab	Dr. Himasnhu Paliwal & Dr. Navin Gopinathan	Workstations.

AWARDS AND HONOURS 2020-21 (FACULTY)

- **Dr. Sarang Gumfekar** was elected as Young Associate Fellow of the Maharashtra Academy of Sciences.

INVITED LECTURES BY FACULTY

Sr. No.	Name of the faculty	Lecture	Department	Institute	Date
1	Dr. Swati A Patel	Particulate systems and particle technology	Chemical Engineering and Biotechnology	Beant College of Engg. & Technology, Gurdaspur, Punjab	11/3/2021
2	Dr. Swati A Patel	Rheology of complex fluids	Chemical Engineering and Biotechnology	Beant College of Engg. & Technology, Gurdaspur, Punjab	3/3/2021

3	Dr. Swati A Patel	Rheology of Complex Fluids	AICTE sponsored 5-Days' National Level Faculty Development Program (Online FDP) on "Fundamentals of Polymer Rheology and Soft Matter" during 15th - 19th September	Kavayitri Bahinabai Chaudhari North Maharashtra University Jalgaon (M.S)	15/9/2020
4	Dr. Swati A Patel	On the Numerical Simulation of Complex Fluids	AICTE sponsored 5-Days' National Level Faculty Development Program (Online FDP) on "Fundamentals of Polymer Rheology and Soft Matter" during 15th - 19th September	Kavayitri Bahinabai Chaudhari North Maharashtra University Jalgaon (M.S)	16/9/2020
5	Dr. Asad Sahir	"Emerging Opportunities in Performance Textiles – India & Global Markets",Building World Class Fashion Brands – From Accessing Domestic to Global Markets,	Chemical Engineering	CII Virtual Conference	29/7/2020
6	Dr. Asad Sahir	SRF meeting with JDB Govt Girls College science students, Kota	Chemical Engineering	DST , Government of Rajasthan	March 19, 2021
7	Dr. Asad Sahir	Role of Science & Technology in the fight against COVID-19	Chemical Engineering	Regional Outreach Bureau Chandigarh & Press Information Bureau Chandigarh	July 28, 2020
8	Dr. Tarak Mondal	Energy & Environmental Pollution	Department of Chemical Engineering	Beant College of Engineering & Technology Gurdaspur	March 3, 2021
9	Dr. Manigandan	Fundamentals of Colloids and Interfaces	Department of Chemical Engineering	SRM Institute of Science and Technology	May 30, 2020.
10	Dr. Sarang Gumfekar	Advanced Water Treatment Techniques for Environmental Remediation	Defence Institute of Advanced Technology	National conference on Chemistry of Chalcogenides	March 25, 2021

11	Dr. Sarang Gumfekar	Advanced Polymeric Materials for Waste Treatment in Oil Sands Industry	Bheemanna Khandre Institute Of Technology, Bhalki Department Of Chemical Engineering	A Five Day Online Faculty Development Program (FDP) on Recent Innovations In Chemical Engineering	June 29, 2020
12	Dr. Sarang Gumfekar	Advanced Water Treatment 1Techniques for Environmental Remediation	Department of Chemical Engineering	Beant College of Engineering & Technology Gurdaspur	March 02, 2021
13	Dr. Neelkanth Nirmalkar	Energy & Environmental Pollution	Department of Chemical Engineering	Beant College of Engineering & Technology Gurdaspur	March 4, 2021

LECTURES BY VISITING EXPERTS

Sr. No.	Name of the experts with affiliation	Topic	Date
1.	Dr. Mahesh Murthy (SABIC), Proteep Ghosh (DNV GL),Hirak Dutta (Nayara Energy), S.P . Garg (GAIL), Rahul Raman (Kaypear),	"Exploring Career Options in Process Safety as Chemical Engineers"	July 23,2020
2.	Siddhartha Guharay (BECHTEL)	Chemical Process Design	February 26, 2021
3.	Nilesh Shah, Group Principal Technologist – Process Design & Engineering, SRF Chemicals	Chemical Process Technology at SRF Chemicals	November 3, 2020
4	Prof. Sirshendu De	Innovative Indigenous Technologies: From the Laboratory to the Field	March 26, 2021

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

Ongoing Projects:		
S. no.	**Name of the faculty**	**Major Research Project**
1	Dr. Saikat Roy	Spatial stress correlations in strong colloidal gel and its connection to yielding/plasticity (SERB-DST)
2	Dr. Neelkanth Nirmalkar	DST NMCPS (110 Cr)
Completed Projects:		
1	Dr. Neelkanth Nirmalkar	Design of nanobubble generator

DEPARTMENT OF CHEMISTRY

Programs offered	:	M.Sc & PhD
No. of Students	:	MSc. : 49 (26 in 2019 Batch & 23 in 2020 Batch)
		PhD : 84
		Post-Doctoral Fellows/NPDF : 7
Head of the Department	:	Dr. T.J. Dhilip Kumar
No. of faculty members	:	15 (14 Regular & 1 Visiting professor)
No. of staff members	:	6
		Technical Staff : 5
		Administrative Staff : 1
Thrust Area	:	Sustainable Energy
		Materials and Drug design
No. of Publications	:	70

FACULTY MEMBERS

Dr. Anupam Bandyopadhyay
Assistant Professor
PhD (IISER-Pune)
Biomimetic Chemistry, Peptide-Based Diagnostics and Therapeutics for the Treatment of Cancer and Tropical Diseases.

Dr. Asit K Chakraborti
Professor
PhD (IACS, Calcutta)
Synthetic Organic and Medicinal Chemistry

Dr. Avijit Goswami
Associate Professor
PhD (Heidelberg University, Germany)
Organic Synthesis and Polymer Chemistry

Dr. C. M. Nagaraja
Associate Professor
PhD (Indian Institute of Science Bangalore)
Inorganic and Materials Chemistry

Dr. C. N.Tharamani
Associate Professor
PhD (Bangalore University)
Electrochemistry, Fuel Cells, Nanostructured Materials, Electrocatalysis, Metal Finishing

Dr. Debaprasad Mandal
Associate Professor
PhD (Indian Institute of Technology Kanpur)
Organometallics and Polymer

Dr. Indranil Chatterjee
Assistant Professor
PhD (Westfälische Wilhelms-University, Muenster, Germany)
Organic Synthesis and Methodology

Dr. Manoj Kumar Pandey
Assistant Professor
PhD (Indian Institute of Technology Madras)
Magnetic Resonance: Methods and Applications

Dr. Narinder Singh
Associate Professor
PhD (Guru Nanak Dev University Amritsar)
Supramolecular Chemistry and Material Sciences

Dr. Prabal Banerjee
Associate Professor
PhD (National Chemical Laboratory) Pune
Synthetic Organic and Medicinal Chemistry

Dr. Rajendra Srivastava
Associate Professor
PhD (National Chemical Laboratory Pune)
Catalysis and Materials Chemistry

Dr. Soumyajit Das
Assistant Professor
PhD (Indian Institute of Science Education & Research Kolkata)
Organic Chemistry, Functional π-Electron Systems, Biradicals

Dr. Sudipta Kumar Sinha
Assistant Professor
PhD (Indian Institute of Technology Kharagpur)
Theoretical and Computational Biophysical Chemistry

Dr. T. J. Dhilip Kumar
Associate Professor & Head
PhD (Indian Institute of Technology Madras)
Theoretical and Computational Chemistry

Dr. Yashveer Singh
Associate Professor
PhD (University of Allahabad)
Biomaterials and Drug Delivery

FACILITIES

No. of Labs : UG : 2
PG : 3
Research : 21

New Labs

Sr. No.	LAB NUMBER	NAME OF LABS	NAME OF THE HEAD OF THE RESEARCH LAB	NAME OF THE EQUIPMENTS PURCHASED (APRIL 2020 TO MARCH 2021)
1	103	INSTRUMENT LAB 1	HOD	N.A.
2	107	INSTRUMENT LAB 2	HOD	N.A.
3	201	MSc. COMPUTATIONAL LAB	HOD	N.A.
4	203	UG LAB 1	Dr. C. M. Nagaraja	N.A.
5	206	UG LAB 2	Dr. C. M. Nagaraja	N.A.
6	209	PG LAB 1	Dr. Avijit Goswami	N.A.
7	210	MEASUREMENT TECHNIQUE LAB 1	HOD	N.A.
8	301	SENSOR DEVELOPMENT LAB	Dr. Narinder Singh	U.V. Flash Spectrophotometer
9	302	SHARING LAB 302	Dr. Narinder Singh & Dr. Avijit Goswami	N.A.
10	303	HOMOGENEOUS CATALYSIS AND ORGANIC SYSTNESIS LAB	Dr. Avijit Goswami	N.A.
11	307	CATALYSIS AND MATERIAL SYNTHESIS LAB	Dr. Rajendra Srivastava	UV- Vis Spectrophotometer
12	308	SHARING LAB 308	Dr. Rajendra Srivastava & Dr. Yashveer Singh	N.A.
13	309	BIOMATERIAL LAB	Dr. Yashveer Singh	N.A.
14	312	PG LAB 2	Dr. Avijit Goswami	N.A.
15	401	TCN LAB	Dr. C. N. Tharamani	N.A.
16	402	SHARING LAB 401	Dr. C. N. Tharamani & Dr. Debaprasad Mandal	Gas Chromatography Instrument
17	403	DPM LAB	Dr. Debaprasad Mandal	N.A.
18	404	INORGANIC MATERIAL LAB	Dr. C. M. Nagaraja	N.A.
19	405	SHARING LAB 405	Dr. C. M. Nagaraja & Dr. Prabal Banerjee	N.A.
20	406	ORGANIC SYNTHESIS AND MEDICINAL CHEMISTRY	Dr. Prabal Banerjee	N.A.
21	409	BIOMIMETIC PEPTIDE ENGINEERING LAB	Dr. Anupam Bandyopadhyay	High Performance Liquid Chromatography, Freezer Dryer/ Lyophilizer

22	410	QUANTUM DYANAMIC LAB	Dr. T. J. Dhilip Kumar	N.A.
23	411	MAGNETIC RESONANCE LAB	Dr. Manoj Kumar Pandey	N.A.
24	412	LAB No. 412	Dr. Sudipta Sinha	N.A.
25	414	STRUCTURAL ORGANIC CHEMISTRY LAB	Dr. Somyajit Das	N.A.
26	415	IC LAB	Dr. Indranil Chatterjee	Electrochemical Analyser

AWARDS AND HONOURS 2020-21 (Faculty)

Dr. Prabal Banerjee has received the prestigious Bronze medal of the Chemical Research Society of India (CRSI) for the year 2020.

Dr. Indranil Chatterjee received Institute Best Teacher Award (2020).

Prof. A. K. Chakraborti received the Professor P. K. Bose Memorial Award of the Indian Chemical Society for the year 2019.

Dr. Anupam Bandyopadhya selected as an Editorial member for an internationally reputed journal Protein and peptide letters.

AWARDS AND HONOURS 2020-21 (Student)

Mr. Pankaj Kumar, PhD Scholar has been selected for Newton-Bhabha fellowship - PhD placement 2019-20.

Ms. Ritika, PhD Scholar has been awarded for PMRF fellowship.

Mr. Vatan Chawla, PhD Scholar has been awarded for PMRF fellowship.

Mr. Mukesh Kumar, PhD Scholar has been awarded Dr. Upadhyayulu V. Rao Memorial Award from Indian Chemical Society (ICS) for best oral presentation in the International conference 57th Annual Convention of Chemists (27-29 December 2020).

Ms. Neha Thakur, Mr. Alankar Kafle, Mr. Divyani Gupta, Mr. Tino S Thomas PhD Scholars each students have been awarded Indian Chemical Society Research Excellence award from Indian Chemical Society (ICS) in the different sections for best oral presentation in the International conference 57th Annual Convention of Chemists (27-29 December 2020).

INVITED LECTURES BY FACULTY

Dr. Anupam Bandyopadhyay

- Delivered an invited seminar (online) in an international webinar series "Recent Advances in Chemical Science for human kind" organized by the Department of Chemistry, T. N. B. College, TMBU, Bhagalpur on 13-14 June 2020.
- Delivered an invited seminar on“Technology-assisted antibody-mimetic discovery: Prospect in identifying SARS-CoV-2 hits" at Dept. of Chemistry, Adamas University, Kolkata, on 6th June 2020.

- Delivered an invited talk (online mode), Engineering peptides for disease related biomolecule recognition, online lecture of APJ Abdul Kalam faculty lecture series, IIT Ropar, 30th September 2020.

Prof. Asit K. Chakraborti

- Delivered an Invited E-talk "Drug Discovery Research Keeping the Pace with Newer Development in Chemistry," in the Virtual Conference on "Cross-Cutting Edge Research in Organic and Medicinal Chemistry." June 24, **2020**. Organised by Department of Chemistry BITS Pilani, Pilani Campus in Association with Indian Society of Chemists and Biologists, Lucknow.
- Delivered an Invited E-talk "The Role of Green Chemistry in Drug Discovery and Development in the Context of Environmental Pollution." July 17, **2020**. International Webinar On "The Role of Green Chemistry in Controlling Environment and Ocean Pollution" organized by the Department of Chemistry, Gangasheel Mahavidyalaya Nawabganj, Bareilly, Uttarpradesh, Bharat.
- Delivered an Invited E-talk "Sustainable Chemistry in Drug Development and Discovery," in the National Webinar on "Current Perspectives in Chemical Sciences." July 21, **2020**. Organised by Department of Chemistry, Bhatter College, Dantan, Paschim Medinipur, WB, in Collaboration with Indian Chemical Society.
- Delivered an Invited E-talk "Green Synthesis of Drugs and Pharmaceuticals: Exploring Organic Reactions in Aqueous Medium," in the National Webinar on "Sustainable Synthesis of Pharmaceuticals and Basics of Drug Discovery." July 25, **2020**. Organised by Department of Chemistry, Krishnagar College, Krishnagar, Nadia, WB to celebrate 175th Anniversary.
- Delivered an Invited E-talk "Green Chemistry Research: Scope and Implementation in Academics Through Novel Concepts," in the Virtual Value Added Course on "Green Chemistry: Through Original Research." August 01, **2020**. Organised by Department of Chemistry, Indus International University, Bathu, Una, Himachal Pradesh.
- Delivered an Invited E-talk "Drug Discovery in the Context of Sustainable Chemistry Development,"on August 03, **2020**. International Seminar on "Recent Advances in Chemistry & Material Sciences – 2020 (RACMS – 2020)" organized by the Indian Chemical Society in Collaboration with the American Chemical Society (India International Chemical Science Chapter) in Commemoration with the 159th Birth Anniversary of Acharya Prafulla Chandra Ray.
- Delivered an Invited E-talk "In Pursuance of Sustainable Chemistry: Concepts and Applications" Online lecture of APJ Abdul Kalam faculty lecture series, IIT Ropar, 12th August 2020
- Delivered an invited lecture (online) "Green Chemistry Approaches in Pharmaceutical Education and Research," **Sept 15**, **2020** in the Online Short Term Course on Advances in "Pharmacy Education." Organized by National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh.
- Delivered an online plenary lecture "Sustainable Practices in Drug Discovery and Development." November 06, 2020. International Seminar on "International Virtual Conference on Drug Discovery and Delivery (IVCDDD – 2020)" organized by the Department of Pharmacy, BITS Pilani, Pilani Campus, Rajasthan.

Dr. C. M. Nagaraja

- Delivered an invited E-talk "Chemical Fixation of Carbon Dioxide (CO2) into Value-Added Chemicals and Production of Clean Fuel,Hydrogen (H2)", Online lecture of APJ Abdul Kalam faculty lecture series, IIT Ropar, 8TH July 2020
- Delivered an invited talk on Chemical Fixation of Carbon Dioxide (CO2) into Value-Added Chemicals, in the Faculty Development Program on Recent Advances in Chemical Sciences on 17th July 2020 organized by Department of Chemistry SRM Institute of Science and Technology, Kattankulathur.

Dr. Debaprasad Mandal

- Delivered an invited talk (online mode), Alkenyl and Perfluoroalkyl Calixpyrroles: From Ring-Closing Metathesis to Rapid removal of fluoride and Perfluoro pollutants from water, NIT Manipur, 20th October 2020.
- Delivered an invited talk (online mode), Holy Grail of chemistry towards a sustainable society, online lecture of APJ Abdul Kalam faculty lecture series, IIT Ropar, 25th Nov 2020
- Delivered an invited talk (online mode), Development of high energy density rechargeable Li- and Na-ion batteries, Chandigarh University (MET-FCS-2021), 23rd April 2021.

Dr. Indranil Chatterjee

- Delivered an invited talk (online mode), Advantages of Doing Nitrosoarene Chemistry, IIU Himachal, 31st August 2020.
- Delivered an invited talk (online mode), Radical Reactivity of Nitrosoarenes, IIT Goa, 6th November 2020.
- Delivered an invited talk (online mode), Radical Reactivity of Nitrosoarenes, NIT Manipur, 9th November 2020.
- Delivered an invited talk (online mode), HFIP-A Game Changer in Catalysis, ACS-SBQ Virtual Meeting on Organic Synthesis and Catalysis (VMOSC), 15th December 2020.
- Delivered an invited talk (online mode), Strategies in Asymmetric Catalysis, Chemistry Department, Ramakrishna Mission Vidyamandira, 20th January 2021.

Dr. Manoj Kumar Pandey

- Delivered an online guest lecture on "An Introduction to the Nuclear Magnetic Resonance Spectroscopy" in Government Polytechnic Kangra, HP on 17th December 2020
- Delivered an online invited lecture on "Solid-state NMR Spectroscopy: Basic Principles and Applications" MNIT Jaipur on 06th January 2021.

Dr. Narinder Singh

- Delivered an invited E-talk "Wealth from Waste: Water Purification, Sensors & Materials Extractions" Online lecture of APJ Abdul Kalam faculty lecture series, IIT Ropar on 22nd April 2020

Dr. Rajendra Srivastava

- Delivered an invited talk on "Tailoring the Porosity and Active Sites in Designing the Heterogeneous Catalysts" in the Virtual Conference "ChemCatCon 1.0-Reactions on Surfaces), IIT Gandhinagar, 11-12 July 2020
- Delivered an invited talk (online mode) in the Virtual 5-days ATAL program in the area of Sensors Technology during September 21 -25, 2020, Electrochemical Sensor Platforms

Based on Nanostructured Metal Oxides, and Zeolite-Based Materials, Department of Applied Sciences of National Institute of Technical Teachers Training and Research Chandigarh, 25th September 2020.

- Delivered an online talk "Designing the Heterogeneous Catalysts by Introducing the Porosity and Implanting Active Sites" in a virtual international conference on "Nanomaterials and Sustainable Application", Institute of Chemical Technology Mumbai, Marathwada Campus Jalna India, 3rd Dec 2020
- Delivered an online talk Catalysis Serving to Humankind: Opportunity for Everyone from Students to Experienced Researchers, Online lecture of APJ Abdul Kalam faculty lecture series, IIT Ropar, 10th Feb 2021

Dr. Soumyajit Das

- Delivered an invited talk (online mode), toward Open-shell Polycyclic Hydrocarbons, online lecture of APJ Abdul Kalam faculty lecture series, IIT Ropar, 2nd Dec 2020.

Dr. Sudipta Kumar Sinha

- Delivered an online talk on Faculty seminar series at Mulana Abul Kalam Azad University of technology, Haringhata, Nadia WB, 1-5 March 2021

Dr. Yashveer Singh

- Delivered an Invited E-talk at Veer Bahadur Singh Purvanchal University, Jaunpur on 5th June 2020.
- Delivered an invited talk (online) on Nanotechnology to treat bacterial infections, *Refresher Course on Application of Nanoscience in Modern Day Research and Technology*, Department of Applied Science, National Institute of Technical Teachers Training and Research, Chandigarh, 12 June 2020.
- Delivered an invited talk (online) on Nanotechnology for diagnostics and therapy, *Refresher Course on Application of Nanoscience in Modern Day Research and Technology*, Department of Applied Science, National Institute of Technical Teachers Training and Research, Chandigarh, 12 June 2020.
- Attended "ONLINE WORKSHOP ON WOMEN EQUALITY SENSITISATION" IIIT Allahabad, 10-11 July 2020
- Delivered an invited talk (online) on Nanomaterials for biomedical applications - I, *Materials and devices for advanced applications*, Department of Applied Science, National Institute of Technical Teachers Training and Research, Chandigarh, 29 July 2020.
- Delivered an invited talk (online) on Nanomaterials for biomedical applications - II, *Materials and devices for advanced applications*, Department of Applied Science, National Institute of Technical Teachers Training and Research, Chandigarh, 29 July 2020.
- Delivered an invited talk (online) on "International Conference on Biomedical Materials Innovation-2020, The Society for Biomaterials and Artificial Organs-India (SBAOI), Society for Tissue Engineering & Regenerative Medicine, and Bharathiar University are co-organizing, 8th Dec 2020
- Delivered an invited talk on INTERNATIONAL e-SYMPOSIUM on SMART POLYMERS: APPLICATIONS IN CURRENT SCENARIO (SP-ACS), Jointly Organized By Amity Institute of Applied Sciences & Asian Polymer Association, Amity University, Noida, 16th Jan 2021.
- Delivered an online talk Interdisciplinary Research in Science and Technology, MDU Rohtak, 4th March 2021.

VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Pankaj Kumar	Cardiff University, United Kingdom	13.11.2020 to 15.03.2021

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

Sr. No.	Funding Agency	Name of Faculty Member	Title of Project	Total Sanctioned Amount	Project Status	Start Date	Duration
1	DST	Dr. Rajendra Srivastava	Synthesis and catalytic investigations of mesoporous metal-organic framework	0.47	Complete		extended for three months (no cost) till 22nd September 2020
2	DST	Dr. Yashveer Singh	Acemannan-based nanogels to target microbicides to mucosal and sub-mucosal regions of vagina to prevent HIV-1 infection	0.41	Complete	15.03.2017	Budget revised 4060326 instead of 4212560
3	INDO-MAXICO-DST	Dr. Narinder Singh	Photo degradation of azo dye contaminants by new hybrid ionic liquid decorated	0.35	Running		
4	DST	Dr. Manoj Kumar Pandey	Development of theoretical models to describe ^{14}N- ^{1}H decoupling in solid-state NMR	0.39	Running		No cost extension up to 27.03.2021
5	Industrial Consultancy	Dr. Narinder Singh	Analysis of soil and ground water from solar evaporation ponds of M/S Montari Industries	0.15	Running		

6	Industrial Consultancy	Dr. Narinder Singh	Process Development and Environmental Analysis within the Premises of Chemical Industry	0.22	Complete	1.10.2018	5 Years
7	DST	Dr. Ravi Mohan Prasad (PI) and Dr. Manoj Kumar Pandey (Co-PI)	"Thermoresistant Polymer-Derived Microporous Ceramic Membranes for Separation of Hydrogen and Carbon Monoxide/Carbon Dioxide in Hydrogen Production"	0.70	Running		
8	DST	Department of Chemistry	DST (FIST Program)	1.65	Running	22.03.2019	
9	SERB	Dr. C M Nagaraja	Development of Porous Metal-Organic Frameworks (MOFs) for Catalytic Conversion of Carbon dioxide to Fine chemical	0.53	Running	20.03.2019	
10	SERB	Dr. Gurpreet Kaur, SGGS College, SGGS College, Mentor Dr. Dr. Narinder Singh	Teachers Associateship For Research Excellence (TARE)	0.18	Running	22.11.2018	3 Years
11	SERB	Dr. Avijit Goswami	Synthesis of 2-Azido Pyridines, Triazole Substituted Pyridines and Cyano Substituted Triazoles via Transition Metal Catalyzed Chemos elective [2+2+21 Cycloaddition Reactions of Cyanogen Azide with Diynes	0.45	Running	22.03.2019	
12	SERB	Dr. Sudipta Kumar Sinha	Controlled Molecular Transportation Through Engineered Nanopores: Design and Application in Biomedical Sciences	0.27	Running	20.03.2019	

13	SERB	Dr. Indranil Chatterjee	Photo-Organocatalytic C-F Bond Activation; Asymmetric Synthesis of Difluorobenzylated Compounds	0.25	Running	16.03.2019	
14	SERB-DST	Dr.Tharamani C Nagaiah	Advanced materials towards electrocatalytic oxygen evolution reaction for sustainable energy conversion	0.58	Running	14.05.2019	
15	CSIR	Dr. Prabal Banerjee	Lewis Acid Catalyzed (3+3) Annulation of Donar -Acceptor Cyclopropane and Indonyl Alcohol : One Step Synthesis of Substituted Carbazoles	0.13	Running		
16	CSIR	Dr. Rajendra Srivastava	Synthesis and Catalytic Applications of Magnetic and Non-Magnetic Spinels Based Multi-Functional Catalysts	0.06	Running	01.05.2019	
17	CSIR	Dr. Avijit Goswami	Synthesis of 2-heteroatom sudstituted pyridines via transition metal catalyzed cycloaddition reactions: An approach to biologically active molecule	0.14	Running	01.04.2019	3 Years
18	Industrial Consultancy	Dr. Asad H. Sahir and Dr N. Singh PI Prof. Harpreet Singh Co-PI	Proposal for conducting a Scientific study towards measurement/quantification of production of extra neutral Alcohol (ENA)	0.30	Running	25.07.2019	8 Months
19	SERB-SRG	Dr. Anupam Bandyopadhyay	Modulating peptide receptor engineering strategy for cancer biomarker detection	0.24	Running	06.11.2019	2 years
20	SERB-SRG	Dr.Soumyajit Das	Design and Syntheses of Diradicaloid Cyclohepta[def]fluorene Derivatives: Closed-Shell or Open-Shell?	0.28	Running	15.11.2019	2 years

21	Industrial Consultancy	Dr. Narinder Singh-CI and Prof. Harpreet Singh- Co-CI	Deveplopment of coating to resist the Microbial attack on the surface of given samples	0.10	Running	08.11.2019	5 months
22	Industrial Consultancy	Prof. S.K. Das, Prof. Harpreet Singh, Dr. Narinder Singh, S.S. Padheee, Dr. Puneet Goyal, Dr. Asad H. Sahir	Infrastructure and cirriculum Development for Shri Guru Gobind Singh skill Institute, Shri Chamkaur Sahib	0.06	Running		
23	Industrial Consultancy	Dr. Rajendra Sricastava	Proposal for the Evaluation of Desiccant Properties of the Materials	0.06	Running		2 years
24	Industrial Consultancy	Dr. Narinder Singh and Dr. Suman Kumar (CI) and Prof. J.S. Kanwar, IET Bhaddal, (Co-CI)	Automating the Counting of Trays USING IoT and Sensors	0.03	Running	23.09.2019	4 month
25	SERB-CRG	Dr. Prabal Banerjee	Asymmetric organocatalytic activation of cyclopropane carbaldehydes towards the construction of enantioenriched annulated products	0.50	Running	25.03.2020	
26	Industrial Consultancy	Dr. Narinder Singh (CI) and Prof. Harpreet Singh (Co-PI)	Investigation of Nickel and Chromium Content in the Sludge of Handtool Industries at Jalandhar	0.11	Running	13.01.2020	2 months
27	Industrial Consultancy	Dr. Narinder Singh	Design and Synthesis of Benzimidazolium and Pyridinium Based Membranes	0.04	Running	22-05-2020	One month
28	Industrial Consultancy	Prof. C. R. Suri and Dr. Narinder Singh (CI), Prof. Harpreet Singh (Co-CI)	Synthesis of Organic Cation Based Copper Nanoclusters: Antigen-Antibody Based Sensor System	0.07	Running	23.05.2020	one month
29	Industrial Consultancy	Dr. Narinder Singh	Development of Coatings to Resist the Microbial Attack on the Surface of Given Samples	0.03	Running	26.05.2020	one month

30	Industrial Consultancy	Prof. C. R. Suri and Dr. Narinder Singh (CI), Prof. Harpreet Singh (Co-CI)	Conjugate and Coating Development for the Fabrication of Sensor Kit and Related Applications	0.04	Running	22-May-20	one month
31	DST-AGRI	Dr. Narinder Singh	Fabrication of Handheld Device for On-site Application: Pesticide Monitoring in Environment and Agriculture Products	0.58	Running	11.9.2020	3 years
32	DAE	Dr. Indranil Chatterjee	Development of a urea derivative compound (D27) as a potential drug against SARS-CoV-2	0.33	Running	28.10.2020	18 Months
33	DST-SEED	Dr. Narinder Singh	Fabrication and training for contamination free food packing	0.29	Running	12.11.2020	3 years
34	SERB-CRG	Dr. Rajendra Srivastava	Unique mild processes based on catalytic transfer hydrogenolysis/hydrogenation and photocatalysis for lignin valorization: Eliminating the use of high temperatures and non-renewable H2	0.47	Running	22.12.2020	3 years
35	Industrial Consultancy	Dr. Asit K Chakraborti	Expert Opinion on an Indian Patent Application	0.04			
36	Industrial Sponsored Project	Dr. Rajendra Srivastava	Synthesis of Nanocrystalline Zeolites having Inter/Intra-crystalline Mesoporosity of Different Framework Structure	0.71	Running	10.12.2020	Two years
37	SERB-CRG	Dr. TJ Dhilip Kumar	Ultracold Molecules and Controlled Chemistry by Machine Learning	0.28	Running	19.12.2020	3 years
38	SERB	Dr. Nagaraj Anbu under the mentorship of Dr. C.M Nagaraja	National Post-Doctoral Fellowship	0.20			2 years

39	SERB-MTR	Dr. Sudipta Kumar Sinha	On the General Phenomenon of Dynamic Disorder of Complex Enzymatic Network?	0.07	Running	28.12.2020	3 years
40	DST-HPC Applications, National Superco-mputing Mission (NSM) NSM R&D-HPC	Dr. T. J. Dhilip Kumar	Modeling of Atmospheric Reactions by Quantum Dynamics on the Coupled Potential Energy Surfaces	0.16	Running	24-03-2021	2 years

DEPARTMENT OF CIVIL ENGINEERING

Programs offered	:	B.Tech.	:	130
		M.Tech.	:	25
		PhD	:	43
Head of the Department	:	Dr. Naveen James		
No. of faculty members	:	16		
No. of staff members	:	04		
		Technical Staff	:	02
		Administrative Staff	:	02
Thrust Area	:			

- Structures
- Geotechnical
- Water Resources
- Geomatics
- Transportation
- Environment

No. of Publications : 32

FACULTY MEMBERS

Dr. Aditya Singh Rajput
Assistant professor
PhD, IIT Roorkee
Study the effects of corrosion on the structural response of RC elements
Study the structural performance under fire and elevated temperatures

Prof. Deepak Kashyap
Professor
PhD, IIT Roorkee
Water Resources, Groundwater, Modeling and Simulation

Dr. Ickkshaanshu Sonker
Assistant Professor
PhD IIT Roorkee
Groundwater modeling, Irrigation, Water resources engineering, Open channel flow, Hydrology.

Dr. Indramani Dhada
Assistant Professor
PhD, IIT Kanpur
Environmental Engineering Indoor and ambient air quality assessment, Source apportionment studies and modeling, Health Risk Assessment of pollutants Fate processes of organic pollutants, Solid and Hazardous waste Management, Agricultural impact on climate change Environmental Impact Assessment, Water Treatment Pollution Control Technologies

Dr. L.Vijay Anand
Assistant Professor
PhD, Auburn University, USA
Environmental Engineering, Geochemical Processes Occurring at Mineral-Water Interface, Contaminant Transport Processes: Experiments and Modeling, Eco-friendly Technologies for Contaminant Remediation, Actinide Chemistry

Dr. Mitesh Surana
Assistant Professor
PhD, IIT Roorkee
Risk-based Seismic Design of Buildings, Seismic Response Evaluation of Structures, Nonlinear Modelling and Analysis of RC Buildings, Seismic Design of Acceleration Sensitive Non-structural Components, Building Typologies and Seismic Vulnerability of Indian Housing Stock, and Seismic Risk in Hilly Regions.

Dr. Muthulingam.S
Assistant Professor
PhD, IIT Madras
Advanced design of steel and concrete structures, Reliability and risk assessment of new and existing infrastructure systems.

Dr. Naveen James
Assistant Professor
PhD, Indian Institute of Science, Bangalore
Dynamic behaviour of soils, Liquefaction, Seismic Hazard Assessment & Microzonation, Site characterization, Site response studies, Landslide Hazard Assessment, GIS applications in hazard studies

Dr. Putul Haldar
Assistant Professor
PhD, IIT Roorkee
Seismic Vulnerability and Risk Evaluation of Structures, Seismic Evaluation and Retrofitting of Structures, Performance-Based Design of Structures Nonlinear Modeling and Analysis of Structures, Structural Engineering and Dynamics

Dr. Raheena M
Assistant Professor
PhD, IIT Madras
Soil characterization, Characterization of expansive clays, Ground Improvement, Unsaturated soil mechanics

Dr. Rahul T.M
Assistant Professor
PhD, Indian Institute of Science (IISc) Bangalore
Sustainable Transportation system planning, Travel behavior analysis, Non Motorized Transport planning, Econometric Modelling

Dr. Ratan Sarmah
Assistant Professor
PhD, Indian Institute of Technology Guwahati
Subsurface Hydrology, Mathematical Modeling of Subsurface Flow

Dr. Reet Kamal Tiwari
Assistant Professor
PhD, IIT Roorkee
Geospatial technology applications in the field of Snow, Ice and Glaciers, Climate change, Natural resources management, Environmental monitoring and planetary sciences

Dr. Resmi Sebastian
Assistant Professor
PhD, Indian Institute of Science, Bangalore
Wave propagation in rocks – under low strain loading and high strain loading, Controlled ground vibrations, Stability analysis and design of underground structures, Ground vibration isolation of structures, Earthquake geotechnical engineering

Dr. Sagar Rohidas Chavan
Assistant Professor
PhD, Indian Institute of Science, Bangalore
Rainfall-runoff modeling, Regionalization of hydrological extremes, Regional frequency analysis of extreme rainfall and floods, Prediction in ungauged basins, Multi-fractal analysis of rainfall and flood, Climate change impacts on hydrological processes, Dam safety analysis and inundation studies

Dr. Sayantan Ganguly
Assistant Professor
PhD, Indian Institute of Science, Bangalore
Hydrogeology, Flow and transport through porous media, Geothermal Energy, Thermal energy storage in subsurface

FACILITIES

No. of Labs : UG : 08
PG : 01
Research : 02

Name of the labs :

- Structural Analysis Lab
- Concrete Technology and Testing Lab
- Geotechnical Engineering Lab
- Geomatics lab
- Hydraulics Engineering Lab
- Computer Added Design Lab
- Transportation Engineering Lab
- Environment Engineering Lab
- Soil Water Plant Lab
- Computer Lab(PG)

Name of the Equipments : **(Research Labs)**

S.No	Name of Equipment
1	Weighing Type Lysimeter
2	Tilting Flume 15 meter
3	Automatic Weather Station
4	Total Station
5	GNSS Receiver R10 DGPS
6	3D Topographic Laser Scanner
7	UAV
8	Trimble Handheld TDC 100
9	Ion Chromatography
10	Rainfall & Run off Simulator
11	Water Hammer & Surge Tank
12	Remotely Operated Equipped Eco-sounder Boat
13	Inclined Drainage & Seepage Tank
14	Pressure Plate Apparatus
15	Guleph Permeameter
16	Automatic Servo Hydraulic Controlled Flextural Testing Machine
17	Automatic Servo Hydraulic Compression Testing machine
18	NDT Equipment
19	Salt Spray Chamber
20	Accelerated corrosion setup
21	Hydraulic Cyclic Triaxial Apparatus
22	Resonant Column Apparatus
23	Plate Load Test Apparatus
24	Split Shear Plates

AWARDS AND HONOURS 2020-21 (FACULTY)

Dr. Putul Haldar

- Invited to be session chair for session 1 dated 18 March 2021 in the International Conference on Advancements and Innovations in Civil Engineering - (IC-AICE-2021), organized by Department of Civil Engineering, KDK College of Engineering, Nagpur scheduled from 18-20 March 2021.

Dr. Sayantan Ganguly

- Fellowship from International Geothermal Association (IGA) to attend the "World Geothermal Congress 2020" in Reykjavik, Iceland.

Dr. Rahul T.M

- Executive Board Member (2021-26). Transportation Research Group of India.

AWARDS AND HONOURS 2020-21 (STUDENT)

1. Shreya Ganguly-Global Talent Internship 2021, Ministry of Science and Technology, Govt. of Taiwan.

2. Mr. Luvkesh Attri (B.Tech Civil Engineering 2017 Batch) has been selected as one of the recipients of the certificate for the Outstanding Posters in the IPPC2020 (an International Poster Presentation Competition 2020). IPPC2020 was organized by National Young Academy of Bangladesh (NYAB), participants of this the event were both undergraduate and graduate-level students of Bangladesh, India, Sri Lanka and Thailand. He was in selected few among 243 submitted posters. He presented his work titled "Spaceborne C-band SAR Remote Sensing based flood mapping and Run-Off estimation for 2019 flood scenario in Rupnagar, Punjab, India" By Luvkesh Attri, Akshar Tripathi, and Reet Kamal Tiwari.

3. Mr. Akshar Tripathi (PhDScholar) was awarded Best Oral Presentation for the paper titled "A remote sensing based study of atmospheric ozone concentration amid Covid-19 lockdown over India using Sentinel-5P Satellite Data" By Akshar Tripathi and Reet Kamal Tiwari at online national webinar "Protection of ozone layer: Respect to Planet Earth (POPE-2020)" organized by National Environment Science Academy (NESA), New Delhi and ISRS Ludhiana Chapter, PRSC, Ludhiana.

INVITED LECTURES BY FACULTY

S.No	Name of the Faculty	Lecture	Department	Institute	Date
1	Dr. Putul Haldar	Creating Drawing Features/Objects using AutoCAD	Civil Engineering	MNIT Jaipur	15th -26th March 2021
2	Dr. Putul Haldar	Seismic Risk Assessment of Structures	Civil Engineering	College of Engineering, Roorkee	26th Dec 2020-23rd Jan 2021
3	Dr. Putul Haldar	Modelling of Unreinforced Masonry Infilled RC Frames	Civil Engineering	Prof Ram Meghe College of Engineering & Management, Badnera	30th Nov 2020-5th Dec 2020

4	Dr. Putul Haldar	Modelling of Unreinforced Masonry Infilled RC Frames	Civil Engineering	Prof Ram Meghe College of Engineering & Management, Badnera	28th Sep 2020-3rd Oct 2020
5	Dr. Putul Haldar	Seismic Design of RC Frame Buildings			23rd June-3rd July 2020
6	Dr. Putul Haldar	Seismic Risk Assessment of RC Structures		Technical Education Quality Improvement Programme	15th June-19th June 2020
7	Dr. Rahul T.M	Sustainable transportation through non-motorized modes	Civil Engineering		
8	Dr. Rahul T.M	Categorization of pedestrian level of service perceptions and accounting its response heterogeneity and latent correlation on travel decisions	Civil Engineering	Transportation Research Group (TRG) Webinar series: IISc Sustainable Transportation Group Webinar series	
9	Dr. Mitesh Surana	Towards Earthquake Loss Estimation in Hilly Regions	Civil Engineering	National Institute of Technology Silchar	
10	Dr. Sagar Rohidas Chavan	Characterization of Extreme Precipitation Over India	Civil Engineering	National Institute of Technology Hamirpur	
11	Dr. Sagar Rohidas Chavan	Prediction of Hydro-Climatic Variables under Climate Change Scenarios	Civil Engineering	Government College of Engineering, Jalgaon	
12	Dr. Sagar Rohidas Chavan	Characterization of Extreme Precipitation Over India	Civil Engineering	B. M. S College of Engineering, Bangalore	
13	Dr. Sagar Rohidas Chavan	Behaviour of Hydroclimatic Extremes under Climate Change Scenarios	Civil Engineering	Government College of Engineering, Karad & Government College of Engineering, Nagpur	
14	Dr. Resmi Sebastian	Causes and mitigation measures	Civil Engineering	Amal Jyothi College of Engineering, Kottayam, Kerala	
15	Dr. Resmi Sebastian	An introduction to earthquake engineering	Civil Engineering	Shaheed Bhagat Singh State Technical Campus, Ferozepur, Punjab	

16	Dr. Resmi Sebastian	Basics of earthquake engineering	Civil Engineering	Rajagiri School of Engineering and Technology, Kakkanad, Kerala	
17	Dr. Reet Kamal Tiwari	Applications of Microwave Remote Sensing in Agriculture (Soil Health), Snow Cover, Structural Integrity, ground subsidence		Engineering College Bikaner, Rajasthan.	21st-25th Sep 2020
18	Dr. Reet Kamal Tiwari	Steps in the Process of Research Problem Selection, Formulation and Planning: How to Write a Proposal		Bhartiya Institute of Engineering & Technology, Jaipur- Bikaner Bypass, Sikar, Rajasthan	2nd Nov-7th Nov 2020
19	Dr. Reet Kamal Tiwari	Advanced Applications of SAR Remote Sensing		Acropolis Institute of Technology & Research, Indore	22nd Feb-27th Feb 2021
20	Dr. Reet Kamal Tiwari	Remote Sensing for Civil Engineering		Beant College of Engineering and Technology Gurdaspur	12th March 2021
21	Dr. Indramani Dhada	Smart cities in a circular Economic Framework	Civil Engineerings	NIT Warangal	2nd-6th November 2020
22	Dr. Naveen James	Site characterization and assessment of various earthquake hazards for micro and macro-level seismic zonations of regions in the peninsular india		IIT Indore	11 March 2021

MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Sr. No.	Name of the Research Project	Funding Agency	Duration	Status
1.	External Co-PI of "Earthquake Hazard and Risk Reduction on the Indian Subcontinent" with Institutional Cooperation between India and Norway Faculty: Dr. Putul Haldar	NORSAR, Norway	2012-2015	Completed
2.	PI of "Seismic Performance of Shear Walled Reinforced Concrete Frame Structure on Rocking Foundation" Faculty: Dr. Putul Haldar	ISIRD grant of IIT Ropar	2016-2019	Completed
3.	PI from IIT Ropar of "Next Generation Earthquake Loss Estimation Tool for Hilly Regions" in collaboration with IIT Roorkee (Dr. Yogendra Singh, Principal Investigator, Dr. Ravi Shankar Jakka Co-PI) Faculty: Dr. Putul Haldar	DST IMPRINT II AND Risk Management Solutions India (RMSI)	2019-2022	Ongoing

4.	Co-PI of “Micro Green Roofing” in collaboration with IIT Kharagpur (Dr. Prabir Sarkar, Principal Investigator, IIT Ropar and Dr. Chirodeep Bakli Co-PI, IIT Kharagpur) Faculty: Dr. Putul Haldar	DST IMPRINT II and ELT India	2019-2022	Ongoing
5.	Co-PI of “Compendium of Traditional Earthquake Resilient Construction for Knowledge Sharing and Disaster Risk Reduction: Promotion of Traditional Construction Practices” in collaboration with Y. Singh (IIT Roorkee), Dr. Jayanta Pathak (Assam Engineering College Guwahati) and Dr. Mitesh Surana (Principal Investigator, IIT Ropar) Faculty: Dr. Putul Haldar	National Disaster Management Authority (NDMA), New Delhi	2019-2022	Ongoing
6.	Team member of “Guidelines for Performance-Based Seismic Design of Reinforced-Concrete Buildings” in collaboration with Y. Singh and P. C. Aswin (IIT Roorkee) Faculty: Dr. Putul Haldar	National Disaster Management Authority and Bureau of Indian Standards	2020	Ongoing
7.	Socio-economic Development and Empowerment of Underprivileged Communities in Punjab [DST/SEED/SCSP/STI/2019/29];Temporary Registration No.: TPN / 38538 (PI: Putul Haldar, Co-PI: Sagar Rohidas Chavan and Mitesh Surana, IIT Ropar)	SEED Programme or Scheme: STI Hub for SC Community	Under Processing (Submitted: 20/09/2019)	Under Processing
8.	“Facile Construction Waste Recycling Technique for Wastewater Recovery and Filtration” [email submission] (PI: Putul Haldar, Co-PI: Chirodeep Bakli, IIT Kharagpur)	Office of the Principal Scientific Adviser partnered with PNB Housing	Under Processing (Submitted: 18/01/2021)	Under Processing
9.	Commute Travel Choices in India – Gender Perspective Solutions (18 Lakhs) Faculty: Dr. Rahul TM	Science and Engineering Research Board,		Completed
10.	Analysis of Evacuation Options considering Citizen Mobility Patterns and Disaster Vulnerability in a Himalayan Region Transportation Network (44.45 Lakhs) Faculty: Dr. Rahul TM	National Mission on Himalayan Studies	2019-22	Ongoing
11.	Impact of COVID-19 pandemic on Travel behavior of people (4.2 Lakhs) Faculty: Dr. Rahul TM	Indian Council of Social Science Research (ICSSR)	2020-21	Ongoing

12	Compendium of Traditional Earthquake Resilient Construction for Knowledge Sharing and Disaster Risk Reduction: Promotion of Traditional Construction Practices(25 Lakhs) Faculty: Dr. Mitesh Surana	NDMA, New Delhi	2 years	Ongoing
13.	Title: Assessment of Hydro-climatic Extremes and Related Environmental Consequences in Punjab(159 Lakhs) Faculty: Dr. Sagar Rohidas Chavan	Indian Institute of Technology Ropar (ISIRD Project)	2017-ongoing	Ongoing
14	Propagation and attenuation of shear waves inducing high strains in jointed rocks(Rs. 47,89,180) Faculty: Dr. Resmi Sebastian	DST - SERB	2019-22	Ongoing
15	Utilization of rice husk ash, bagasse ash and bottom ash as backfill materials for highway embankment.(Rs. 53,38,300) Faculty: Dr. Resmi Sebastian	National Highway Authority of India (NHAI)	2020-24	Ongoing
16	Dynamic properties of rock and soil with rice husk ash subjected to low strain and high strain vibrations(Rs. 80,50,000) Faculty: Dr. Resmi Sebastian	ISIRD (Institute grant)	2018-21	Ongoing
17	Development of Low-Cost Artificial Intelligence System for Early Detection of Landslide(47 Lakhs) Faculty: Dr. Reet Kamal Tiwari	NRDMS Division and Landslide Research Scheme of DST		Ongoing
18	Mapping Agriculture and Yields Forecasting Over India Using High-Resolution Microwave Remote Sensing(30 Lakhs) Faculty: Dr. Reet Kamal Tiwari	MISTI Global Seed Funds		Ongoing
19	Slope Monitoring and Landslide Hazard Quantification for Hilly Roads. with Dr. Naveen James and Dr. C. K. Narayanan.(78.32 Lakhs) Faculty: Dr. Reet Kamal Tiwari	National Highway Authorities of India		Ongoing

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

No. of Students	:	B.Tech.	:	72
	:	M.Tech.	:	35
	:	MS (R)	:	00
	:	PhD	:	20

Head of the Department : Dr. Somitra Sanadhya (April 2020 to November 2020)
Dr. Nitin Auluck (November 2020 to March 2021)

No. of faculty members : 20

No. of staff members	:	Postdoc Fellow	:	01
		Technical Staff	:	05
		Administrative Staff	:	02

Thrust Area :

- Parallel and distributed computing
- Approximation algorithms
- Image processing and pattern recognition
- Computational geometry
- Computer Vision
- Cloud computing and software architecture
- Performance modeling
- Cryptography
- Machine learning and Artificial intelligence
- Network science
- Sensor networks
- Computer Architecture
- Social Computing
- Collective Intelligence
- Spatial Computing
- Game Theory and Mechanism Design
- Wireless Networking and Internet of Things
- Human Centred Computing

No. of Publications :

FACULTY MEMBERS

Dr. Abhinav Dhall
PhD, Australian National University
Computer Vision, Affective Computing and Human Computer Interaction

Dr. Anil Shukla
PhD, The Institute of Mathematical Sciences, Chennai
Theoretical Computer Science, Computational Complexity, Proof Complexity

Dr. Apurva Mudgal
PhD, Georgia Tech, USA
Theoretical Computer Science, Approximation Algorithms, Theoretical Robotics, Computational Geometry

Dr. Balwinder Sodhi
PhD, IIT Kanpur, India
Research Interests : Cloud computing, Software and its Engineering, Applied Computing

Dr. Narayanan C Krishnan
PhD, Arizona State University, USA
Activity Recognition, Pattern Recognition, Machine Learning, Pervasive and Mobile Computing, Pervasive Health Care, Assistive and Rehabilitative Technology

Dr. Deepti R. Bathula
PhD, Yale University, USA
Medical Image Processing and Analysis, Pattern Recognition, Machine Learning and Computer Vision

Dr. Mukesh Saini
PhD, National University of Singapore
Multimedia Systems, Visual Analytics, Surveillance, Privacy

Dr. Neeraj Goel
PhD, IIT Delhi, India
Processor architecture, SoC design and modeling, Low power design, behavior synthesis, Reconfigurable computing and FPGAs, Retargatable code generation and compiler optimizations

Dr. Nitin Auluck
Head of the Department
PhD, University of Cincinnati, USA
Scheduling and Resource Allocation in Parallel and Distributed Systems, Real-Time Systems

Dr. Puneet Goyal
PhD, Purdue University , USA
Image Processing/Computer Vision, Deep Learning, Machine Learning, Security Analytics and Assistive Technologies

Dr. Ram Subramanian
PhD, National University of Singapore (NUS)
Human-centered computing, which involves design and implementation of interactive/user-centric AI applications

Dr. Shashi Shekhar Jha
PhD, IIT Guwahati, India
Artificial Intelligence, Machine Learning, Multiagent Systems, Robotics, Bioinspired Algorithms

Dr. Somitra Kumar Sanadhya
Head of Department
PhD, Indian Statistical Institute, Kolkata
Cryptology (Primary interest),Machine learning, Bioinformatics (Secondary interest)

Dr. Shirshendu Das
PhD, IIT Guwahati, India
Computer Architecture, Network on Chip

Dr. Shweta Jain
PhD:Indian Institute of Science, Bangalore
Game Theory, Mechanism Design, Machine Learning, Reinforcement Learning

Dr. Sudarshan Iyengar
PhD, Indian Institute of Science, Bangalore
Data Sciences and Analytics, Social networks, Social Computing and Collective Intelligence Dynamics

Dr. Sudeepta Mishra
PhD, Indian Institute of Technology Madras
Resource *allocation,Interference management,Heterogeneous cellular networks,5G, ad-hoc networks, and IoT*

Dr. Sujata Pal
PhD, IIT Kharagpur, India
Mobile ad-hoc networks, Delay tolerant networks, Vehicular networks, Content centric networks, Wireless sensor networks

Dr. T V Kalyan
PhD, Indian Institute of Technology, Madras
Computer Architecture: Memory subsystem, Caches, Energy-efficient design

Dr. Venkata M Viswanath Gunturi
PhD, Computer Science, University of Minnesota
Spatial and Spatio-temporal databases, Spatial data mining, Graph algorithms, Geographic Information Sciences, Transportation

ONGOING ACTIVITIES

Teaching and Research in various aspects of Computer Science and Engineering.

FACILITIES

4 UG labs, 10 Research Labs, Department Server, HPC Facility (Central Facility)

NO. OF LABS : UG : 04
PG : 01
Research : 10

1	WANet (Wireless ad hoc Networks) Group	Dr. Sujata Pal
2	TCS,Cryptography and Security Lab	Dr. Somitra Sanadhya
3	Computer Vision and Image Processing/LASII	Dr. Abhinav Dhall
4	OS, Distributed, Cloud, IoT, and Applied and Contemporary Software Engineering (ACSE) Lab	Dr. Nitin Auluck & Dr. Balwinder Sodhi
5	Data Analytics and Machine Learning Lab	Dr. C.K. Narayanan & Dr. Deepti R Bathula
6	Multimedia research & Innovation Lab (MRIG)	Dr. Mukesh Saini

7	Image Processing, Security, and Analytics (IPSA)	Dr. Puneet Goyal
8	Social Computing and Collective Intelligence Laboratory	Dr. Sudarshan Iyengar
9	Data Analytics and Machine Learning Lab	Dr. Tarique Anwar and Dr. Viswanath Gunturi
10	Hardware Design and Architecture Lab	Dr. Neeraj Goel, Dr. Shirshendu Das, and Dr. TV Kalyan

AWARDS AND HONOURS 2020-21 (FACULTY)

S.No	Name	Details
1	Dr. Nitin Auluck	Selected as Editor for Concurrency & Computation: Practice & Experience (Wiley).
2	Dr. Abhinav Dhall	RunnerUp Award CityScene Challenge, ACM Multimedia 2020
3	Dr. Balwinder Sodhi	Google Cloud Platform Education Grant (For 2020-W edition of CS305)
4	Dr. Puneet Goyal	Google Cloud Platform Education Grant (For 2020-W edition of CP301)
5	Dr. Puneet Goyal	Best Industrial Paper Award in 16th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISAPP) 2021
4	Dr. Shashi Shekhar Jha	Finalists for 2020 Innovative Applications in Analytics Award, IAAA-2020, informs Analytics Society

AWARDS AND HONOURS 2020-21 (STUDENT)

S.No	Name	Details
1	Vidushi Agarwal	TCS Research Scholar Program
2	Armaan Garg	TCS Research Scholar Program
3	Vidushi Agarwal	DST Inspire Fellowship
4	Vishwas Rathi	Best Industrial Paper Award in 16th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISAPP) 2021

INVITED LECTURES BY FACULTY

S.No	Name	Purpose	Date
1	Dr. Nitin Auluck	Invited talk, Cybersecurity, Privacy and HCC seminar, Cardiff University, UK	29.7.2020
2	Dr. Nitin Auluck	Invited talk at PEC, Chandigarh.	28.08.2020

3	Dr. Nitin Auluck	Invited talk at IIIT Bhubaneshwar.	10.12.2020
4	Dr. T V Kalyan	Invited talk on “High Performance SSDs” as part of FDP on ‘Recent Trends in Computer Architecture, VLSI and Emb. Systems 2020’	12.06.2020
5	Dr. Shirshendu Das	Invited talk on “Database Management System” at SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS .	27.10.2020
6	Dr. Shirshendu Das	Invited talk on “Turing Machine” at SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS .	30.10.2020
7	Dr. Abhinav Dhall	Invited talk on “Multimodal Deepfakes Detection” Honeywell Aerospace AT India	23.02.2021
8	Dr. Abhinav Dhall	Invited talk on “Human Inspired and Implicit Signal based Approaches for Deepfake Detection” CSIRO, Australia	17.02.2021
9	Dr. Abhinav Dhall	Invited talk, “Engagement Prediction”, Indo-Canadian Conference on AI and Rehabilitative Robotics	11.03.2021
10	Dr. Abhinav Dhall	Invited talk on “Deepfakes Detection”, Nucleus Softwares Ltd	29.07.2020
11	Dr. Abhinav Dhall	Invited talk on “Human Implicit and Perceived Signals based deepfakes detection”, DICTA workshop 2020, Australia	03.12.2020
12	Dr. Abhinav Dhall	Invited talk, “Human inspired and implicit signal based approaches for deepfake detection” Huawei AI and ML Conference	18.12.2020
13	Dr. Sujata Pal	Presented our accepted paper, The 17th IEEE International Conference on Mobile Ad-Hoc and Smart Systems (IEEE MASS - 2020) Online.	10.12.2020
14	Dr. Sujata Pal	Invited talk to AICTE sponsored 5-days Online STTP on “Internet-of-Things (IoT): Building Blocks, Enabling Technologies, and Applications”, NIT Meghalaya	08.03.2020
15	Dr. Sujata Pal	Invited talk on “Protocols for Internet of Things”, TEQIP- III Sponsored Online Faculty Development Programme, IGIT Sarang	09.09.2020 22.09.2020
16	Dr. Sujata Pal	Invited talk on “Wireless Body Area Networks”, 2 weeks Faculty Development program at IGIT Sarang	17.06.2020
17	Dr. Sujata Pal	Invited talk on “WSN in IoT”, TEQIP-III sponsored one week online FDP on “Iot: Recent Advancements and Applications“,	16.09.2020

18	Dr. Sujata Pal	Invited talk on “Wireless Body Area Networks”, Cybersecurity, Privacy and HCC seminar, Cardiff University, UK	30.09.2020
19	Dr. Shweta Jain	Invited talk on “Multiarmed bandit with stochastic and adversarial rewards”, as part of FDP on Artificial Intelligence at University Institute of Technology (UIT), Himachal Pradesh University, Summerhill, Shimla-171005.	26.11.2020
20	Dr. Shweta Jain	Invited lectures on “Unsupervised learning and its algorithms” as part of Nilet and IIT Ropar- Industrial Training Courses under joint certification	15th and 16th April 2021
21	Dr. Shashi Shekhar Jha	Expert Talk at online STC on "Artificial Intelligence and Its Applications" NITTTR Chandigarh, Topic of the talk - "Deep Reinforcement Learning"	29th July 2020
22	Dr. Shashi Shekhar Jha	Expert Lecture at Online FDP on "Deep Learning and Applications" organized by Dept. of CSE, NIT Warangal Topic of talk - "Deep Reinforcement Learning"	18th September 2020
23	Dr. Shashi Shekhar Jha	Invited Webinar organized by the Indo-Taiwan Joint Research Centre on AI & ML at IIT Ropar Topic: "Reinforcement Learning - The natural way of learning from interactions	22nd September 2020
24	Dr. Shashi Shekhar Jha	Online Expert Lecture at the STTP on "Artificial Intelligence & 5G Communication Technology" Topic: "Reinforcement Learning Methods"	8th October 2020
25	Dr. Shashi Shekhar Jha	Two Invited talks on at the FDP on Artificial Intelligence at University Institute of Technology (UIT), Himachal Pradesh University, Summerhill, Shimla Topic 1: “Model-based and Model-Free Reinforcement Learning” Topic 2: “Deep Reinforcement Learning”	23rd and 26th November 2020
26	Dr. Shashi Shekhar Jha	Talk on 1-day Workshop on Machine Learning at SBS State Technical Campus, Ferozepur, Punjab under MoU with IIT Ropar	15th December 2020
27	Dr. Shashi Shekhar Jha	Invited lecture at the TEQIP sponsored course on the “Machine Learning in Digital Image Processing", G. B. Pant Institute of Engineering and Technology, Uttrakhand	4th January 2021
28	Dr. Shashi Shekhar Jha	Invited Talk at FDP - five days ATAL Workshop on Artificial Intelligence at IIT Ropar Topic: “Reinforcement Learning Methods”	23rd February 2021
29	Dr. Puneet Goyal	Invited Lecture on “Hidden Markov Models” in in the FDP organized by University Institute of Technology (UIT) Himachal Pradesh University, Shimla	27th Nov 2020

30	Dr. Puneet Goyal	Invited Lecture on “Applied Deep Learning for Efficient Burns Diagnosis” in in the FDP organized by University Institute of Technology (UIT) Himachal Pradesh University, Shimla	27th Nov 2020
31	Dr. Puneet Goyal	Invited talk on “Deep Learning based Efficient Methods for Segmentation and Classification of Burn Images” in International Conference on Data Science in Biology (ICDSB) co-organized by Indian Institute of Technology (IIT) Jodhpur and Institute of Bioinformatics, Bangalore.	4th Sep 2020
32	Dr. Puneet Goyal	Invited talk in an online Short Training Programme (STTP) on “Recent Advances in Artificial Intelligence” (organized by NIT Uttarakhand)	29th July 2020

LECTURES BY VISITING EXPERTS

Sr. No.	Name of the experts with affiliation	Topic	Date
1	Dharmesh Parikh, Hardware Performance Architect, Qualcomm, Bangalore	Main Memory basics (Virtual talk as part of CS510 - ACA)	05.10.20
2	Dharmesh Parikh, Hardware Performance Architect, Qualcomm, Bangalore	Main Memory advanced topics (Virtual talk as part of CS510 - ACA)	19.10.20
3	Saravanan Sethuraman, System Validation Architect, Intel, Malaysia	Emerging Memory Technologies (Virtual talk as part of CS510 - ACA)	23.10.20
4	Bhawna Nayak, Senior Design Engineer, AMD, Bangalore	Advanced Branch Prediction (Virtual talk as part of CS510 - ACA)	05.11.20
5	Dr. Subhasis Banerjee, Senior Researcher, HPC, Shell, Bangalore	GPU Microarchitecture and Industry perspective - Part I (Virtual talk as part of CS510 - ACA)	19.11.20
6	Dr. Subhasis Banerjee, Senior Researcher, HPC, Shell, Bangalore	GPU Microarchitecture and Industry perspective - Part II (Virtual talk as part of CS510 - ACA)	20.11.20
7	Dr. Hemanth Venkateswara, Assistant Research Professor, Computing Informatics and Decision Systems Engineering, Arizona State University	Different variants of Domain Adaptation (Invited webinar as part of CS712 - Topics in AI)	11.02.2021
8	Dr. Gautam Kunapuli R&D Lab Manager, Verisk AI, Adjunct Professor, The University of Texas Dallas (UTD)	Statistical Relational AI Meets Deep Learning (Invited webinar as part of CS712 - Topics in AI)	18.02.2021

9	Dr. Chandrashekar Lakshminarayanan Assistant Professor, Indian Institute of Technology Palakkad	Dismantling the Deep Neural Network Black Box (Invited webinar as part of CS712 - Topics in AI)	25.02.2021
10	Dr. Harshad Khadilkar Scientist, Data and Decision Sciences, TCS, Visiting Associate Professor, Dept. Aerospace Engineering IIT Bombay	Thinking networks: Simple, explainable methods to introduce learning-based adaptation in real-world industrial systems (Invited webinar as part of CS712 - Topics in AI)	04.03.2021
11	Dr. Amit Dhurandhar Research Staff Member IBM T J Watson Research Center	Explaining the Explainable AI: A 2-Stage Approach (Invited webinar as part of CS712 - Topics in AI)	18.03.2021
12	Prof. Vivek Srikumar School of Computing, University of Utah	Where Neural Networks Fail: The Case for a Little Help from Knowledge (Invited webinar as part of CS712 - Topics in AI)	25.03.2021
13	Prof. Mayank Vatsa, DST Swarnajayanti Fellow, Professor in IIT Jodhpur and also Adjunct faculty in a University in USA.	Object detection (Invited webinar as part of CS517)	02.05.2020 and 03.05.2020

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

Sr. No.	Funding Agency	Name of Faculty Member	Department	Title of Project	Fund (in Crores)
1	DST-CSRI	Dr. Puneet Goyal	CSE	Computationally intelligent methods to provide visually impaired cognitive support for better learning	0.58
2	CDoT	Dr. Somitra Sanadhya	CSE	Hardware implementation of post-quantum cryptography algorithms	0.37
3	SERB	Dr. Shirshendu Das	CSE	Efficient Utilization and Refresh Overhead Minimization of eDRAM based Last Level Cache	0.36
4	DST/NSM	Dr. Nitin Auluck	CSE	An Artificial Intelligence based forecasting model for nonlinear multivariate biomedical time-series data.	0.32
5	DST-ECRA	Dr. Puneet Goyal	CSE	Design and Evaluation of Demosaicking Techniques for Low Cost and Efficient Multispectral Imaging Systems	0.31

6	SERB	Dr. Shweta Jain	CSE	Towards fair and interpretable machine learning models	0.27
7	DST/CSRI	Dr. Deepti R. Bathula	CSE	Understanding depression - a machine learning approach using multi-site, multi-modal image analysis	0.2
8	SERB	Dr. Shirshendu Das	CSE	Reducing Energy Consumption and Operating Temperature of Last Level DRAM Cache in Multicore Systems	0.15
9	GCRF	Dr. Nitin Auluck	CSE	Edge computing based human computer interaction	0.03
10	GCRF	Dr. Sujata Pal	CSE	Internet of Things in Healthcare	0.019
11	Shastri Indo-Canadian Institute	Dr Abhinav Dhall	CSE	Indo-Canadian Conference on AI and Rehabilitative Robotics	0.01
12	AICTE Training & Learning	Dr. Sujata Pal	CSE	Block chain	0.0093

DEPARTMENT OF ELECTRICAL ENGINEERING

Programs offered	:	B. Tech, M. Tech and PhD
No. of Students	:	B.Tech. : 82 M.Tech. : 49 PhD : 27
Head of the Department	:	Dr. Ravibabu Mulaveesala
No. of faculty members	:	23
No. of staff members	:	11 Technical Staff : 08 Administrative Staff : 03
Thrust Area	:	• Power Engineering • VLSI and Microelectronics • Signal Processing and Communication
No. of Publications	:	120

FACULTY MEMBERS

Dr. A. V. Ravi Teja
Assistant Professor
Indian Institute of Technology Kharagpur
Converter Topologies and Control Techniques for Renewable Energy Systems, Electric Vehicles

Dr. Abhishek Sharma
Assistant Professor
IIT-Bombay
Design and simulations of nanoelectronic devices of upcoming the "Beyond Moore" era. Our work is based on Boltzmann transport, non-equilibrium Green's function (NEGF) and micromagnetic simulations to address a diverse class of device simulation problems encompassing Spintronics devices, Thermoelectric devices, Magnetic Skyrmion devices, Topological Quantum computing devices, Neuromorphic computing devices, etc.

Dr. Ashwani Sharma
Assistant Professor
University of Deusto, Bilbao, Spain
Antenna Engineering and Communication Systems.

Dr. Bibhu Prasad Padhy
Assistant Professor
Electrical Engineering, Indian Institute of Technology Kanpur
Power system dynamics & stability studies, synchrophasor technology & its applications, state estimation in power systems.

Dr. Brajesh Rawat
Assistant Professor
Indian Institute of Technology Guwahati
Nanoscale Devices Modeling and Simulation, 2-D Material based Devices, Simulation and Fabrication of Biosensors.

Dr. Brijesh Kumbhani
Assistant Professor
PhD(Indian Institute of Technology Guwahati)
MIMO wireless communication systems and UWB systems. Current research interests lies in the domains of energy efficient wireless technologies with high spectral efficiency

Dr. C. C. Reddy
Associate Professor
PhD(Electrical Engineering, Indian Institute of Science, Bangalore)
Mechanism of Conduction and Breakdown in Dielectrics, Space Charges in Dielectrics, HVDC Cables and accessories, High Voltage Engineering, Nano Dielectrics.

Dr. Devarshi Das
Assistant Professor
Indian Institute of Technology Bombay
CMOS Analog IC Design, ASICs for bio-signal measurement, Neuromorphic electronics, Low-power and low-noise IC design, Instrumentation, Sensors and transducers

Prof. J. S. Sahambi
Professor
Indian Institute of Technology Delhi
Signal/image processing, Wavelets, Graph signal processing, Medical image processing, DSP and Embedded systems.

Dr. Kalaiselvi J.
Assistant professor
Indian Institute of Technology Madras
Attenuation of Conduction mode EMI in converters and drives, Solid State Transformer

Dr. Mahendra Sakare
Assistant Professor
Indian Institute of Technology Bombay
Analog integrated circuit design, Broadband circuit and system design

Dr. Pardeep Duhan
Assistant Professor
Indian Institute of Technology Bombay
Semiconductor Devices, Electrical characterization, gate oxide reliability, and simulation of Nanodevices, Ferroelectric Memory Devices

Dr. Ramachandra Sekhar
Assistant professor
IIT Hyderabad
Design of high energy density Power converters for renewable and drive applications. Non linear control algorithms for distributed energy sources, EMC/EMI analysis of power converters

Dr. Ranjana Sodhi
Associate Professor
Indian Institute of Technology Kanpur
Wide area monitoring and control systems, Smart Grids, Microgrid studies, application of optimization techniques to power systems

Dr. Ravibabu Mulaveesala
Head of the Department
IIT Delhi
Infrared vision and video processing, Signal and image processing techniques for non-invasive imaging methods, Photo-thermal diagnostics of solids

Dr. Rohit Y. Sharma
Associate Professor
Jaypee University of Information Technology
Design of high-speed chip-chip and 3D interconnects, technology development for high-performance electrical connectivity, communication schemes for multi-core architecture.

Dr. Saifullah Payami
Assistant professor
IIT Patna
Multiphase (more than three phase) machines and its control, design and fault diagnosis of electric machines, Electric drives control

Prof. Sanjoy Roy
Professor
University of Calgary, Canada
Renewable energy systems: planning and economics, Decision making in power network management

Dr. Sam Darshi
Assistant professor
Indian Institute of Technology Guwahati
Communication, Ad-hoc networks, Wireless sensor networks, Infrastructure less multihop and relay networks, Co-operative communication, Next generation wireless networks

Dr. Satyam Agarwal
Assistant Professor
Indian Institute of Technology Delhi
Wireless communication and networks, MAC protocols, Wireless network modelling and performance analysis.

Dr. Subrahmanyam Murala
Associate Professor
Indian Institute of Technology Roorkee
Computer Vision, Image Retrieval, Object Detection and Medical Image Analysis .

Dr. Suman Kumar
Assistant Professor
Indian Institute of Technology Madras
Performance analysis of mobile broadband wireless networks including Frequency reuse, HetNets, Hypergeometric functions, Generalized fading models, Spectrum sharing.

Dr. Vinayak G Hande
Assistant Professor
Indian Institute of Technology Bombay
Low power analog integrated circuit design

FACILITIES

No. of Labs : UG + PG : 22
Research : 23

Research Core subjects and Research Labs Details:

S.No	Name of the lab	Name of the Head of the Research lab	Name of the Equipment (Research Labs)
1	Electric Machines (UG)	Dr. Saifullah Payami	
2	HV (UG+PG)	Dr. C.C. Reddy	1. High Voltage AC Source 100 kV & 150 kV 2. High Voltage DC Source 140 kV 3. High Voltage Impulse Source 420 kV 4. Partial Discharge Measurement System 100 kV 5. Cascaded Transformers 100 kV 6. Capacitance and Tan Delta Measuring System (12 kV) 7. Oil purifier 8. Cable testing system 9. Leakage current measurement system
3	Power Electronics (UG+ PG)	Dr. R Sekhar	Solar emulator 15 KW
4	Electric Drives Lab	Dr. A. V. Raviteja & Dr. Saifullah Payami	JMag Software, DSO

5	Analog + Digital (UG)	Dr. Vinayak Hande	Function Generators DSO DC Power supply
6	Control Engineering Lab (UG)	Dr. Sanjay Roy	
7	Power Systems (UG + PG)	Dr. Ranjana Sodhi, Dr. Bibhu	PSCAD, PowerWorld Software
8	Synchrophasor Measurement & Research Lab	Dr. Ranjana Sodhi	Real-Time Digital Simulator, SEL Relays, Phasor Measurement Units, GPS Clock, Eurostag Software, dSpace1104 Kits, Smart Home appliances
9	Embedded System Lab	Dr. J.S. Sahambi	Embedded systems kits Zigbee kits Digital storage scopes Function generators
10	InfraRed Imaging Lab	Dr. Ravibabu Mulaveesala	InfraRed Imaging System
11	Communication Engg. Lab (UG + PG)	Dr. Suman Kumar	DSO: Digital Storage Oscilloscope FG: Function Generator PS: Power supply
12	VLSI Design Lab	Dr. Rohit Sharma, Dr. Vinayak Hande, Dr. Devarshi Das, Dr. Mahendra Sakare, Dr. Brajesh Rawat	Dell Power edge Rack Server: Intel Xeon Platinum 8160(2.10GHz/24- core/33MB/150W)
13	Electromagnetics Lab (UG)	Dr. Ramesh Garg (upto Dec. 11th, 2019), Dr. Ashwani Sharma	PCB Milling Machine
14	Antenna/ MW Lab	Dr. Ramesh Garg (upto Dec. 11th, 2019), Dr. Ashwani Sharma	Vector network analyzer, Anechoic chamber, chip binding machine, field measurement scara robotic setup
15	Computational Lab	Dr. Ravibabu Mulaveesala	
16	VLSI Wet Lab	Brajesh Rawat	Muffle Furnace Spin Coater Ultrasonic cleaning bath Gas sensor testing system D-C probe station

17	VLSI Characterization Lab	Dr. Vinayak Hande, Dr. Devarshi Das, Dr. Mahendra Sakare, Dr. Brajesh Rawat	D-C Probe Station, Source meter, Lock-in amplifier, Low frequency spectrum analyzer, LCR meter, Arbitrary Waveform Generators
18	Nanoelectronic Lab	Dr. Rohit Sharma	
19	Product Eng. Lab (For Loan)	Dr. Khusboo Rakha	
20	Computer Vision and Pattern Recognition Lab	Dr. S Murala	
21	Dielectric Measurement Lab	Dr. C.C. Reddy	1. Dielectric Spectroscopy 2. Electrometer 3. Pulsed Electro-acoustic System 4. Solid Nano Dielectric Hydraulic Press 5. Solid Nano dielectric Roll Mixer 6. Solid Nano Dielectric High Speed Mixer 7. Cable Extruder 8. Thermal Imaging Camera 9. Microscopes 10.Needle plane treeing test system 11.Water treeing test system
22	Communication Research Lab	Dr. Suman Kumar, Dr. Sam Darshi, Dr. Brijesh Kumbhani, Dr. Satyam Agarwal	1. EXata Network Emulator Software 2. NI USRP software defined radio
23	BEL Lab (UG)	Dr. Mahendra Sakare	DSO: Digital Storage Oscilloscope FG: Function Generator PS: Power supply
24	GEL Lab	Dr. Saifullah Payami	
25	Control Eng. Lab	Dr. S. Roy	
26	Circuits and Devices Simulation Lab	Dr. Devarshi Das , Dr. Brajesh Rawat	
1	Power Engineering Labs	Dr. Saifullah Payami	Electric Machines (UG) Ground Floor, Room no:101
		Dr. C.C. Reddy	High Voltage (PG) Ground Floor, Room no:102
		Dr. R Sekhar & Dr.J.Kalaiselvi	Power Electronics (UG+ PG) Ground Floor, Room no:104
		Dr. A.V. Raviteja & Dr. Saifullah Payami	Electric Drives Lab Room no:106 & 308
		Dr. Ranjana Sodhi, Dr. Bibhu	Power Systems (UG + PG) First Floor, Room No:203

		Dr. Ranjana Sodhi	Synchrophasor Measurement& Research Lab (Power Quality Research Lab) First Floor, Room no: (205)
		Dr. C.C. Reddy	Dielectric Measurement Lab Third Floor, Room no:406
		Dr. Saifullah Payami	GEL Lab Third Floor, Room no:409 & 408
2	Signal Processing and Communication Labs	Dr. J.S. Sahambi	Embedded System Lab First Floor, Room no:206
		Dr. Ravibabu Mulaveesala	Infra Red Imaging Lab First Floor, Room no:207
		Dr. Suman Kumar	Communication Engg. Lab (UG + PG) Second Floor, Room no:301
		Dr. Ashwani Sharma	Electromagnetics Lab (UG) Second Floor, Room no:303
		Dr. Ashwani Sharma	Antenna/ MW Lab Second Floor, Room no:304
		Dr. S Murala	Computer Vision and Pattern Recognition Lab Third Floor, Room no:404
		Dr. Suman Kumar, Dr. Sam Darshi, Dr. Brijesh Kumbhani, Dr. Satyam Aggarwal	Communication Research Lab Third Floor, Room no:407
3	VLSI Labs	Dr. Vinayak Hande	Analog + Digital (UG) First Floor, Room no:201
		Dr. Rohit Sharma	Nanoelectronics Lab, 402
		Dr. Vinayak Hande, Dr. Devarshi Das, Dr. Mahendra Sakare	VLSI Design Lab Second Floor, Room no:302
		Dr. Vinayak Hande, Dr. Mahendra Sakare	VLSI Wet Lab Third Floor, Room no:401

		Dr. Vinayak Hande, Dr. Devarshi Das, Dr. Mahendra Sakare, Dr. Brajesh Rawat	VLSI Characterization Lab Third Floor, Room no:403
		Dr. Mahendra Sakare	BEL Lab Third Floor, Room no: 313
		Dr. Devarshi Das , Dr. Brajesh Rawat	Circuits and Devices Simulation Lab Third Floor, Room no: 315
4	Institute general course UG lab	Dr. Khusboo Rakha, Mechanical Department	Product Eng. Lab Third Floor, Room no:403

AWARDS AND HONOURS 2020-21 (FACULTY)

S.no.	Name of the faculty	Award/ Achievement
1	Dr. Ravibabu Mulaveesala	Published Invited Paper in IEEE Sensors Journal entitled “Pulse compression favorable thermal wave imaging techniques for non-destructive testing and evaluation of materials”. DOI 10.1109/JSEN.2020.3034823
2	Dr. Ravibabu Mulaveesala	Guest Editor for Measurement Science & Technology, Institute of Physics Journal, UK, for Special Feature on Industrial Vision and Automation.
3	Dr. Ravibabu Mulaveesala	Guest Editor for IEEE Sensors Journal, USA, for Special Issue on Advances and Current Trends in Sensing Physiological Parameters for Human Wellness and Patient Monitoring.
4	Dr. Ravibabu Mulaveesala	Guest Editor for IET Electronics Letters, UK, for Special Issue on Non-destructive Testing and Evaluation.
5	Dr. Ravibabu Mulaveesala	Nominated as a member of High Level Evaluation Committee (OHLEC) by Secretary, Technology Development Board (TDB), Department of Science & Technology, Government of India for project evaluation on Thermal Scanners.
6	Dr. Ravibabu Mulaveesala	Editorial Board Member for Measurement: Sensors, Elsevier Publishers.
7	Dr. Ravibabu Mulaveesala	Editorial Board Member (Engineering Stream) for IoP SciNotes, Institute of Physics (IoP), UK.
8	Dr. Devarshi Das	Elevated to IEEE Senior Member grade

AWARDS AND HONOURS 2020-21 (STUDENT)

S.no.	Name of the Student	Award/ Achievement
01	Vipul Kumar Nishad	Awarded the Best Student Paper Award in the 20th IEEE International conference on Nanotechnology 2020 (July 29-31 2020)
02	Kapil Chauhan	Won the DST-AWSAR award. Department of Science and Technology (DST) celebrating National Science Day (NSD) and organizing an award function on February 28, 2021
03	Kapil Chauhan	Won the POWERGRID POSOCO award PPSA -2021 under Doctoral Category, which includes a cash prize of 1 Lakh and a certificate.
04	Yashasvi Bansal	Won the POWERGRID POSOCO award PPSA -2021 under Doctoral Category, which includes a cash prize of 1 Lakh and a certificate.

INVITED LECTURES BY FACULTY

Sr. No.	Name of the Faculty	Lecture	Institute	Date
01	Dr. Mahendra Sakare	Invited to deliver two expert lectures on online STC on "VLSI Physical Design Techniques"	NITTR Chandigarh.	19.06.2020
02	Dr. Brajesh Rawat	"Invitation for online one week Short Term Course through 'Webex' on "Nanoelectronics Devices and Circuits Design" at NITTTR Chandigarh.	NITTTR Chandigarh	Dated 6 to 10 July, 2020
03	Dr. C. C. Reddy	Invited for delivering an expert lecture on " Circuits for Generation of High Voltages, AC, DC, Switching and Lightning Impulse Voltages" by NITTTR, Chandigarh	NITTTR, Chandigarh	Date: 18 July 2020: 12: 00 noon to 01:00 pm
04	Dr. C. C. Reddy	Invited for delivering an expert lecture on "Pulsed Electro-acoustic System for Space Charge Measurement" by NITTTR, Chandigarh	NITTTR, Chandigarh	Date: 19 July 2020 12: 00 noon to 01:00 pm
05	Dr. C. C. Reddy	Invited for delivering an expert lecture on " Surface Voltage Measurement of a Overhead Insulated Conductor Using Voltage Dividers" by NITTTR, Chandigarh	NITTTR, Chandigarh	Date: 20 July 2020 12: 00 noon to 01:00 pm

06	Dr. C. C. Reddy	Appointed as Subject Expert in Board of Control in the Subject Electronics Technology, Guru Nanak Dev University, Amritsar for the term / period 01-07-2020 to 30-06-2021 by Vice Chancellor	Guru Nanak Dev University, Amritsar	July 10th 2020 Amritsar (Online)
07	Dr. Vinayak Hande	Invitation for online one week Short Term Course through WebEx, on “Digital and Analog VLSI Design at for STC workshop at NITTR Chandigarh.	NITTR Chandigarh	Dated 3, 4 and 5 August, 2020 at NITTR Chandigarh
08	Prof J. S. Sahambi	Invited as expert for NBA Meeting at Visvesvaraya National Institute of Technology, Nagpur.	National Institute of Technology, Nagpur	18-20 Oct, 2019, at Nagpur
09	Dr. Brajesh Rawat	Invitation to deliver talk on “Short Term Course through WebEx, on “Nanoelectronics Devices and Circuits, Electronics and Communication Engineering Department of NITTTR Chandigarh is conducting a online one week S	NITTTR Chandigarh	18-20 August 2020
10	Dr. Devarshi Das	Invited talk on analog technologies in digitally connected world at IIIT Hyderabad	IIIT Hyderabad	24th Oct., 2020 (Online)
11	Dr. Ravibabu Mulaveesala	Invitation to deliver pre-conference tutorial (PCT) on “Modeling and Simulation of Infrared Thermal Imaging” conducted by ISNT	conducted by ISNT	4-5 Dec 2020, Virtual Meeting
12	Dr. Ravibabu Mulaveesala	Invitation to deliver a Keynote talk at NDE2020 - Virtual Conference and Exhibition conducted by ISNT	conducted by ISNT	10-12 Dec 2020, Virtual Meeting
13	Dr. S Murala	Single Image Depth Estimation	NIT Rourkela	Feb 27, 2021
14	Dr. S Murala	Applications of Computer Vision	IIIT Sri City	Feb 25, 2021
15	Dr. S Murala	Generative Models for Computer Vision Applications	IIITDM Kancheepuram	Feb 11, 2021

16	Dr. S Murala	Moving Object Segmentation in Videos	IIIT Allahabad	Feb 04, 2021
17	Dr. S Murala	Medical Image Processing using Deep Learning	IIT Roorkee	Dec. 14, 2020
18	Dr. S Murala	Computer Vision using CNN (handson)	IIT Roorkee	Nov. 30, 2020
19	Dr. S Murala	Semantic Segmentation using Deep CNN	Huawei Tech. India Ltd, Bangalore	Nov. 27, 2020
20	Dr. S Murala	Computer Vision for AR/VR Applications	Huawei Tech. India Ltd, Bangalore	Nov. 18, 2020
21	Dr. S Murala	Deep Learning for Haze Removal	IIIT Allahabad	Nov. 09, 2020
22	Dr. Ashwani Sharma	Lecture on-Beginners Guide: Framework on Antenna Design for New Technologies	VNIT	23 Feb 2021 (online)
23	Dr. Ashwani Sharma	Lecture on -Misalignment Tolerant Wireless Power Transmission in Near-Fields	VNIT	24 Feb 2021 (online)
24	Dr. Ashwani Sharma	Lecture on -Misalignment Tolerant Wireless Power Transmission In Near-Fields	NIT Jalandhar	0 March 2021 (online)

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

Sr. No.	Funding Agency	Name of Faculty Member	Title of Project	Sanctioned Amount 2020-21	Total Sanctioned Amount	Project Status
1	DST	Dr. Ranjana Sodhi	Enhancement of Power system monitoring and stability assessment using synchrophasor technology		0.17	Complete

2	DST	Prof. J.S. Sahambi	Smart phone based real time remote monitoring of cardiac patients from hospital CCU's		0.32	Complete
3	DST	Dr. Rohit Sharma	Design and optimization of an ultra low-loss interconnect link on silicon interposer		0.22	Complete
4	DST	Dr. Chakradhar Reddy	Experimental Investigations on Breakdown Phenomenon In power Cable		0.55	Complete
5	DST	Dr. Ravibabu Mulaveesala	Matched Filter Approach for Chirp Excited Infrared Imaging for Non-destructive Characterization"		0.45	Complete
6	DRDO-ARDB	Dr. Ravi Babu	Non-Destructive Testing of Carbon Fiber Reinforced Polymers (CFRP) Using Non-Stationary Thermal Technique		0.22	Complete
7	DRDO-CARS	Dr. Rohit Y Sharma	Design verification and analysis of electronic impact cum time delay sensing module		0.1	Complete
8	DRDO	Dr. C C Reddy	Design and Development of Compact Firing Circuit		0.09	Complete

9	Industrial Consultancy	Dr. Subrahmanyam Murala	Development of Image Recognition Technology, Android Application to collect image and data and online reports/dashborad for Retail Store Tracking		0.12	Complete
10	CPRI	Dr. C C Reddy	Investigations on new nano-composite materials for electrical insulation		0.65	Complete
11	DeitY	Dr. Rohit Y Sharma	Special Manpower Development Programme for Chips to System Design		0.6	Running
12	DeitY (Media Lab Asia)	Dr. Rohit Y Sharma	Visvesvaraya PhD Scheme for Electronics and IT		2.46	Running
13	Industrial Consultancy	Dr. C.C. Reddy	Evaluation of 11Kv Earthed HT Xlpe Cable Conductor Resistance and High Voltage Performance as per IS7098 part-II		0	Complete
14	India-UK Collabor-ative Industrial R&D Program me-GITA	Dr. Rohit Y Sharma & Dr. Ekta Singla	APATH: Affordable Preventative And Assistive Technology For Healthcare		0.15	Running
15	Industrial Consultancy	Dr. Rohit Y. Sharma	Bridging the Innovation Gap		0.03	Complete
16	Industrial Consultancy	Dr. Chakradhar Reddy	Transition Joint : Material, Interfacial and Design Investigations		0.05	Complete

17	DST	Department of Electrical Engineering	FIST Program		2.42	Running
18	Digital India Corporation (Formaly Media Lab Asia)	Dr. Rohit Y. Sharma	Award of Young Faculty Research Fellowship		0.37	Running
19	Industrial Consultancy	Dr. Rohit Y. Sharma	Technical Reviews of MCM layout & SI-PI analysis and guidance for Package performance optimization		0.01	Complete
20	SERB-DST	Dr. Suman Kumar	FFR based Non-orthogonal Spectrum Sharing among Licensed Operators		0.37	Running
21	Industrial Consultancy	Dr. C.C. Reddy	HT Cable Test		0.02	Complete
22	SERB	Dr. J. Kalaiselvi	Mitigation of common mode issues in SiC converter fed induction motor drive		0.33	Running
23	DST-Inspire Faculty Award	Dr. Satyam Agarwal	Wireless Networking for Sustainable Rural Connectivity		0.07	Running
24	DRDO-TBRL-CARS	Dr. C.C. Reddy	Design and Development of Flux Compression Generator (FCG) Simulator		0.1	Running
25	India-UK Collaborative Industrial R&D Program me-GITA	Dr. Ravibabu Mulaveesala	The Development of a Portable THERMOgraphy-Based Health Detection System (THERMOTECT) in Breast Cancer Screening		0.25	Running

26	SERB	Dr. Subrahmanyam Murala	Automatic Driver Assistance Technology: Fog Removal in Videos		0.28	Running
27	SERB	Dr. Ashwani Sharma	Design and development of miniaturized cost-effective antennas for Internet of Things and 5G technology		0.5	Running
28	SERB	Dr. Saifullah Payami	Development of a Five-Phase SRM for In-Wheel Drive Application with Fault-Tolerant Features for Plug-In Electric Vehicles Suitable for Indian Roads		0.53	Running
29	SERB-DST	Dr. Ranjana Sodhi (PI) Dr. Balwinder Singh Sodhi (Co-PI)	Efficient Energy Management System for Smart Residential Networks via Intelligent Mobile Web Services		0.31	Running
30	Industrial Consultancy	Dr. Suman Kumar	Design and Development of Low -Cost RFID System		0.04	Complete
31	Industrial Consultancy	Dr. Subrahmanyam Murala	Piston Quality Detection		0.03	Complete
33	Industrial Consultancy	Dr. Devarshi Mrinal Das CI & Dr. Rohit Y. Sharma Co -CI	To improve the DC rating and switching characteristies of a 3-speed blower switch		0	Complete
34	Indo-Taiwan Joint Research Centre	Dr. Rohit Y. Sharma	Indo-Taiwan Joint Research Centre on Artificial Intelligence and Machine Learning		2.16	Running

35	Industrial Consultancy	Dr. Ravibabu Mulaveesala	Design and Development of Active Thermographic data Analysis Software & Optics Relevant to IR & CT Imaging		0.25	Running
36	Industrial Consultancy	Dr. C. C. Reddy	Surface Voltage Measurement and Simulation on Covered Conductor		0.02	Complete
37	SERB-CRG	Dr. A. V. Ravi Teja	Sensorless Control of Switched Reluctance Motor Drives for Electric Vehicle Applications		0.26	Running
38	Industrial Consultancy	Dr. Suman Kumar and Dr. Narinder Singh	Development of Sensor based system for online monitoring of river water quality of Punjab		0.42	Running
39	Industrial Consultancy	Dr. Rohit Y Sharma	Design and development an AI-enabled hybrid Intrusion Detection, Prevention and Offensive System (IDPOS)	0.06	0.06	Running
40	Industrial Consultancy	Dr. C. C. Reddy	Investigations on Transition joint dielectrics of three different Manufactures	0.17	0.17	Running
41	Industrial Consultancy	Dr. C C Reddy	Investigating the effect of Simulated 25KV AC Power line transients on BEL Product	0.01	0.01	Running

42	Industrial Consultancy	Dr. C C Reddy (CI) Dr. Bibhu P Padhy and Dr. R. Sekhar (Co-CI)	HV Test and Assessment of Coupling Capacitor of Stator Winding at 39.1kv DC and Tan Delta Assessment	0.01	0.01	Running
43	Industrial Consultancy	Dr. K. Ramachandra Sekhar	Proposal on Design And Development of Smart Voltage Regulators of Fixed and Variable Type	0.01	0.01	Running
44	Industrial Consultancy	Dr. C. C. Reddy	Greater Mohali Area Development Authority Document Vetting (Described in Scope of Project)	0.05	0.05	Running
45	Industrial Consultancy	Dr. Saifullah Payami	Development and Integration of LED Driver for Airfield Lighting System	0.07	0.07	Running
46	SERB-SRG	Dr.Brajesh Rawat	Design and Development of Single Chip Gas Sensor Arrays based on Two-Dimensional MoS_2, and Metal Oxide Hybrid Nanomaterials for Air Pollutants Monitoring at Near RoomTemperature	0.24	0.24	Running
47	Industrial Consultancy	Dr. C. C. Reddy	Motorization of Main and Sluice Gates of Sirhind Canal System at Ropar Headworks	0.12	0.12	Running

48	Industrial Consultancy	Dr.Subrahmanyam Murala	Deep Image Matting	052	0.52	Running
49	Industrial Consultancy	Dr. Rohit Y. Sharma	Artificial Intelligence and Data Science Upskilling	1.24	1.24	Running
50	Industrial Consultancy	Dr. C. C. Reddy	Investigations on HV Power Cable Technology	0.23	0.23	Running
51	Industrial Consultancy	Dr. Subrahmanyam Murala	Under Screen Camera Project	0.62	0.62	Complete
52	Industrial Consultancy	Dr. Brajesh Rawat	Impact on emission reduction through replacement of coal by Renewable Energy Source, Paddy Straw, for industrial application	0.24	0.24	26535.2 EURO
53	Industrial Consultancy	Dr. C. C. Reddy	Testing of HT Cables for High Voltage Performance	0.01	0.01	Running
54	SERB-CRG	Dr. Satyam Agarwal (PI) and Dr. Sam Darshi	Enabling Distributed Beamforming via Machine Learning for Energy Efficient Communications	0.46	0.46	Running

55	SERB-CRG	Dr. K.Ramachandra Sekhar (PI) and Dr. Bibhu Prasad Padhy	Implementation of Adaptive Reactive Power Compensation Mechanism for Enhance Power Quality in Weak Grid Connected Solar Inverter under Varying Solar Irradiance	0.32	0.32	Running
56	Industrial Consultancy	Dr.Ramachandra Sekhar	Smart power bank	0.01	0.01	Completed
57	NIDHI Prayas	Dr.Ramachandra Sekhar and Team	Implementation of IoT based energy management system grid connected solar pumping system	0.09	0.09	Running

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCE

Programs Offered	:	PhD
No. of Students	:	Regular PhD 42+6 (UGC) Part Time: 07
Head of the Department	:	Dr. Samaresh Bardhan
No. of Staff Members	:	2
	Technical Staff	: 01
	Administrative Staff	: 01

Thrust Area

Banking and Finance, Development Economics, Energy and Environmental Economics, International Economics and Finance, North American Literatures, Gender Studies, Visual Culture Studies, Language and cognition, Theoretical Linguistics, Natural Language Processing, Philosophy of Science, Western Epistemology and Metaphysics. Brand Management, Consumer Behavior, Services marketing, transformative service research, digital marketing strategy, Depression, Aggression, Social Cognition, Cognitive Biases, Emotion Regulation. Sociology of Science and technology, and Innovation studies.

FACULTY MEMBERS

Dr. Amritesh
Assistant Professor
PhD, IIT Kanpur
Transformative Services, Consumer Research, Online Marketing

Dr. Ansu Louis
Assistant Professor
PhD, IIT Kanpur
American Literature, Philosophy and Literature, Literary and Critical Theory, Greek Tragedy, and Visual Culture

Dr. Aparna Nandha
Assistant Professor
PhD, IIT Madras
Literary Historiography Studies, Political Fiction, Postmodern Literature, War Literature, Memory Studies

Dr. Bhavesh Garg
Assistant Professor
PhD, IIT Hyderabad
Open economy macroeconomics, Time series econometrics

Prof. Bijoy H Boruah
Visiting Professor
PhD, University of Guelph, Canada
Philosophy of Mind; Metaphysics of the Self; Philosophical Aesthetics;; Philosophy of Literature; Ethics and Value Theory

Dr. Devaraj. P
Assistant Professor
PhD, University of Hyderabad
Sociology of Science, Technology, and Innovation [STI]

Dr. Dibyakusum Ray
Assistant Professor
PhD, English and Foreign Languages University
English Literature, Continental Aesthetics, Hard Sci-fi, Fantasy/Horror Literature, Cultural Politics, Literature in Translation, 'Genre Film'

Dr. Dipanjan Kumar Dey
Assistant Professor
PhD, ICFAI Business School Hyderabad
Consumer Behavior, Brand Management, International Marketing, Sustainability

Dr. Kamal Kumar Choudhary
Assistant Professor
PhD, University of Leipzig, Germany
Psycho/Neurolinguistics, Language and Cognition, Neurocognition/ Neuroscience of Language comprehension

Dr. Parwinder Singh
Assistant Professor
PhD, PGDCP
Counselling, Clinical, Social & Personality Psychology

Dr. Rano Ringo
Associate Professor
PhD, IIT Roorkee
Gender studies, Postcolonial studies, Science Fiction and Fantasy, Canadian Literature

Dr. Samaresh Bardhan
Associate Professor and Head
PhD, Jadavpur University, Kolkata
Financial Markets, Credit Related Issues, Industrial Finance, Development Economics, Applied Econometrics, Climate Economics

Dr. Smruti Ranjan Behera
Associate Professor
PhD, Delhi School of Economics, University of Delhi
Applied Econometrics, Panel Data Econometrics, Industrial Economics, Macroeconomics, and International Economics.

Dr. Somdev Kar
Associate Professor
PhD, University of Tübingen, Germany
Phonetics, Computational Phonology, Optimality Theory, Speech Processing, Natural Language Processing, Morphology

Dr. Sreekumar Jayadevan
Assistant Professor
PhD, University of Hyderabad
Philosophy of Science, Formal Logic, Aesthetics and Philosophy of Design

Dr. Swathi Krishna S.
Assistant Professor
PhD, IIT Hyderabad
Contemporary American Literature, Women's Literature, Road Narratives, Feminist Theory, Gender Studies.

ONGOING ACTIVITIES

Teaching and research activities in the areas of Economics, English Literature, Linguistics, Philosophy, Management, Psychology, and Sociology.

FACILITIES

(A) Cognitive Lab (B) Language and Linguistics Lab

Name of the lab: Cognitive Lab (Research Labs)

Name of the Faculty In-Charge : Dr. Kamal Kumar Choudhary

The Language and Cognition Lab is a research lab in the Department of Humanities and Social Sciences at the Indian Institute of Technology Ropar. In this research space, all initiatives are bound to contribute to the understanding of the neuropsychological underpinnings of human language and the cognitive mechanisms underlying language comprehension and production. In the current wave of research, the scholars are particularly focusing on how language comprehension happens in fluent native speakers of the Indian language families. The primary linguistic features being investigated in this wave is ergativity and its interplay with syntactic and semantic cues. The techniques that we primarily adopt for our research are electroencephalography (EEG) and eye-tracking. Our research is generously funded by the institute (IIT Ropar) and the Department of Science and Technology (DST), Govt. of India.

(B) Name of the lab: Language and Linguistics Lab

Name of the Faculty-In Charge : Dr. Dibyakusum Ray

Language &Linguistics Laboratory has been set up to support the research agendas of faculty and students interested in discourse analysis, social interaction, and translation, broadly conceived. Members of the Core Research Group of the Lab do pure and applied, interdisciplinary and cross-linguistic research on various first, second, or heritage languages. Members of the Language Program Coordinators Group include faculty and their

deputies who supervise second, foreign, and heritage language service course programs. We are all concerned with issues that have a universal, interdisciplinary and cross-linguistic appeal. We are also all committed to the importance of doing empirical research. The LLB Lab is designed to provide cutting edge technological support for faculty and students involved in all these different ways of constructing new knowledge about language use, acquisition, and translation studies.

INVITED LECTURES BY FACULTY

Faculty Name	Expert	Title	Date
Dr. Amritesh	Dr. Navneet Chopra, University of Delhi	On Intentionality (Reflections from analytic philosophy, Heideggerian phenomenology, classical cognitivism, and embodiment)	15th September 2020
Dr. Amritesh	Dr. Krishna Prasad Miyapuram (IIT Gandhinagar).	Contextual Influences on Decision Making	25th September 2020
Dr. Amritesh	Dr. Tony Thomas (IIT Roorkee)	Altered Perceptual and Attentional mechanisms in the Peri-hand Space	13th November 2020,
Dr. Amritesh	Dr. Ankit Kesharwani (IIFT)	Do (how) digital natives adopt a new technology differently than digital immigrants? A longitudinal study.	27th November 2020,
Dr. Amritesh	Dr. Aditya Shankar Mishra (IIM Ranchi)	Exploring Brand Personality-Celebrity Endorser Personality Congruence in Celebrity Endorsements in the Indian Context	04th December 2020

HSS INTERNATIONAL WEBINAR

Webinar Title: Theorizing Humanities in the Times of Crisis

Co-ordinators: Dr. Dibyakusum Ray, Dr. Swathi Krishna , Dr. Aparna .

External Speakers:

Prof. Supriya Chaudhuri (Jadavpur University),

Dr. Parichay Patra(IIT Jodhpur),

Prof. Rohini Mokashi-Punekar(IIT Guwahati),

Dr. Anik Nandi(Royal Galician Academy of Language, Spain),

Dr. Nishaant Choksi(IIT Gandhinagar),

Prof. H. Kalpana (Pondicherry University)

Dr. Anustup Basu (College of Liberal Arts and Science, University of Illinois Urbana-Champaign, IL, United States)

Internal Speakers:

Prof. Bijoy H. Boruah, Dr. Dibyakusum Ray, Dr. Aparna Nandha, Dr. Swathi Krishna

Date : 21.09.2020, 22.09.2020, 23.09.2020

HSS FACULTY AS AN INVITED SPEAKER

Faculty Name	Organisation	Topic	Date
Dr. Somdev Kar	Amity University, Gurugram	How do we say 'Africa#39; ? From the angle of Optimality Theory" at Amity School of Languages	June 15, 2020
Professor Bijoy H. Boruah	Kumar Bhaskar Varma Sanskrit and Ancient Studies University, Nalbari, Assam,	Keynote Address to the International Webinar on Covid 19 and Existential Crisis	18 August 2020
Professor Bijoy H. Boruah	Department of Humanities and Social Sciences, IIT Ropar	"Humanity in Pestilence" International Webinar on Theorizing Humanities in the Time of Crisis,	21-23 September 2020
Professor Bijoy H. Boruah	Indraprastha Institute of Information Technology Delhi	"The Art of the Impossible"	4 November 2020
Professor Bijoy H. Boruah	UGC Human Resource Development Centre, of Punjab University	"The I-You Communicative Nexus: Ramchandra Gandhi and Contemporary Indian Metaphysics of the Self,"	15 February 2021

Professor Bijoy H. Boruah	Indian Institute of Technology Bhubaneswar	"On How Classical Indian Metaphysics of the Self is Incarnated in Contemporary Indian Philosophy,"	26 February 2021
Professor Bijoy H. Boruah	Indian Institute of Technology Jammu	“Synergy, Convergence and the New Renaissance: Technoscience and Post	20 March 2021

Dr. Dibyakusum Ray

1. [July 1, 2021]. The Atavist Urban: Ray's Filmic Chronology and the Humanist City. **National Webinar on Satyajit, Cinema and Modernity**. Department of English, CMEV and IQAC, Gokhale Memorial Girls' College, Kolkata.
2. [June 25, 2021]. Our Brand is Crises: Disreputable Politics and the 80s Popular Films. **Webinar.** Department of English. Deshabandhu Mahavidyalaya, Chittaranjan.
3. [June 05, 2021]. The City and the Coty: Idelogy, Modernism, and Urbanity in Indian Literature. **Series of Talk.** School of Languages. KIIT, Bhuwansehwar.
4. [May 31, 2021]. Indian Urban Studies: an Evolution. **Web Symposium**. Department of Humanities and Social Sciences, IIT Jodhpur.
5. [May 5, 2021]. Film and Urban Politics. **Webinar.** Department of English and Foreign Languages, Sri Sri University, Bhuwaneshwar.
6. [August 26, 2020]. Satyajit Ray: Cinema, Nation and Politics. **Web Symposium: Birth Centenary of Satyajit Ray.** Department of English, Gour Mahavdyalaya, West Bengal.
7. [August 18, 2020]. National History and Filmic Response: a Short History of Indian Popular. **Webinar.** Department of History. Sadhan Chandra Mahavidyalaya, West Bengal.

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

Bilateral Research Grant (Accepted) (VR Ref. no. 2020-03787;Accepted on October 21, 2020)

Project Title:“Stubble Burning: Health impacts (Quality of Life), cost and social perception - an explorative study for prevention"

Funding Agency: Swedish Research Council (SRC), Sweden

Scheme: Network Grant

Indian PI: Dr. Samaresh Bardhan

Indian Co-PI (Dr. Parwinder Singh and Dr. Prabir Sarkar)

Foreign PI: Dr. Koustav Dalal, Mid Sweden University, Sweden

Grant value :746 000 SEK (≈ 63,00, 000 INR)

Duration : Two years

DEPARTMENT OF MATHEMATICS

Programs offered	:	B.Tech., M.Sc. and PhD
No. of Students	:	B.Tech. : 52 [23(2019 Batch) + 29(2020 Batch)] M. Sc. : 44 [22(2019 Batch) + 22(2020 Batch)] PhD : 52 [50(Regular) + 02(Part-time)] Post Doc. : 01
Head of the Department	:	Dr. Arvind Kumar Gupta
No. of faculty members	:	16
No. of staff members	:	02 Technical Staff : 01 Administrative Staff : 01
Thrust Area	:	Analysis and Algebra Probability and Statistics Modeling and Simulation Theoretical Computer Science
No. of Publications	:	45

FACULTY MEMBERS

Dr. Arti Pandey
Assistant Professor
PhD: Indian Institute of Technology Delhi
Graph Theory, Algorithms, Optimization.

Dr. Arun Kumar
Assistant Professor
PhD: Indian Institute of Technology Bombay
Subordinated Stochastic Processes, Financial Mathematics, Statistics, and Financial Time-Series Modeling

Dr. Arvind Kumar Gupta
Associate Professor
PhD: Indian Institute of Technology, Roorkee
Mathematical modelling of traffic flow, Cellular Automata

Dr. Balesh Kumar
Assistant Professor
PhD: Harish-Chandra Research Institute, Allahabad
Number Theory, Analytic and Arithmetic aspects of Automorphic forms

Dr. Bidhan Chandra Sardar
Assistant Professor
PhD: Indian Institute of Science, Bangalore
Homogenization and Optimal control of PDE

Dr. Chittaranjan Mishra
Assistant Professor
PhD: University of Antwerp, Belgium
Computational Finance, Numerical Solution of Financial Option Pricing Equations, Alternating Direction Implicit type schemes

Dr. G Sankara Raju Kosuru
Assistant Professor
PhD: Indian Institute of Technology, Madras
Functional analysis, Operator theory, Matrix Analysis

Dr. Kaushik Mondal
Assistant Professor
PhD: Indian Institute of Technology Guwahati
Networks Algorithms, Distributed Algorithms for Swarm Robots, Graph Algorithms

Dr. Manju Khan
Associate Professor
PhD: Indian Institute of Technology Delhi
Algebra

Dr. Manoranjan Mishra
Associate Professor
PhD: Indian Institute of Science, Bangalore
Fluid dynamics, Scientific computing

Dr. M. Prabhakar
Associate Professor
PhD: Indian Institute of Technology Delhi
Low-dimensional Topology

Dr. Partha Sharathi Dutta
Associate Professor
PhD: Indian Institute of Technology Kharagpur
Nonlinear Dynamics, Mathematical Biology, Theoretical Ecology

Dr. A. Sairam Kaliraj
Assistant Professor
PhD: Indian Institute of Technology Madras
Harmonic mappings in the plane, Function spaces on the unit ball in C

Dr. Santanu Sarkar
Assistant Professor
PhD: Indian Institute of Science, Bangalores
Operator Theory, Functional Analysis

Dr. S. C. Martha
Associate Professor
PhD: Indian Institute of Technology Guwahati
Mathematical modelling on water waves phenomenon, integral equations

Dr. Tapas Chatterjee
Assistant Professor
PhD: The Institute of Mathematical Sciences, Chennai
Number Theory, Transcendence Theory, Special values of L-functions

ONGOING ACTIVITIES

- Department seminars by Experts
- Department Research Day: Cynosure (annual)
- Conferences and workshops
- Students seminar series
- Alumni Talks
- Student Internship
- Faculty Internship

FACILITIES

No. of Labs : UG : NIL
PG : 0.5
Research : 3.5

New Labs : 01

Sr. No.	Type of Lab	Name of Lab	Head/ Faculty Incharge of Lab	Name of Equipments (Research Lab)
1	Research	Math Lab-1	Dr. Sairam Kaliraj	Desktops & MF Printer
2	Research	Fluid Dynamics Research Lab	Dr. Manoranjan Mishra	Desktops & High Performance Workstation
3	Research	Math Lab-2	Dr. Sairam Kaliraj	Desktops
4	Research & M.Sc. Lab	Math Lab-3	Dr. Sairam Kaliraj	Desktops & MF Printer
High End Computational System (Server)				

AWARDS AND HONOURS 2020-21(FACULTY)

S.No.	Name of the faculty member	Details of Awards and Honours
1	Dr. Santanu Sarkar	Received Start-Up Research Grant from SERB (SRG/2020/001908)
2	Dr. Manoranjan Mishra	Best paper award: Japan Society of Fluid Mechanics Award 2020

AWARDS AND HONOURS 2020-21 (STUDENT)

S.No.	Name of the scholar	Details of awards and honours
1	Smita Deb	Prime Minister Research Fellowship (May 2020 Cycle)
2.	Priyanka	Prime Minister Research Fellowship (May 2020 Cycle)

INVITED LECTURES BY FACULTY

Balesh Kumar:

- Invited lecture on the topic “On certain correspondence among modular functions on 3-dimensional hyperbolic space and complex upper half plane” in the Department of Mathematics at IIT BHU on 23rd December 2020.

Kaushik Mondal:

- Invited talk on “CFG, CFL and PDA” at the “Short term Training Programme on Formal Languages and Automata Theory (e-STTP FLAT-2020), ” held during 14 - 19, December 2020 in SRM University, Kattankulathur.
- Delivered a talk as a resource person on “Distributed Algorithm for Optimal Dispersion on Ring in Presence of Byzantine Faults” in a National webinar organized by ICFAI University, Tripura on 7th October, 2020.

Arun Kumar:

- “Expectation Maximisation Algorithm" at IIT Ropar organised by Indo-Taiwan Joint Research Centre on AI and ML held on January 30, 2021.
- Took a couple of sessions in "Two Week Workshop on Scientific Computing Using Matlab and Python" organised by Department of Mathematics J C Bose University during September 07-18, 2020.
- “Statistical Techniques in Research and Data Analysis" at IIT Ropar as part of Research Methodology Series on May 23, 2020.

Sairam Kaliraj:

- Gave an invited talk in “Online Workshop on Algebra and Analysis” organized by MEPCO Schlenk Engineering College, Sivakasi on November 01, 2020.
- Gave an invited talk entitled “Analytic and Harmonic Hardy Spaces” in the VI International conference of mathematics and computer science "congressio-mathematica" organized by University of Warmia and Mazury in Olsztyn, on November 22, 2020.
- Gave an invited talk entitled “Hardy Spaces and its Applications” in “Online Group Discussion on Geometric Function Theory” on March 20, 2021.

Arti Pandey:

- Delivered two invited talks on “Algorithmic Aspects of Domination” in an online workshop on “Recent trends in Domination: Algorithms, Complexity & Applications” held at NIT Warangal during June 15-19, 2020.

B. C. Sardar:

- Delivered an invited talk on “Differential Equations and their applications at Kristu Jayanti College, Bengaluru on 13th November 2020.

M. Prabhakar:

- Plenary speaker in the online international conference “Groups and Quandles in Low-Dimensional Topology” held during October 3-4, 2020.

Tapas Chatterjee:

- Invited speaker “International webinar on Geometry and Number Theory” on August 28, 2020 organized by the Department of Mathematics, Bidhan Chandra College.

S. C. Martha:

- Mathematical Modelling and Applications in the national webinar on Recent Trends in Mathematics, organized by Dept. of Mathematics, Shailabala Women's Autonomous College Cuttack on January 05, 2021
- Mathematical Techniques for Water Wave Scattering by Structures over Undulating Bottom Topography in the "International Workshop on Numerical and Analytical Techniques in Engineering Problems (online)" at SRM Institute of Science and Technology Kattankulathur, Tamil Nadu during November 12-13, 2020.
- "Methods of Solutions to the Problems of Scattering of Surface Waves with Different Structures over Arbitrary Bottom Topography" in the mini-symposium on Mathematical Aspects of Water Waves and Applications under International Conference on Advances in Differential Equations and Numerical Analysis (online) at IIT Guwahati during October 12-15, 2020.
- Water Wave Scattering by Structures for Varying Bottom Topography in AICTE Training and Learning Academy FDP (online) on Mathematical Modelling of Problems in Coastal and Offshore Engineering at IIT Guwahati during September 14-18, 2020.
- "Application of Integral Equation Method to Some Linear and Nonlinear Problems of Fluid Dynamics" in the Alumni Symposium on Mathematics & Computing (Online) at IIT Guwahati during September 19 - 20, 2020.

VISITS ABROAD BY THE STUDENTS (Attended Virtually)

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Taranjot Kaur	Salt Lake City, Utah, United States	Presented a paper in the 105th Annual meeting of the Ecological Society of America (ESA) virtually during 3rd – 6th August 2020
2	Subhendu Bhandary	Salt Lake City, Utah, United States	Presented a poster in the 105th Annual meeting of the Ecological Society of America (ESA) virtually during 3rd - 6th August 2020
3	Surya Narayan Maharana	Toronto, Ontario, Canada	Presented a poster in the second joint SIAM/CAIMS Annual meeting (AN20) during 6-17th July 2020
4	Arzoo Narang	ICTP Italy	Winter School on Quantitative Systems Biology: Quantitative Approaches in Ecosystem Ecology during 30th Nov -18th December 2020

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

ONGOING RESEARCH PROJECTS

S. No.	Name of the faculty member	Title of the Project	Funding Agency	Sanctioned amount	Duration
1	Arun Kumar	Potential Theory, Ergodicity and Infinite Divisibility for Subordinated Stochastic processes	MATRICS SERB	Rs 660,000	2020-2023
2	Tapas Chatterjee	A study on generalizations of Euler's constant, gamma function and their p-adic counterparts	CRG-SERB	20,09,766	2019-2022
3	Tapas Chatterjee	Bounded Gaps between primes over number fields	MATRICS SERB	6,60,000	2019-2022
4	Tapas Chatterjee	Study of nonvanishing and transcendence results of some L-functions	NBHM	14,20,666	2018-2021
5	Sairam Kaliraj	Geometric Function Theory and its applications to Operator Valued Functions	IIT Ropar ISIRD	19,97,480	2019-2022

6	Santanu Sarkar	DST-INSPIRE Research Grant	DST	35,00000	2016-2021
7	Santanu Sarkar	SRG Research Grant	SERB	3,74,000	2020-2022
8	Santanu Sarkar	ISIRD Research Grant	IIT Ropar	10,00000	2019-2022
9	Arti Pandey	ISIRD Research Grant	IIT Ropar	12,00000	2018-2021
10	Bidhan Chandra Sardar	ISIRD Research Grant	IIT Ropar	10,00,000	2020-2023
11	Bidhan Chandra Sardar	SRG Research Grant	SERB-SRG	2,31,000	2019-2021
12	Arvind Kumar Gupta	Investigation of Mechanisms of Biological Transport Phenomena on Cellular Network Utilizing Analytical and Computational Tools	SERB-CRG	22,40,832	2020-2023
13	Arvind Kumar Gupta	Understanding disordered traffic dynamics on Indian roads: Modeling & simulation	SERB-MTR	6,60,000	2020-2023
14	Partha Sharathi Dutta	Abrupt Transitions and its Indicators in Living Systems	SERB-CRG	7,15,000	2020-2023
15	Manoranjan Mishra	Modeling and simulation of hydrodynamic instability with chemical reaction	SERB-MTR	7,00,000	2018-2021
16	Manoranjan Mishra	Computational study of miscible chemo-hydrodynamic instability in a channel and porous medium	SERB-CRG	16,00,000	2021-2024
17	Department of Mathematics	DST (FIST Program)	DST	75,60,000	2020-2025

COMPLETED RESEARCH PROJECTS

Name of Faculty Member	Title of Project	Funding Agency	Sanctioned Amount	Starting Year	Closing Year
Dr. M. Khan	Normal complement in the unit group and its structure	NBHM	Rs. 9,89,500	2014	2017
Dr. P . S. Dutta	Non-equilibrium Dynamics & Predictability of Plankton Communities in a Seasonal Environment	DST & DAAD	Rs. 7,00,000	2014	2017
Dr. P . S. Dutta	Dispersal Synchrony and Stability in Population Dynamics	DST-SERB	Rs. 16,00,000	2015	2018
Dr. Manoranjan Mishra	Study of the Transient Flow of Hydrogen-Natural Gas Mixture in Pipeline Networks	NAM S&T Centre Research Training Fellowship	Rs. 3,00,000	2015	2018
Dr. G. S. Raju	On the existence of best proximity pairs and generalized equilibrium for constrained games	DST (SERB)	Rs 15,07,000	2016	2019
Dr.Tapas Chatterjee	Transcendental Numbers and special Values of Dirichlet series	GIAN project Funded by MHRD	Rs.5,44,000	2017	2017
Dr. Tapas Chatterjee	ISIRD Research Grant	IIT Ropar	Rs 2,30,000	2015	2018
Dr. Arvind K.Gupta	Motor Proteins and Molecular Motors" under Global Initiative of Academic Networks (GIAN) scheme of MHRD (Foreign Expert: Anatoly B. Kolomeisky, Rice University USA).	GIAN project	Rs 5,44,000	2019	2019
Dr. Arvind. K. Gupta	Mathematical modeling of two-channel exclusion processes relevant to real world: Analysis and Simulation	SERB-DST	Rs.10,92,000	2014	2017
Dr. S. C. Martha	Surface wave interaction with irregular bottom topography and barriers	SERB-DST	Rs.13,32,000	2014	2017

DEPARTMENT OF MECHANICAL ENGINEERING

Programs offered : BTech, BTech-MTech (Dual Degree), MTech and PhD

No. of Students :

BTech	:	250
BTech-MTech(Dual)	:	30
MTech.	:	76
PhD	:	124

Head of the Department : Dr. Ekta singla

No. of faculty members : 25

No. of staff members : 10

Thrust Areas:

1. Intelligent Mechanical Systems
2. Additive Manufacturing
3. BioMechanical Engineering
4. Energy Efficiency and Sustainability
5. Micro/Nano Engineered Systems

No. of Publications : 88

FACULTY MEMBERS

Dr. Anshu Dhar Jayal
PhD (University of Utah)
Sustainable manufacturing technologies

Dr. Anupam Agrawal
PhD (Indian Institute of Technology Kanpur)
Analysis of Metal Forming Processes, Dieless forming, Micro-Nano Machining, Additive Manufacturing

Dr. Chandrakant Kumar Nirala
Ph.D (IIT Patna)
Conventional and non-conventional micro-machining, sensors based tool condition monitoring, data acquisition and virtual instrumentation, ultrasonic vibration-assisted machining, fusion and solid-state joining

Dr. Chander Shekhar Sharma
Ph.D (ETH Zurich)
Phase Change Fluid Dynamics and Thermal Transport, Surface Micro and Nano Engineering for Optimal Phase Change, Robust and Scalable interfaces, Exergetically Efficient Systems, Electronic Thermal Management, Single and Multiphase Convective Cooling, Computational Fluid Dynamics, Experimental Techniques for Heat Transfer and Fluid Phenomena.

Dr. Devranjan Samanta
PhD (Saarbrucken University and Max Planck Institute for dynamics and self Organisation, Goettingen, Germany)
Transition to turbulence, Non-Newtonian flows, Biological flows, heat transfer

Dr. Dhiraj K. Mahajan
PhD (Indian Institute of Technology Kanpur)
Simulation and experiment assisted development of high performance elastomeric and polymeric materials, mechanics and physics of polymers, adhesion at polymer-solid interfaces, fatigue failure of polycrystalline metals under aggressive environment with immediate focus on hydrogen based degradation of steels

Dr. Ekta Singla
(Head of the Department)
PhD (Indian Institute of Technology Kanpur)
Robotics, redundant manipulators, robot path planning,collision detection, obstacle avoidance, applied optimization methods - classical and evolutionary, optimal mechanical design

Prof. Harpreet Singh
PhD (Indian Institute of Technology Roorkee)
Surface Engineering-Degradation of Materials, High Temperature Corrosion and its Protection, Slurry Erosion of Hydraulic Turbines and its Control, Biomedical Coatings

Dr. Himanshu Tyagi
PhD (Arizona State University, USA)
Thermo-fluids, Bio-heat Transfer, Nanofluids, Nanoscale heat transfer, Clean and Sustainable Energy, Solar Energy, Water Desalination & Purification, Energy Storage, Ignition Properties of Fuels Containing Nano-Particles, Thermal Management and Packaging of Micro-Electronic Devices.

Dr. Jitendra Prasad
PhD (Michigan State University, USA)
Biomechanics, Bone Fracture Healing, Mechanotransduction, Structural and Multidisciplinary Design Optimization, Computational Mechanics, and Agent Based Modelling.

Dr. Lipika Kabiraj
PhD (Indian Institute of Technology Madras)
Thermoacoustics, applied nonlinear dynamics, gas turbine engines (combustion instability, flame blowout and flashback), combustion dynamics, combustion noise, Chaos

Dr. Manish Agrawal
PhD (Indian Institute of Science Bangalore, India)
Finite Element Analysis, Continuum Mechanics, Topology Optimization, Contact mechanics, Multiphysics Simulations

Dr. Navin Kumar
PhD (Indian Institute of Technology Delhi)
Biomechanics, Biological and Bio materials characterization, Finite element modeling (FEM), Biomedical Instrumentation and Bio-implants, Active and passive vibration and Noise control, Fault diagnostics and condition-monitoring.

Dr Navaneeth K Marath
PhD in Engineering Mechanics, JNCASR Bangalore, 2010-2017
Postdoctoral Research Associate, NORDITA Stockholm, 2017-2020
Microhydrodynamics, Geophysical Fluid Dynamics, Particles in Turbulent Flows.

Dr. Prabir Sarkar
PhD (Indian Institute of Science, Bangalore)
Product design, Sustainability and eco design, Creativity and innovation, Engineering design and industrial design, Manufacturing

Dr. Prabhat K. Agnihotri
PhDIndian Institute of Technology Kanpur
Processing, characterization and modelling of nanomaterials, multiscale hybrid composites, fracture mechanics, discrete dislocation plasticity, and molecular dynamics simulations.

Dr Rakesh K Maurya
PhD(Indian Institute of Technology Kanpur)
HCCI and Low Temperature Combustion for IC Engines, Alternative fuels, Engine Emission Control, Engine management systems

Dr. Ramjee Repaka
PhD (Indian Institute of Technology Kharagpur)
Bioheat Transfer, Cancer Diagnosis and Therapy, Heat Transfer, Thermal Engineering, High performance Buildings, Refrigeration, Air Conditioning and Ventilation.

Dr. Ranjan Das
PhD(Indian Institute of Technology Guwahati)
Heat and Mass Transfer, Optimization of Thermal Systems, Renewable Energy

Dr. Ravi Kant
PhD (Indian Institute of Technology Guwahati)
Laser Forming, Laser Transmission Welding, Laser Machining, Laser Assisted Manufacturing, Adhesive Joining, Ultra-high Speed Machining, Ultrasonic Vibration Assisted Machining, Process Modeling and Optimization of Manufacturing Processes, Finite Element Simulations

Dr. Sachin Kumar
PhD(Indian Institute of Technology Roorkee)
Research Interests: Finite Element Method, Extended Finite Element Method, Meshfree Methods, Fracture and Damage Mechanics

Dr. Samir Chandra Roy
PhD(University Grenoble Alpes, France)
Experimental and Numerical studies of deformation and damage of materials at elevated temperature, Mechanical and microstructural characterization of material, Fatigue-Creep-Fracture.Experimental and numerical studies of cavitation pitting/erosion,Instrumented Indentation Testing (IIT) and materials evaluation, High rate deformation of material and characterization, Finite Element Analysis.

Prof. Sarit K. Das (Director)
PhD (Sambalpur University)
Heat Transfer in Nano-Fluids, Micro channel Fluid Flow and Heat Transfer, Heat and Mass Transfer in Biological Systems, Boiling Heat Transfer

Dr. Satwinder Jit Singh
PhD (Indian Institute of Science, Bangalore)
Research Interests: Applied Mechanics, Numerical Methods

Dr. Srikant Sekhar Padhee
PhD (Department of Aerospace Engineering, IISc, Bangalore)
Variational Asymptotic Method, Multifunctional and Functionally Graded Composites

ONGOING ACTIVITIES

1. An ATAL FDP Workshop on Robotics System Design: Fundamentals, Challenges and Applications was organized in collaboration of AICTE by Dr. Ekta Singla as a host coordinator
2. The department has organized an online Lecture series in which eminent scientists were invited for special lectures.

FACILITIES

Name of the Equipments (New):
(Research Labs)

1	Metal 3D Printer EOS M 290
2	Duper XL600 3D Printer Base Model
3	Single Vessel Dip Coating System
4	FLIR A655sc25
5	FD-56 Drying and Heating Chambers Avantgarde Line with Forced Convection
6	CNC Milling Machine- SPM 250
7	Intel Real Sense Depth Camera
8	Humidity Control Chamber
9	Semi Automatic Cryostat Microtome
10	Semi Automatic Cryostat Microtome

AWARDS AND HONOURS (FACULTY)

1. Prof. Harpreet Singh and his research team has been awarded the Institute's 1st US Patent, No. 10,835,920 B2.
2. A National Patent No. 349338 is granted to the research team of Dr. Prabhat K Agnihotri.
3. The paper of Dr. Prabhat K Agnihotri has been recognized as top download and one of the most read in Polymer Composites by Wiley second year in a row.
4. Swedish Research Council (SRC) has awarded the research grant of 7,46 000 SEK (≈ 63,00 000 INR) for the research proposal: "Stubble Burning: Health impacts and social perception - an explorative study for prevention". This was written in collaboration with three Swedish experts in Health Economics and public health and colleagues of IIT Ropar, Dr. Samaresh bardhan (HSS), Dr. Parwinder Singh (HSS), and Dr. Prabir Sarker (ME).
5. Prof. Sarit K Das was at the top in the field of Mechanical Engineering from India with a rank of 191 in the world in the study list of top 2% scientists of the world published by Stanford University.
6. Dr. Ranjan Das was listed among the top in the field of Mechanical Engineering & Transportation from India with a rank of 1249 in the world in the study list of top 2% scientists of the world published by Stanford University.
7. Dr. Himanshu Tyagi received the Best Paper Award for the paper titled "Numerical Study of Nanoparticle Injection in Tumors for Nanoparticle-assisted Hyperthermia", at the 8th International and 47th National Conference on Fluid Mechanics and Fluid Power (FMFP), IIT Guwahati, Assam, India, Dec 2020.
8. Dr. Prabir Sarkar become a Domain coordinator- Agriculture and Water Development Hub (AWaDH) supported by Department of Science and Technology, Government of India, National Mission on Interdisciplinary Cyber Physical Systems (NM-ICPS)
9. Dr. Prabir Sarkar and Prof. Harpreet Singh along with project staff received MTV Roadies Revolution award as a team for developing Stubble Removing Machine (SRM), a cash prize of Rs. 1 lakh.

AWARDS AND HONOURS (STUDENT)

- Ashwin Goyal (2018MEB1214) has been accepted into the prestigious HPAIR (Harvard College Project for Asian and International Relations) Harvard 2021 Conference. It is an annual international conference hosted by Harvard University.
- Hemabh Trivedi (2018MEM1013) an M.Tech. Student at the Mechanical Engineering department with specialization in Thermal Engineering at IIT Ropar in 2018-2020 cleared the UPSC Engineering Services Examination (ESE) 2020 and secured AIR 10 in it.
- Best PhD thesis award for 2020 is awarded to Dr. Mohit Raj Saxena.
- The 1st prize for Sunny Oberoi Best MTech Thesis award for the year 2020 is awarded to Mr. Peeyush Mahajan.
- Institute Silver Medal for obtaining the highest CGPA amongst the graduating students in BTech in the year 2020 has been awarded to Mr. Macha Vidyaaranya.
- The Institute Silver Medal for obtaining the highest CGPA amongst the post graduating students of the MTech in the year 2020 has been awarded to Rahul Kumar.
- The Institute Silver Medal for obtaining the highest CGPA amongst the B.Tech–M.Tech Dual Degrees programme in the year 2020 has been awarded to Vishal Kumar.

INVITED LECTURES BY FACULTY

Sr. No.	Name	Purpose	Host Institute	Date
1	Dr. Devranjan Samanta	Soft Matter Young Investigators Meet online conference	IISc and IIT Madras	3-5 December , 2020
2	Dr. Himanshu Tyagi	1. Chaired two sessions during the 8th Intl. & 47th National Conference on Fluid Mechanics and Fluid Power (FMFP), India. 2. Chaired the panel discussion session on the topic of Solar Energy during the 5th Intl. Conference on Sustainable Energy and Environmental Challenges (5th SEEC), India.	IIT Guwahati IIT Kanpur	December 2020 December 2020
		1. Invited talk Introduction to 3D printing and Standards, Norms and Regulations for 3-D Printing. AICTE Training and Learning (ATAL) Academy sponsored 5 day Faculty Development Programme (FDP) on Advancement and Futuristic Trends in 3D Printing and Design. 2. Invited talk. Sustainable Product Design: Towards a better future. Five-day Short-Term Training Program (STTP) funded by TEQIP III on "Sustainable Manufacturing for Atma-Nirbhar Bharat" from . Department of Management Studies.	IIT Ropar MNIT Jaipur Conference	February 1-5, 2021 Dec 21 - 25, 2020 December 19-20, 2020

3	Dr. Prabir Sarkar	3. Invited talk. Standards in Design and Manufacturing. 8thInternational Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering, . 4. Delivered a talk on Post-harvest Stubble Removing Machine (SRM). Agriculture Technologies presentations facilitated by the office of Principal Scientific Adviser, GOI in partnership with NASSCOM Foundation 5. Delivered a lecture on Intellectual Property Rights as the Chairman of IPR cell, IIT Ropar. Faculty development program on "Research trends in science and engineering" in on . 6. Guest online lecture on “Approaching education related issues using creative problem solving techniques” for faculty members. 7. Guest Lecture, on "Reverse engineering" for ME student.	PSA office NASSCOM Foundation Institute of Engineering & Management Salt Lake, Kolkata G H Raisoni Institute of Engineering and Technology, Pune GLA University	2020 29th July 2020 6th June 2020 23/04/2020
4	Dr. Ranjan Das	1. Delivered a Keynote Lecture (*Online*) on "Energy Conservation in Buildings using Renewable Energy" in Webinar on Energy & Sustainability. 2. Delivered an Invited Lecture (*Online*) on "Use of Renewable Energy for Recharging Batteries" in International Conference on Advancements and Futuristic Trends in Mechanical and Materials Engineering (*AFTMME*-2020). 3. Delivered an Invited Lecture (*Online*) on "Renewable Energy Based Heat Recovery Systems for Domestic Applications" in QIP-Short Term Course on Waste Heat Recovery & Utilization. 4. Delivered an Invited Lecture (*Online*) on "Applications of Renewable Energy Resources for Domestic Utility" in TEQIP–III sponsored Virtual Workshop on Renewable Energy & Sustainable Development. 5. Delivered an Invited Lecture (*Online*) on "Computational Fluid Dynamics", in TEQIP–III sponsored Faculty Development Programme on Essentials of Salient Subjects in Thermal Engineering (*ESSTE-2021*).	NIT Agartala IIT Ropar IIT BHU NIT Uttarakhand NIT Surathkal, India and Govt. College of Engineering, Jhalawar	04/08/2020 09/12/2020 19/01/2021 03/032021 19/03/2021
5	Prof. Harpreet Singh	“Writing a Research Proposal and Executing the Project”, Faculty Development Program (FDP) on "Enhancing Research Capabilities",	Online	June 4, 2020

6	Prof. Harpreet Singh	"My Experiences with Research in Surface Engineering" Short-term Course on "Advancements in Manufacturing and Material Processing – AMMP"	NIT Jalandhar, India	January 2-6, 2020
7	Dr. Anupam Agrawal	Additive/ Rapid Prototyping techniques: Capabilities and Limitations	Faculty development program on Advancements and Futuristic Trends in 3-D Printing and Design, IIT Ropar	Feb 4, 2021
8	Dr. Anupam Agrawal	Recent developments in Metal Forming Processes and their Industrial Acceptability	TEQIP-III sponsored STTP on "Advances in Manufacturing" , SVNIT Surat	Oct 6, 2020
9	Dr. Ramjee Repaka	Delivered an invited talk (webinar) on "Radiofrequency Ablation of Breast Cancerous Tissue: A Computational Approach". FDP on "Engineering Aspects of Current Learning Needs for Faculty".	Amity School of Engineering and Technology, Amity University, Kolkata	22 June 2020
10	Dr. Ramjee Repaka	Delivered an invited talk (webinar) on "RFA of Cancerous Tissue: Computational Perspectives". FDP on "Recent Advances in Biomedical Applications and Communication Networks (RA-BACN 2020)".	GMR Institute of Technology, Rajam, AP	13 July 2020
11	Dr. Ramjee Repaka	Delivered an invited talk (webinar) on "Current Trends in Minimally Invasive Ablation Systems for Treating Tumors, and Their Working". One-week online FDP.	Vignan's Foundation for Science, Technology and Research, Guntur, AP	23 July 2020
12	Dr. Ramjee Repaka	Delivered an expert talk (webinar) on "Analysis of Vapor Compression Refrigeration System Cycle"	G.H. Raisoni Institute of Engineering and Technology, Pune in association with ISHRAE Pune Chapter	18 August 2020
13	Dr. Ramjee Repaka	Delivered an expert talk (webinar) on "Current Trends in Minimally Invasive Ablation Systems for Treating Tumors, and their Working"	Vimal Jyothi Engineering College, Kannur, Kerala	28th August 2020

14	Dr. Ramjee Repaka	Delivered an expert talk (webinar) on "Numerical Analysis of Breast Cancerous Tissue Ablation during RFA Procedure"	G.H. Raisoni Institute of Engineering and Technology, Pune in association with ISHRAE Pune Chapter	04 September 2020
15	Dr. Ramjee Repaka	Delivered an invited talk (webinar) on "Directional Ablation of Cancerous Tumor during RFA Procedure". International Conference on "Advancement and Futuristic Trends in Mechanical and Materials Engineering (AFTMME-20)"	IIT Ropar	19 December 2020

LECTURES BY EXPERTS

Sr. No.	Name	Affiliated Institute/Organization	Purpose/Topic of Talk	Date
1.	Dr. Guruprasad Rao	Director at Imaginarium India Pvt Ltd	Product Design Aspects for Additive Manufacturing	26/11/ 2020
2	Professor Joseph Mathew	IISc Bangalore	Satish Dhawan centenary lecture series	25.09.2020
3	Professor SV Kailash	IISc Bangalore	Satish Dhawan centenary lecture series	12/09/2020
4	Professor ML Munjal	IISc Bangalore	Satish Dhawan centenary lecture series	02.10.2020

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

Sr. No.	Funding Agency	Name of the PI	Title of Project	Amount (In Crore Rs.)
1	STARS	Dr. Navin Kumar	Model Development for clinician to predict the bone and soft tissue strength and quality for type 2 Diabetic patients	0.31
2	Industrial Consultancy	Dr. Srivatsava Naidu (CI) Dr. Dhiraj K. Mahajan (Co-CI)	Synthesis and Validation of Germicidal Coating for Bopp Films	0.15
3	DRDO-CARS	Dr. Navin Kumar	High speed impact Dynamic and Deformation analysis of Target-projectile system using 3D-DIC Technique	0.58
4	DHI	Dr. Prabhat K. Agnihotri	Development of Efficient Battery Thermal Management System for Two and Three Wheeler EV application through design of Innovative Packaging Material	1.70

5	SERB-CRG	Dr. Ramjee Repaka with Dr. Naveen Kalra, PGIMER	Application of Microwave Ablation Technique in Destruction of Large Size Tumors: Numerical and Experimental Studies	0.48
6	SERB-CRG	Dr. Rakesh Kumar Maurya	Experimental investigation of toxicity and mutagenicity of particulates, and combustion stability in conventional as well as advanced high- efficiency reciprocating engines using different alternative fuels.	0.30
7	SYST (DST-SEED)	Mr. Malkeet Singh(PhD student, ME) -PI and Dr. Shilpi Chaoudhary - Co-PI	Recycling Of Machining And Packing Waste Via An Innovative Additive Manufacturing Process	0.38
8	SERB	Dr. Ranjan Das	Design and Development of a Solar Pond and Biomass Driven Thermoelectric Unit for Domestic Power Generation using Inverse Method	0.44
9	DST	Dr. Ranjan Das	Design and Development of Solar and Agricultural Waste-Based Building Cooling System	0.38
10	Cognitive Science Research Initiative (CSRI), DST	Dr. Prabir Sarkar	Study of aesthetics in product design using eye-tracking equipment from a cognitive view	0.16
11.	Cognitive Science Research Initiative (CSRI), DST-	Dr. Sudarsan Iyenger (PI) Dr. Prabir Sarkar (Co PI,)	Big Data Analysis: A key to understand the Dynamics of Collaborative Knowledge Building	0.14
12.	IMPRINT- 2, MHRD, GOI and ELT India	Dr. Prabir Sarkar(PI) + other CoPI	Micro Green Roofing	0.75
13.	DST	Co-PI (Co-PIs: Dr. Pushpendra Singh, Dr. Prabir Sarkar, Dr. Mukesh Saini, Dr. Neelkant, Dr. Vijay Anand, Dr. Suman Kumar, Dr. Neeraj Goel)	Establishing of Agriculture and Water Hub under National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS): Technology Innovation Hubs (TIHs)	110

DEPARTMENT OF METALLURGICAL AND MATERIAL ENGINEERING

Programs offered : B.Tech. & Ph. D

No. of Students : B. Tech. : 53

Ph.D. : 24

Head of the Department : Dr. Ravi Mohan Prasad

No. of faculty members : 07

No. of staff members : 02

Technical Staff : 00

Administrative Staff : 02

Thrust Area :

- Physical Metallurgy
- Extractive Metallurgy
- Mechanical Metallurgy
- Energy and Nanomaterials and related areas

No. of Publications : 11 (Journals)

1 (Book Chapter)

FACULTY MEMBERS

Dr. Abhishek Tiwari
Assistant Professor
PhD, Bhabha Atomic Research Centre
Fracture mechanics, configurational forces, ductile brittle transition, time dependent and large scale plasticity, finite element modelling

Dr. Atharva Poundarik
Assistant Professor
(Joint faculty in Metallurgical and Materials Engineering)
PhD, Rensselaer Polytechnic Institute
Biomaterials, medical devices – design and development; regenerative medicine

Dr. Khushboo Rakha
Assistant Professor
PhD, Deakin University Australia
Advanced High Strength Steels (Nano-structured Bainitic Steels, Ultra Low Alloyed Steels, TWIP Steels and Dual Phase Steels)

Dr. Neha Sardana
Assistant Professor
PhD, IMPRS-MLU, Halle, Germany
Size-Property (electrical, mechanical and optical) relationship of Nanomaterials, Optical Materials (Plasmonic /meta-materials) for sensing applications

Dr. Prince K Singh
Assistant Professor
PhD, IIT Kanpur
Process Metallurgy; Physical and mathematical modelling of steel making processes; Recycling of steel plant's waste material, Ferrous Extractive metallurgy

Dr. Pratik K. Ray
Assistant Professor
PhD, Iowa State University
Interface Dynamics and Energetics of Alloys; High Temperature Materials, High Entropy Alloys, Metallic Glasses; Materials Informatics, Mathematical Modeling

Dr. Ravi Mohan Prasad
Assistant Professor
PhD, Technische Universität Darmstadt, Germany
Polymer-derived Porous Ceramics, Metal Matrix composite, Corrosion and High Temperature Oxidation Resistance Materials, Membranes for Hydrogen Purification, Chemiresistor Gas sensors, Hydrogen Storage Materials, Photocatalysts for Wastewater Decontamination

FACILITIES

No. of Labs	:	UG	:	02
		PG	:	NA
		Research	:	07

New Labs : 03

1. Name of the lab (Research)	:	**Computational fracture mechanics Lab (CFM Lab)**
Name of the Head of the Research lab	:	Dr. Abhishek Tiwari
2. Name of the lab (Research)	:	**Process and Steel Research laboratory**
Name of the Head of the Research lab	:	Dr. Prince Kumar Singh
3. Name of the lab (Research)	:	**Lab for Advanced Biomaterials and Biomanufacturing**
Name of the Head of the Research lab	:	Dr. Atharva Poundarik
Name of the Equipment	:	3D bioprinter, tangential flow filtration system

AWARDS AND HONOURS 2020-21 (FACULTY)

EXTERNAL:

1. Dr. Neha Sardana and Mr. G. P. Singh made prototype and published paper: Affordable, compact and infection-free BiPAP machine, Transactions of the Indian National Academy of Engineering, July,1, 2020.
2. Dr Prince's paper got selected for the IIM-SAIL gold medal for the best paper in ferrous metallurgy published in Transactions of IIM. Paper detail is as follows:
   Ankur Agnihotri, Prince KSingh, Rishikesh Mishra and Dipak Mazumdar: " Steady state materials and enthalpy balance: applications to ferroalloy production and industrial scale validation", Transactions of Indian Institute of Metals, Vol.72, 2019, pp.455-473
3. Dr. Pratik Ray received the best oral presentation award at the Annual Technical Meeting of Indian Institute of Metals (NMD-ATM-2020), held between February, 22-25th 2021.
4. Dr. Neha Sardana, elected as Indian National Young Academy of Sciences (INYAS) Fellow 2021-2025.

INTERNAL:

1. Dr. Abhishek Tiwari got first consolation prize in mother tongue poetry and song competition organized by Hindi cell, IIT Ropar inFebruary 21, 2021
2. Dr. Abhishek Tiwari got first prize in Patriotic song competition organized by Hindi cell, IIT Ropar in January, 2021
3. Dr. Abhishek Tiwari got first prize in Hindi debate competition organized by Hindi cell, IIT Ropar in Hindi Pakhwada 2020, IIT Ropar
4. Dr. Abhishek Tiwari got second consolation prize in Hindi handwriting competition organized by Hindi cell, IIT Ropar in Hindi Pakhwada 2020, IIT Ropar
5. Dr. Abhishek Tiwari got third prize in Hindi poetry competition organised by Hindi cell, IIT Ropar in Hindi Pakhwada 2020, IIT Ropar

6. Dr. Abhishek Tiwari received First prize in speech competition on 150th Birth Anniversary of Mahatma Gandhi on September, 2020.
7. Dr. Neha Sardana got 2nd prize, Kavita oration, organized by Hindi cell, IIT Ropar in Hindi Pakhwada 2020, IIT Ropar.

AWARDS AND HONOURS 2020-21 (STUDENT)

1. Gaurav Pal Singh, PhD Scholar have secured 1st position in oral presentation in 14th Chandigarh Science Congress jointly organized by Panjab University and Chandigarh Region Innovation and Knowledge Cluster, held from 17-19 December 2020. The title of the presentation was: Affordable BiPAP machine with an infection-free mask.

INVITED LECTURES BY FACULTY

1. Dr. Abhishek Tiwari was an invited Speaker at Department of Metallurgical and Materials Engg., MNIT on Effect of material inhomogeneity on crack driving force in September, 2020.
2. Dr. Abhishek Tiwari delivered an invited talk on Configurational forces to enhance crack resistance of materials in AFTMME conference organized by Society of Mechanical and Materials Engineer on 19th Dec., 2020.
3. Dr. Khushboo Rakha and Dr. Neha Sardana were an Invited Speaker in webinar: Tech for good, SWE India-IIT Ropar, 20th June, 2020.
4. Dr. Neha Sardana was an invited Speaker, at the Centre for Nano-Science & Nano-Technology, Panjab University, Chandigarh, for talk titled Nanostructured materials in nature, metamaterials and their optical properties, 26th Feb 2021.
5. Dr. Neha Sardana was an invited Speaker, in 2-weeks Refresher Course (13.02.2021 to 26.02.2021) titled Research Methodology in Science-Research and Innovation Ecosystem, PU Chandigarh, 20th Feb 2021
6. Dr. Neha Sardana was invited panelist for Panel Discussion, WISE-INYAS event : Why I chose Science and my Challenges in Science, on international day for women and girls in science, 11th Feb. 2021
7. Dr. Neha Sardana was an Invited Speaker in a webinar: Recent trends in materials and technologies to combat Covid19, HRMMV Jalandhar, 21st July,2020.
8. Dr. Neha Sardana was an invited Speaker at Dr. Shanti Swarup Bhatnagar University Institute of Chemical Engineering & Technology (Dr. SSB UICET), PANJAB UNIVERSITY, Chandigarh organized TEQIP-III (MHRD, Govt. of India) sponsored International Conference on Sustainable Research on Plasmonics and Nanotechnology on 24th September 2020.
9. Dr. Prince Kumar Singh was an invited speaker at Role of modelling in steelmaking: Current trends and an useful insight through laboratory experiments and corresponding numerical validation at ArcelorMittal/Nippon Steel India on 15th November, 2020.
10. Dr. Prince Kumar Singh delivered talk on “Conceivable implication of melt transfer on its cleanliness through shroud from ladle to tundish – An insight to flow characteristics” in AFTMME conference organized by Society of Mechanical and Materials Engineer on 19-20 Dec., 2020

11. Dr. Pratik K. Ray delivered an invited talk on “Solving the puzzle of (high-entropy) metallic glasses” in AFTMME conference organized by Society of Mechanical and Materials Engineer on 19 -20 Dec., 2020.

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

SPONSORED BY EXTERNAL FUNDING AGENCIES

S. No.	Name of the faculty	Project Title	Funding Agency	(Ongoing/ Completed)
1	Dr. Atharva Poundarik (PI)	Processing of waste placental tissue from maternity wards into regenerative tissue grafts for non-healing wounds and other clinical applications	DST-TDT	Ongoing
2	Dr. Atharva Poundarik (PI)	Development of a low-cost, 3D-printable osteoadhesive with versatile applications in orthopaedic surgery	SERB-SRG	Ongoing
3	Dr. Atharva Poundarik (PI)	Development and characterization of medical polyurethane materials and dressings	Industry sponsored	Ongoing
4	Dr. Neha Sardana (Co-PI)	Exploring the Shell Proteins of BMCPs as Potential Substrates for Fabrication of Organic-Inorganic Hybrid Nanomaterials	NANOMISSION DST	Ongoing
5	Dr. Neha Sardana (PI)	Tailorable plasmonic metamaterial substrates,	SERB-ECR	Completed
6	Dr. Neha Sardana (Co-PI)	Air Purification Device for harmful pollutant and VOC sequestration: Economical and reusable,	DST-TDP	Completed
7	Dr. Ravi Mohan Prasad (PI)	Thermoresistant Polymer-Derived Microporous Ceramic Membranes for Separation of Hydrogen and Carbon Monoxide/Carbon Dioxide in Hydrogen Production,	DST HFC-2018	Ongoing
8	Dr. Ravi Mohan Prasad (PI)	Polymer-Derived Ceramic Membranes for High Temperature Hydrogen Purification	BRNS-DAE YSRA	Ongoing
9	Dr. Ravi Mohan Prasad (Co-PI)	Development of Compressed Hydrogen-Fuel Cell Integrated System Suitable for Light-Duty Vehicles,	DST HFC-2018	Ongoing
10	Dr. Ravi Mohan Prasad (Co-PI)	Design, Development, and Demonstration of Indigenous Hydrogen Storage and Fuel Cell System for Mobile and Stationary Applications of 5 kW Capacity,	IMPRINT (MHRD-MNRE)	Ongoing
11	Dr. Ravi Mohan Prasad (PI)	Selective Gas Detection and Protection of Sensing Layer in Harsh Environments using Silicon-Containing Polymer-Derived Ceramic Filters	DST-SERB	Completed

SPONSORED BY IIT ROPAR

S. No.	Name of the faculty	Project Title	Funding Agency	(Ongoing/ Completed)
1	Dr. Abhishek Tiwari	Improved creep-fatigue crack resistant material design using configurational force approach,	ISIRD Phase I, IIT Ropar	Ongoing
2	Dr. Neha Sardana	Optical device prototype for sensing water contamination using mobile phones,	ISIRD Phase I, IIT Ropar	Ongoing
3	Dr. Prince Kumar Singh	Role of ladle shroud designs on hydrodynamic performance of steelmaking tundish system – A numerical study	ISIRD Phase I, IIT Ropar	Ongoing
4	Dr. Pratik K. Ray	Phase Selection in Multi-principal Element Alloys	ISIRD Phase I, IIT Ropar	Completed
5	Dr. Pratik K. Ray	Design and Development of Novel High-Temperature Compositionally Complex Alloys	ISIRD Phase II, IIT Ropar	Ongoing

DEPARTMENT OF PHYSICS

Programs offered	:	MSc -MS (R), Ph.D
No. of Students		M.Sc. : 56 PhD : 57
Head of the Department	:	Dr. Asoka Biswas
No. of faculty members	:	17
No. of staff members	:	04 Technical Staff : 04 Administrative Staff : 01
Thrust Area	:	• Light-Matter Interaction and Quantum Information, • Condensed Matter • Nuclear Physics • Gravity and String (Theory)
No. of Publications	:	25

FACULTY MEMBERS

Dr. Asoka Biswas
Associate Professor
Ph.D (Physical Research Laboratory,Ahmedabad)
Quantum Computation and Information, Quantum Thermodynamics, Cavity,Optomechanics

Dr. Rakesh Kumar
Associate Professor
Ph.D (Indian Institute of Technology Bombay)
Theoretical and Experimental Condensed Matter Physics

Dr. Deepika Choudhury
Assistant Professor
Ph.D (Indian Institute of Technology Roorkee)
Experimental Nuclear Physics

Prof. R. G. Pillay
Visiting Professor / DAE – Raja Ramanna Fellow
Ph.D (TIFR, Mumbai University)
Nuclear Physics, Accelerator Physics and Technology, Condensed Matter and Low temperature Physics

Dr. Debangsu Roy
Assistant Professor
Ph.D (Indian Institute of Science, Bangalore)
Insulating spintronis, Spin transfer torque & Spin orbit torque in magnetic heterostructures

Dr. Rajesh Kumar Gupta
Assistant Professor
Ph.D(Harish Chandra Research Institute, Allahabad)
Quantum field theory, Black holes and Modular forms

Dr. Rajesh V. Nair
Associate Professor
Ph.D (Indian Institute of Technology Bombay)
Nano-Optics and Meta-Materials, Quantum Photonics and Plasmonics, bio-inspired photonics

Dr. Subhendu Sarkar
Associate Professor
Ph.D (Saha Institute of Nuclear Physics, Kolkata)
Low energy ion beam physics, fabrication of nanostructures on semiconductor surfaces using ion beams, and secondary ion mass spectroscopy

Dr. Kailash Chandra Jena
Assistant Professor
Ph.D (Indian Institute of Technology Madras)
Nonlinear Laser Vibrational Spectroscopy, Interfacial Water Structure, Binding of Ions to Amino Acids, Lipids and Proteins, Radiation Induced Effects and Deformation at Interfaces

Dr. Shubhrangshu Dasgupta
Associate Professor
Ph.D (Physical Research Laboratory,Ahmedabad)
Quantum Optics, Quantum Plasmonics, Quantum Biology

Dr. Mukesh Kumar
Associate Professor
Ph.D (Indian Institute of Technology Delhi)
Functional and Renewable energy materials, Thin Film photovoltaics, sensors and photodetectors

Dr. Shankhadeep Chakrabortty
Assistant Professor
PhD(Institute of Physics, Bhubaneswar)
String Theory, AdS/CFT, Gauge/Gravity duality, Quantum Field Theory.

Prof. P. K. Raina
Professor
Ph.D (Indian Institute of Technology Kanpur)
Nuclear structure, Neutrino Physics and Astrophysics

Dr. Sourav Bhattacharya
Assistant Professor
Ph.D (S. N. Bose National Centre for Basic Sciences, Kolkata)
General Relativity, Cosmology; Dark Energy and the Early Universe, Quantum Field Theory in Curved Spacetime

Dr. Pushpendra P. Singh
Assistant Professor
Ph.D (Inter-University Accelerator Center, New Delhi /Aligarh Muslim University)
Experimental Nuclear Physics & Applications

Dr. Sandeep Gautam
Assistant Professor
Ph.D (Physical Research Laboratory Ahmedabad)
Ultracold quantum gases at zero and finite temperatures(Theory)

Dr. Vishwa Pal
Assistant Professor
Ph.D (Jawaharlal Nehru University, New Delhi)
Phase locking of lasers, Coherent optical computing, Diffractive optics, Diffractive optics, Topological photonics, Fiber lasers

FACILITIES

No. of Labs	:	UG	:	02
		PG	:	04
		Research	:	11

UNDERGRADUATE LABS AND FACULTY INCHARGE

Dr. Deepika Choudhury(Faculty Incharge) :
- General Physics Lab
- Optics Lab

Name of the Labs (PG) and Faculty Incharge:
- M.Sc. Condensed Matter (Dr. S. Sarkar)
- M.Sc. Nuclear Physics Lab (Dr. Pushpendra P. Singh)

Dr. Rajesh V. Nair (Faculty Incharge):
- M.Sc. Optics Lab

Dr. Debangsu Roy (Faculty Incharge):
- M.Sc. Electronics Lab

Name of Research labs

Sr. No.	Name of Research Lab	Name of the Head of the Research Lab	Name of the equipment
01	Material Deposition Lab	Dr. S. Sarkar	DC/RF magnetron sputtering facility Sonicator with heater Spin coater Balance Dip coater Ion gun Environment Chamber
02	Graphene lab	Dr. Rakesh Kumar	Electrostatic deposition technique set up Optical microscope Diamond wire saw Sonicator, hot plate
03	Nanoscience lab	Dr. Rakesh Kumar	Chemical Vapor deposition set up Box furnace Hydraulic press
04	Nano-optics lab	Dr. R.V. Nair	Micro-reflectivity set-up Spontaneous emission measurements in frequency and time Total transmission measurement and Coherent backscattering set-up Confocal scan microscope
05	Common Material Synthesis lab	Dr. R.V. Nair	Low temperature oven LG Refrigerator to keep chemicals
06	Central facility	Dr. R.V. Nair	UV-Vis-NIR Spectrophotometer
07	NuStaR Research Lab	Dr. Pushpendra P. Singh	RUDRA - Ropar Unified Detectors for Radionuclides Analysis: Setup consists of 4 HPGe Detectors coupled with VME-MBS based Hybrid Data Acquisition (HyDAQ) system. ILMI - IIT Ropar Low-Background Measurement Infrastructure: This setup is developed for rare-decay studies Computing Cube: a high power computing facility for near/off-line data analysis.
08	Functional and Renewable Energy Materials (FREM) Lab	Dr. Mukesh Kumar	Combinatorial sputtering system Double chamber sputtering unit Solar Simulator Keithley SMU (6430) Thermal CVD Miniprobe station Hall measurement EQE/IQE measurement Semiconductor Parameter Analyser (Keithley 4200) Spectrophotometer (Bentham) 2 zone quartz tube furnace

09	Non-Linear Light Scattering & Bio Photonics Lab	Dr. K. C.Jena	Sum Frequency Generation Vibrational Spectrometer FTIR Spectrometer and Microscope Weighing Balance Low Power HeNe Lasers (532 (1 mW) and 632 nm (2 mW)) Homogenizer Sonicator Fast Frame Rate Scientifi c Camera pH Meter Compact Fluorescence Spectrometer (Compact) Langmuir-Trough Compact Nanosecond laser Zetaseizer Nano
10	Spintronics and Thin film magnetism Lab	Dr. Debangsu Roy	Lock in amplifiers Low noise voltage preamplifier Manual wedge bonder Table top water cooled electromagnet Hot plate and stirrer Bipolar power supply High speed DAQ cards
11	Laser Physics Lab	Dr. Vishwa Pal	High performance workstation Laser beam profiler Spatial light modulator Dual channel laser power meter High power photodetector He-Ne Laser

AWARDS AND HONOURS 2020-21 (Faculty)

Dr. Rajesh V. Nair, Associate Professor, Department of Physics, IIT Ropar received the top and most competitive Scientific Awards of the country, Swarnajayanti Fellowships in Physical Sciences. Dr. Nair is the first IIT Ropar faculty to achieve the fellowship in Physical Sciences since the second generation IITs were established in 2008.

AWARDS AND HONOURS 2020-21(Student)

1) Sudhir K Saini, Incubic Milton Chang Travel Grant CLEO, Optical Society of America.
2) Bhawna Rana, received Newton-Bhabha Fellowship to visit Nottingham Trent University, UK to carry out some collaborative research work with Prof. David Fairhurst.

VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1.	Bhawna Rana	United Kingdom	Visit under Newton-Bhabha Fellowship 5th Nov, 2020 to 1st March, 2021

MAJOR RESEARCH PROJECTS (Ongoing/Completed)

Rajesh V Nair

Active plasmonics: Manipulating the emission of quantum emitters using plasmonic structures (Indo-Russia International Project), ~32 lakhs

Nanophotonic control on the emission properties of color centers in nanodiamonds for quantum optical applications, DST-ICPS, National Initiative on Quantum Technologies, GoI, DST, ~1.8 cr

Studies on the spectral and temporal modification of spontaneous emission of solid state defects using resonant photonic structures, Swarnajayanti Fellowship Project DST-SERB, 3.4 Cr

Kailash C. Jena

Core Research Grant, SERB, DST (47.07 lakhs), "In Situ Probing of Intermolecular Interactions at Buried Polymer Nanocomposite Aqueous Interfaces by Sum Frequency Generation Vibrational Spectroscopy for Biofouling Application".

INDO-TAIWAN JOINT RESAERCH CENTRE ON ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (ITJRC)

Investigator of the Centre : Prof. Shi-Ming Huang,
Department of Accounting and Information Engineering,
National Chung Cheng University, Taiwan.

Co-ordinator of the Centre :

1. Prof. Pao -Ann Hsiung,
National Chung Cheng University, Taiwan.
2. Dr. Rohit Sharma, Associate Professor,
Electrical Engineering, IIT Ropar

Administrative staff members : Harsimrat Kaur, Project Manager, ITJRC.

ACTIVITIES

WORKSHOPS

Online Certificate Course on Fundamentals of Deep Learning

The Indo-Taiwan Joint Research Centre @IIT Ropar conducted a 3-day online certificate course in collaboration with National Chung Cheng University, Taiwan and Best Marketing Company, Tamil Nadu.

Mode: Online
Time of Lecture - 10 am – 1: 30 pm IST
Dates of the lectures:
August 15 – 17, 2020

No. of Registrations- 22
Instructor:
Prof. Pao Ann-Hsiung, Professor, CCU, Taiwan.

FIVE- DAY ATAL WORKSHOP ON ARTIFICIAL INTELLIGENCE

AICTE sponsored workshop was conducted from 22nd to 26th February 2021.The inauguration was held on 22 February 2021 online. Chief Guest of the program was officiating Director, IIT Ropar, Prof. P.K. Raina. Dr. Rohit Sharma, Associate Professor, Electrical Engineering and Coordinator chaired the function along with deans and faculty members and participants of different academies.

Director IIT Ropar, Prof. P. K. Raina addressed the participants about IIT Ropar and online FDP and the partner organisations. Prof. Raina talked about IIT Roles and Responsibility in technical education.

Prof. Pao- Ann Hsiung, National Chung Cheng University, Taiwan, Mr. Gagan Aggarwal, Canada – India Centre for Excellence, Carleton University and Dr. Ravishankar Anand, INSOFE edu. Pvt. Ltd. Hyderabad were also present in the inauguration session and shared their thoughts. Dr. Rohit Sharma, Coordinator proposed the Vote of Thanks.

Each day 3 sessions were conducted covering the different topics on artificial intelligence by faculty and industry experts. The no. approved participants is 189 from different parts of the country participated in this FDP.

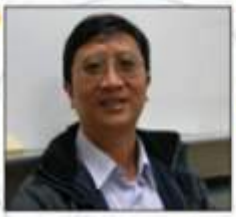
ONLINE WEBINARS

ITJRC organize monthly online webinar for the students from different regions of the country. List of the seminars is as follows:

I. Webinar: AI IN SPORTS IOT

Name of the Speaker	:	Prof. Chih- Hsiong Shih
Institute	:	Tunghai University
Date	:	May 22, 2020
Registered Participants	:	305

The Speaker: **Prof. Chih- Hsiong Shih**



Prof. Chihh -Siong Shih received his BSc degree from Chung Yuan Christian University, Taiwan, in 1984 and his MSc in computer science, and PhD degree in mechanical engineering in 1997, all from Rensselaer Polytechnic Institute, USA. Since then, he has been working in the CAD software industry. From 1997–2000, he has worked for a CAD simulation company, Simmetrix, while from 2000–2002, he worked for the EDA team of microelectronic division of IBM Corp. He is currently an associate professor of the department of computer science in Tunghai University, Taiwan.

His research interests mainly include IOT, Artificial Intelligence, sport science, and software engineering. He has been involved with many government and industry research projects, e.g., AIOT sport system integration for weight lifting and Table tennis, AI assisted ERP for smart manufacturing for the Ministry of Science and Technology (MOST), Taiwan. He is a long time member of IEEE society. He has hosted dozens of MOST research projects since 2002 and published more than 30 journal and conference papers in the area of AI and IOT applications.

Webinar: AI in Sports IoT

Abstract :

"Sport science is an interdisciplinary science that involves areas of physiology, psychology, anatomy, biomechanics, biochemistry, and biokinetics. This diversity in sport science has thus introduced challenges such as multi-faceted data collection, accuracy in knowledge formation, and usability (user experience) of the tools used by sportsmen. In this retrospect, Artificial Intelligence of Things (AIoT) presents not only a feasible solution but also one that can be adapted to different sports. AIoT is basically an integration of artificial intelligence (AI), big data analysis, cloud computing, and Internet of Things (IoT). AIot has been successfully applied to a wide number of domains. Taking weight training as an example, we propose to advance sport science by applying the AIoT technology to the above-mentioned challenges. We specifically focus on the application of Beginning Movement Load Training (BMLT) training set. Tracking and monitoring the labor index will help to understand its effectiveness in preventing sports injuries and fatigue during weight training.

Due to the limited label samples collected for fatigue and injury of a variety of athletic body shapes and varied characters via biochemical experiments, the OpenSim package was used as augmentation to generate large amounts of training samples that serve the customization purpose. The different sub-systems form a close loop of detect and advise to achieve the goal of secure training for better health."

Date: **May 22, 2020 (Friday)** | Time: **1.30 pm**

II. Webinar: REGTECH: THE WAY FORWARD

Name of the Speaker : Prof. Shih-Ming Huang
Institute : National Chung Cheng University
Date : June 17, 2020
Registered Participants : 127

The Speaker: **Prof. Shi-Ming Huang**

Dr. Shi-Ming Huang received his PhD degree at the School of Computing and Information Systems, University of Sunderland, U.K. He received the Certified Public Accountant (CPA) Australia in 2016. He received the professional fellowship from British Computer Association in 2014. He is currently a Director for the Center of e-Manufacturing and e-Commerce at National Chung Cheng University, Taiwan. He is also a joined professor in the Department of Accounting and Information Technology and the Department of Information Management. Before joining the university faculty, he was the Head at the Department of Information Management, Tatung University, Taiwan. He has published six books, three business software, over 100 articles in refereed information system journals and over 150 articles in the international conference . He has received over 10 achievement awards in information system area, such as ACME best paper (USA), e-Asia Achievement Award (Taiwan), Chinese Engineer Association Industry Cooperation Award (Taiwan), Chinese Internal Auditor Association Best Thesis Award (Taiwan), Chinese Information System Association Conference Best Paper Award (USA), Dragon Thesis Award (Acer, Taiwan), Literal Club Year Best Paper (UK), Software Design Final Competition (BCS, UK), etc. He had served as an associate editor in Decision Support System. He also serves as editorial board in several international journals, such as Journal of Computer Information Systems, International Journal of Mobile Communications, International Journal of Information Systems and Change Management. He has also acted as a consultant for a variety of Taiwan government departments, software companies and commercial companies.

Webinar: Regtech: The way forward

Abstract :

We broadly define computer auditing as any audit practices that may rely on information technology (IT). Such skill has long been argued and considered to be an important capability for both external and internal auditors for more than two decades though its applications were relatively limited in the past. In recent years, with the advance of information technology, what auditors can achieve with IT has dramatically changed. For example, auditors are now be able to perform both descriptive and predictive analyses, process both numeric and textual data, and apply such capability from assertion testing to compliance and risk assessments. This evolving capability has also brought the new term audit analytics to practices.

Specifically, analytics focuses more on the business decisions and processes while the traditional computer auditing is mainly about audit. This improved capability and expanded scope have attracted a lot of attention with a wide range of applications. For instance, the PCAOB new strategic plan (PCAOB 2018) has highlighted that innovations in data analytics and technology have great potential to improve the efficiency and effectiveness of financial reporting and the audit process. Audit firms and internal audit functions have also engaged in the development and the use of analytics in external and internal audit processes (e.g., Forbes 2018; Deloitte 2016; KPMG 2016), which have potentially changed the role of internal auditors to internal consultants.

Date: **June 17, 2020 (Wednesday)** | Time: **11.30 am IST | 2.00 pm (Taiwan's Time)**

III. Webinar: DETECTING DEEPFAKES: A CONTENT VS HUMAN-CENTRIC PERSPECTIVE

Name of the Speaker : Dr. Ramanathan Subramanian
Institute : Indian Institute of Technology Ropar
Date : July 17, 2020
Registered Participants : 106

The Speaker: **DR. RAM SUBRAMANIAN**

Dr. Ramanathan Subramanian received his Ph.D. in Electrical and Computer Engg. from NUS in 2008. He is an Associate Professor in Computer Science and Engg. at IIT Ropar. His past affiliations include IHPC (Singapore), U Glasgow (Singapore), IIIT Hyderabad (India) and UIUC-ADSC (Singapore). His research focuses on Human-centered computing, and especially on extracting and modeling non-verbal behavioral cues for interactive analytics. He is an IEEE Senior Member and a member of the ACM and AAAC

For Details: https://sites.google.com/site/raamsubram/

WEBINAR:

DETECTING DEEPFAKES: A CONTENT VS HUMAN-CENTRIC PERSPECTIVE

Abstract :

The commonplace availability of image and video forgery software has led to the widespread creation of image and video-based deepfakes for purposes such as trolls, disinformation campaigns and political propaganda. Even if deepfakes may not completely mislead people, they nevertheless contribute to uncertainty and distrust of media content, posing a significant challenge to democratic societies. Therefore, artificial intelligence (AI)-based fake detection techniques are critical for governments to inform citizens and shape public opinion. In this talk, I will discuss two competing paradigms for deepfake detection: (a) by mining the audio-visual content (i.e., content-centric), or (b) presenting such videos to a user and examining their response (user-centric). This work was done in collaboration with Dr. Abhinav Dhall (Monash University) and final-year B. Tech. project students, Komal Chugh and Parul Gupta.

Date: **July 17, 2020 (Friday)** | Time: **11.30 am IST | 2.00 pm (Taiwan's Time)**

IV. Webinar: REINFORCEMENT LEARNING - THE NATURAL WAY OF LEARNING FROM INTERACTION.

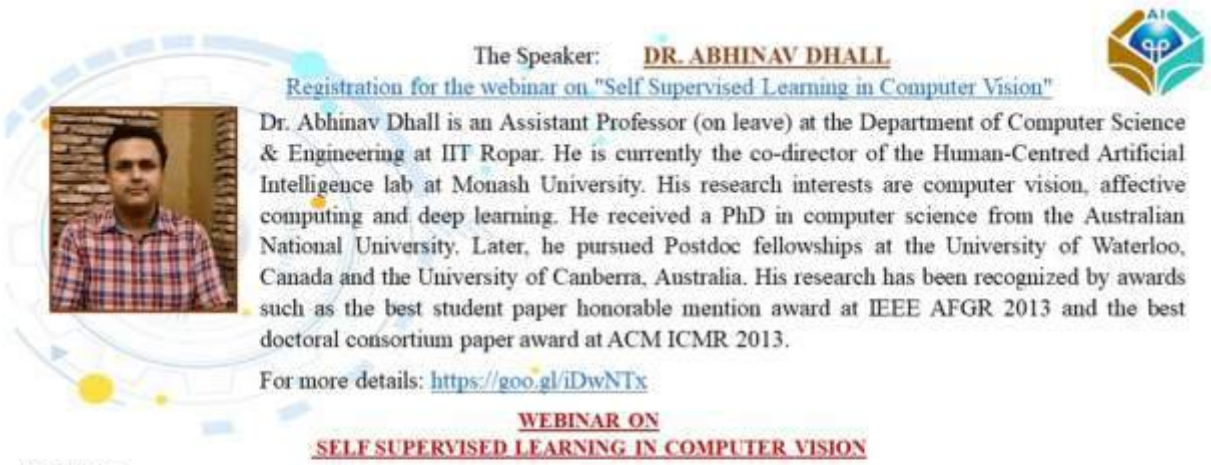
Name of the Speaker	:	Dr. Shashi Shekhar Jha
Institute	:	Indian Institute of Technology Ropar
Date	:	September 22, 2020
Registered Participants	:	152

V. Webinar: GENERATING ADVERSIAL EXAMPLES BY MAKEUP ON FACE RECOGNITION MODELS

Name of the Speaker	:	Dr. Chen- Kuo Chiang
Institute	:	Indian Institute of Technology Ropar
Date	:	October 25, 2020

VI. Webinar: GENERATING ADVERSIAL EXAMPLES BY MAKEUP ON FACE RECOGNITION MODELS

Name of the Speaker : Dr. Abhinav Dhall
Institute : Indian Institute of Technology Ropar
Date : November 23, 2020

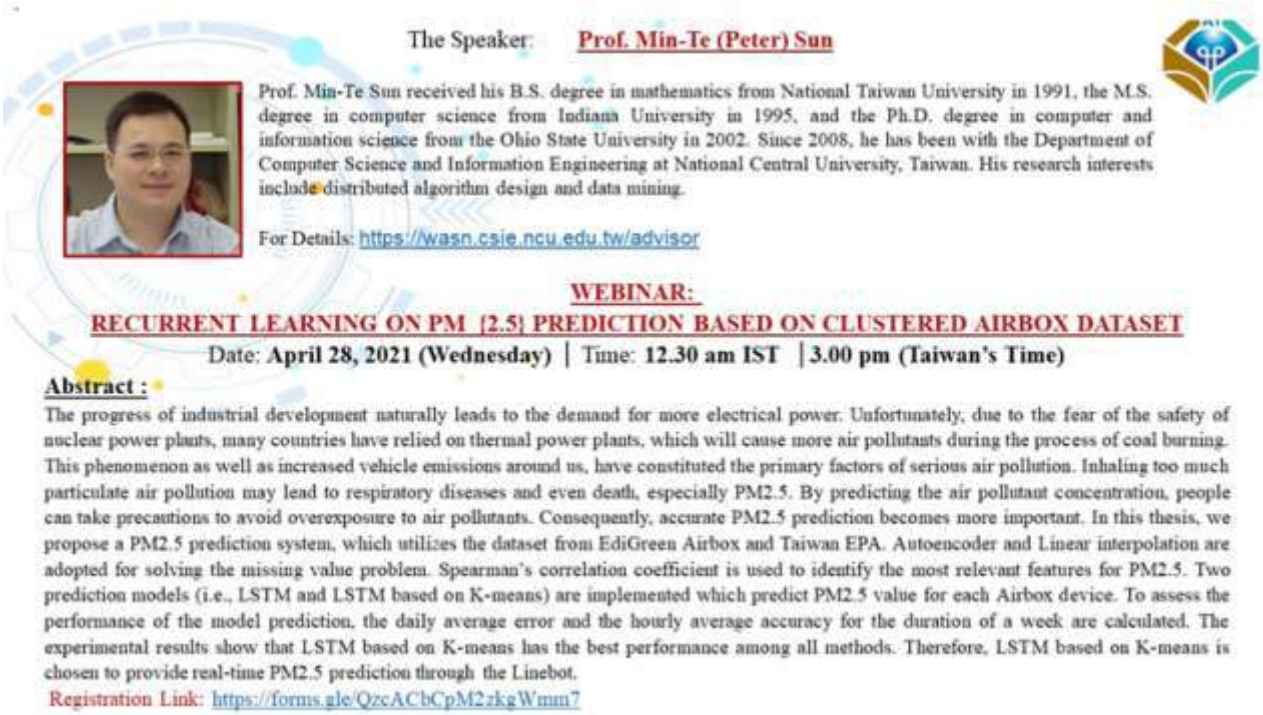


VII. Webinar: EXPECTATION MAXIMIZATION ALGORITHM

Name of the Speaker : Dr. Arun Kumar
Institute : Indian Institute of Technology Ropar
Date : January 30, 2021

VIII. Webinar : RECURRENT LEARNING ON PM (2.5) PREDICTION BASED ON CLUSTERED AIRBOX DATASET

Name of the Speaker : Dr. Min- Te Sun
Institute : Indian Institute of Technology Ropar
Date : April 28, 2021



The Speaker: **Prof. Min-Te (Peter) Sun**

Prof. Min-Te Sun received his B.S. degree in mathematics from National Taiwan University in 1991, the M.S. degree in computer science from Indiana University in 1995, and the Ph.D. degree in computer and information science from the Ohio State University in 2002. Since 2008, he has been with the Department of Computer Science and Information Engineering at National Central University, Taiwan. His research interests include distributed algorithm design and data mining.

For Details: https://wasn.csie.ncu.edu.tw/advisor

WEBINAR:

RECURRENT LEARNING ON PM {2.5} PREDICTION BASED ON CLUSTERED AIRBOX DATASET

Date: **April 28, 2021 (Wednesday)** | Time: **12.30 am IST** | **3.00 pm (Taiwan's Time)**

Abstract :

The progress of industrial development naturally leads to the demand for more electrical power. Unfortunately, due to the fear of the safety of nuclear power plants, many countries have relied on thermal power plants, which will cause more air pollutants during the process of coal burning. This phenomenon as well as increased vehicle emissions around us, have constituted the primary factors of serious air pollution. Inhaling too much particulate air pollution may lead to respiratory diseases and even death, especially PM2.5. By predicting the air pollutant concentration, people can take precautions to avoid overexposure to air pollutants. Consequently, accurate PM2.5 prediction becomes more important. In this thesis, we propose a PM2.5 prediction system, which utilizes the dataset from EdiGreen Airbox and Taiwan EPA. Autoencoder and Linear interpolation are adopted for solving the missing value problem. Spearman's correlation coefficient is used to identify the most relevant features for PM2.5. Two prediction models (i.e., LSTM and LSTM based on K-means) are implemented which predict PM2.5 value for each Airbox device. To assess the performance of the model prediction, the daily average error and the hourly average accuracy for the duration of a week are calculated. The experimental results show that LSTM based on K-means has the best performance among all methods. Therefore, LSTM based on K-means is chosen to provide real-time PM2.5 prediction through the Linebot.

Registration Link: https://forms.gle/QzcACbCpM2zkgWmm7

HARVARD-US INDIA INITIATIVE CONFERENCE

A team of 4 student attended the conference in January 2020 with their Project of AiBin-Waste Segregation using power of AI and Computer vision in Harvard College US-India Initiative conference 2020. The team reached in top 10 out of 400 teams.

Based on the selected project Mr. Ashwin Goyal B.Tech student of Mechanical Engineering of IIT Ropar selected for Harvard Project for Asian and International Relations to be held virtually on January 15-18, 2021. It is a student-run organization that aims to create dialogue between Indian and American youth to address some of India's most pressing social, economic, and environmental issues today. The Centre provided financial support to Mr. Ashwin Goyal.

Team Details

1. Ashwin Goyal- 2018MEB1214
2. Paras Goyal - 2018CSB1111
3. Kartik Arjaria- 2018MEB1234
4. Yogesh Ramchandani- 2018CEB1037

PARTICIPATION

Taiwan-India Joint Research Center on Artificial Intelligence and USR Bamboo and Bamboo Charcoal Innovation of National Chung Cheng University from Taiwan and South Asian Bamboo Foundation from India cooperated to keep Bamboo and Bamboo Charcoal Innovation and reach UN, Sustainable Development Goals (SDGs).

Webinar Topics: Bamboo: a potential resource for the uplifting rural economy in post-COVID pandemic situation; in NE India.
Date: July 7, 2020
No. of participants through ITJRC: 47

POST GRADUATE PROGRAM IN ARTIFICIAL INTELLIGENCE AND DEEP LEARNING

IIT-Ropar and TSW launched a PG Programme in Artificial Intelligence on May 21, 2020

IIT-Ropar, one of the eight new IITs established by the Ministry of Human Resource Development (MHRD), Government of India, and TSW, the executive education division of Times Professional Learning (a part of The Times of India Group), have launched a **Post Graduate Certificate Programme in Artificial Intelligence & Deep Learning.** The programme is coordinated by The Indo-Taiwan Joint Research Centre (ITJRC) on Artificial Intelligence (AI) and Machine Learning (ML), at IIT-Ropar.

The programme has an eligibility criterion of a minimum of 2 years of work experience in the IT industry. Though an engineering degree is a desirable prerequisite for this programme, one does not need a coding or mathematics background to be eligible for this programme. The selection into the programme is on the basis of an application and an interview.

The programme has duration of six months and classes held over weekends as live online instructor sessions, with IIT-Ropar faculty and notable industry experts. The programme has been designed with inputs from industry and strikes the right balance between rigor and effort, making this programme highly suitable for working professionals. The participants will get a joint certificate from TSW & IIT-Ropar, and also IIT-Ropar Executive Education Alumni status, upon course completion.

The programme comes with an exhaustive curriculum that includes modules on Emerging Technologies & AI, Data Science, Machine Learning, Programming with Tensorflow, Deep Learning & Neural Networks, Image Recognition, Speech Recognition, AI Applications, and a Capstone Project. Those aspiring to build a career in AI and Deep Learning (DL) can make a head-start with this programme.

Batch Started on: **September 26, 2020**

Batch completed on: April 25, 2021

No. of Enrollments in 1st batch: **21**

JOINT PHD PROGRAMME

ITJRC has proposed a joint PhD programme between IIT Ropar and CCU, Taiwan. The approvals for the commencement of the program have been taken and the programme is approved by the Board of Governors on September 2, 2020.

INTERNSHIPS OFFERED

a. By Taiwanese Universities

- **2021 MOST GASE TAIWAN Global Talent Internship Program**
- Selected for GASE : 03
- Nominated for GASE : 05
- Applied for GASE : 08

2. PROPOSALS SUBMITTED

a. GITA- Global Innovation & Technology Alliance

The Department of Science & Technology (DST) and the Ministry of Science & Technology (MOST) of Taiwan, sent a joint Call for Proposal 2019. The joint project proposals under the **INDIA-TAIWAN Programme of Cooperation in Science and Technology 2019** was submitted by April 30, 2020. Several interested faculty submitted the proposal.

b. Proposal for a scientific payload instrument for a lunar mission

The Indo- Taiwan Joint Research Centre, IIT Ropar in collaboration with the partner university CCU, Taiwan jointly called the interested faculty for the project of "Proposal for a scientific payload instrument for a lunar mission". The topic of the proposal is Miniaturized UV-C optical and biological detection equipment.

Background description/research purpose: This case is to solicit proposals for scientific payload instruments, and seek a potential R&D team for lunar scientific payload instruments; The recognized payload instrument will be mounted on a spacecraft orbiting the moon to conduct research related to lunar exploration. The details of the faculty applied for the call are as follows:

Sr. No.	Name	Affiliation/Job title	Expertise
1	Dr. Debangsu Roy	Assistant Professor, IIT Ropar	Nanoscale device, magnetic sensors, Lithography, thin film, electrical transport of the device, spintronics
2	Dr. Devarshi Das	Assistant Professor	Electronic system design, Integrated circuit design, high precision measurement and instrumentation.
3	Dr. Khushboo Rakha	Assistant Professor, IIT Ropar	Materials Engineering, Device Design
4	Dr. Neha Sardana	IIT Ropar / Assistant Professor	Plasmonics, Optical setups, Metamaterials

5	Dr. Rohit Sharma	Associate Professor, IIT Ropar	Electronic system design, Signal Integrity
6	Dr. Vishwajeet Mehandia	Assistant Professor, IIT Ropar	Biophysics, Complex Fluid Dynamics, Scientific Computating

3. ITJRC in the NEWS:

1. Artificial intelligence will make healthcare jobs more effective: Sarit Kumar Das, Director, IIT Ropar:
https://www.dqindia.com/artificial-intelligence-will-make-healthcare-jobs-effective-sarit-kumar-das-director-iit-ropar

2. Teaching-learning Pattern Has Been Undergoing Tectonic Shift In Light Of COVID-19 Crisis: Prof Sarit Kumar Das, IIT Ropar
http://bweducation.businessworld.in/article/Teaching-learning-Pattern-Has-Been-Undergoing-Tectonic-Shift-In-Light-Of-COVID-19-Crisis-Prof-Sarit-Kumar-Das-IIT-Ropar/19-06-2020-289005/

3. The impact of COVID-19 on AI adoption
https://www.peoplematters.in/blog/hr-technology/the-impact-of-covid-19-on-ai-adoption-26180

PUBLICATIONS @IIT ROPAR

DEPARTMENT OF CHEMICAL ENGINEERING

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5. R. Chhabra, "A researcher's how-to manual," Physics Today, vol. 74, no. 3, pp. 50–51, Mar. 2021, doi: 10.1063/pt.3.4702.
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9. M. B. Khan and C. Sasmal, "Elastic instabilities and bifurcations in flows of wormlike micellar solutions past single and two vertically aligned microcylinders: Effect of blockage and gap ratios," Physics of Fluids, vol. 33, no. 3, p. 033109, Mar. 2021, doi: 10.1063/5.0044318.
10. M. B. Khan and C. Sasmal, "Effect of chain scission on flow characteristics of wormlike micellar solutions past a confined microfluidic cylinder: a numerical analysis," Soft Matter, vol. 16, no. 22, pp. 5261–5272, 2020, doi: 10.1039/d0sm00407c.
11. M. B. Khan, C. Sasmal, and R. P. Chhabra, "Flow and heat transfer characteristics of a rotating cylinder in a FENE-P type viscoelastic fluid," Journal of Non-Newtonian Fluid Mechanics, vol. 282, p. 104333, Aug. 2020, doi: 10.1016/j.jnnfm.2020.104333.
12. C. Sarkar et al., "Navigating Copper-Atom-Pair Structural Effect inside a Porous Organic Polymer Cavity for Selective Hydrogenation of Biomass-Derived 5-Hydroxymethylfurfural," ACS Sustainable Chemistry & Engineering, vol. 9, no. 5, pp. 2136–2151, Jan. 2021, doi: 10.1021/acssuschemeng.0c07594.
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14. V. Vajihinejad, S. P. Gumfekar, D. V. Dixon, M. A. Silva, and J. B. P. Soares, "Enhanced dewatering of oil sands

tailings by a novel water-soluble cationic polymer," Separation and Purification Technology, vol. 260, p. 118183, Apr. 2021, doi: 10.1016/j.seppur.2020.118183.
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BOOK CHAPTERS:

1. Q. T. Trinh et al., "Upgrading of Bio-oil from Biomass Pyrolysis: Current Status and Future Development," Biorefinery of Alternative Resources: Targeting Green Fuels and Platform Chemicals, pp. 317–353, 2020, doi: 10.1007/978-981-15-1804-1_14.
2. Subhashini and T. Mondal, "Non-conventional Catalytic Materials for Refining and Petrochemicals," Catalysis for Clean Energy and Environmental Sustainability, pp. 377–399, 2021, doi: 10.1007/978-3-030-65021-6_11.

DEPARTMENT OF CHEMISTRY

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STUDENT AFFAIRS

STUDENT RESIDENCY STATUS

B.Tech	Numbers	Hostel
Undergraduate Boys		
First Year (2020)	277	Main Campus
Preparatory Course	38	Main Campus
Second Year (2019)	274	Main Campus
Third Year (2018)	246	Main Campus
Fourth Year (2017)	240	Main Campus
Undergraduate Girls		
First Year (2020)	73	Main Campus
Preparatory Course	17	Main Campus
Second Year (2019)	55	Main Campus
Third Year (2018)	44	Main Campus
Fourth Year (2017)	14	Main Campus
Undergraduate Back -Loggers		
2014	1	Main Campus
2015	2	Main Campus
2016	18	Main Campus
Research Scholars		
Boys	351	
Girls	200	
M. Tech / M.Sc / Ms		
Boys	375	
Girls	97	

Transit Campus Hostels (Mercury, Venus, Neptune & Jupiter)
Main Campus Hostels (Satluj, Beas, Chenab & Raavi)
Total Hostel Residents = 2322 (Boys = 1822, Girls = 500)

EVENTS UNDER BOHA

DIWALI CELEBRATION

Diwali was celebrated with great enthusiasm in the campus. Hostels and Messes were well decorated by the students' withfull precaution. Sky lanterns were lit by all students. Due to COVID19 social gathering was avoided and dance/singing competitions were not organized. Special dinner was prepared for students in the mess.

BOARD OF CULTURAL ACTIVITIES

GENERAL CHAMPIONSHIP CULTURAL LEAGUE

Due to the emergency situations IIT Ropar put on the online competitions of the Cultural League of General Championship'20.

OPEN MIC NIGHT

A platform where anyone can come up and show their talents and perform in front of an audience. Performances like Singing, Playing instruments, Dancing, Poetry & Shayari, etc. were performed.

ONLINE COMPETITIONS DURING DIWALI COMPETITION: (14-11-2020)

Alankar conducted an online music competition and Arturo conducted a Mobile Photography Competition on the theme of light.

REPUBLIC DAY CELEBRATION

Online as well as offline Cultural events were conducted on the occasion of Republic Day, celebrating the spirit of patriotism.

HINDUSTANI CLASSICAL MUSIC WORKSHOP

Alankar – The Music Club organized a five-day workshop on Hindustani Classical Vocals. The workshop was held entirely in virtual mode (Google Meet). The main aim of conducting the workshop was to give the beginners an insight to this genre-along with some professional guidance, by a renowned teacher. All the five sessions were taken by Mr Varun Mishra, a well-trained vocalist with an excellent background in classical music. The average attendance on these five days was 33. The teacher started with the very basics of swaras and in the later sessions we also covered concepts of taal, raga and bandish. The sessions were very interactive and all the queries were addressed satisfactorily. The participants were also given guidance on techniques to continue our musical journey in the future.

ACTING WORKSHOP

Dramatics Club conducted an online Acting Workshop by Mr. Narinder Bhutani.

The Instructor was one who prepared undekha's, the Dance Club under BOCA's street play "Men the Forgotten gender" for Inter IIT 2017 for which IIT Ropar won 3rd prize. During the workshop, the Instructor taught the participants about, Voice modulation, Tonality, Facial expressions, body language, and different rules of Stage play, Street play, mono acting. Approximately 40 to 50 students took part in this event. The workshop consisted of 5-6 theory classes and the classes took place only on Saturdays and Sundays.

COMPETITIONS CONDUCTED BY VARIOUS CLUBS OF BOCA

Arturo Club

Date	Event Name
12/11/20	Shoot at light
17/11/20	Screenshots
24/12/20	Mobile Photography(GC)
45/1/21	Republic Day Photography(GC)

Dance Club

Date	Event Name
1st Feb, 2021	Saroj 2.0
4th Feb, 2021	The triple plug

Dramatics Club

Date	Event Name
20th Jan, 2021	Standup comedy(In association with frontrow)
27Jan to 5th Feb, 2021	GC (Be poetic)
27Jan to 5th Feb, 2021	GC(Group video)

Music Club

Date	Event Name
15/11/20	Glissando - Diwali Music Competition
14/01/21 - 18/01/21	Hindustani Classical Vocals Workshop by
25/01/21 - 5/02/21	Pukaar - Indian Solo Singing (GC)
25/01/21 - 5/02/21	Crescendo - Western Solo Singing (GC)
25/01/21 - 5/02/21	Synergic Notes - Collab Competition (GC)
29/03/21	Vistoso - Music Competition on the eve of Holi

Fine Arts Club

Event Name
Sketch It
Color-o-mania

BOARD OF SCIENCE & TECHNOLOGY

Courses on Google Classroom

CIM club under BOST conducted a course on ANSYS (a simulation software) through Google classroom. Certificates were given to the students who completed more than 80% of the assignments. The event covered some 'complicated stuff' through a workshop type approach which would be of great use and would set people apart. It was a good and learning experience in this hard time of Covid-19.

Hackathon in the General Championship

BOST conducted a Hackathon in the General Championship to showcase the students their technical skills. Following were the problem statements of the hackathon.

- **Problem Statement 1:** The students were asked to propose some technology based solutions for the problem like maintaining social distancing, avoiding crowds at cafes, stationary shops etc. and to propose a solution that may be robotics, coding, ML, AI based.
- **Problem Statement 2:** The participant Students were asked to solve the problem that will be comforted after each class attended by the students. We asked the participants to propose some technology based solutions for the problems like maintaining social distancing, avoiding crowds, sanitizing chairs after use or any other problem that can be a big issue in department building.

Skills Required: Designing/Simulation. Coding, Programming, AI/ML

This hackathon was a great learning opportunity for the students involving various skills of different disciplines.

BOARD OF LITERARY ACTIVITIES (BOLA)

i) General Championship continued during COVID-19 period

The General championship continued on online mode during the COVID period. and BOLA organized the following events:

Quizzing events: Enigma Club organized quiz events & Meme Competition: A meme competition was organized

ii) Movie Making Club

Alpha productions, the movie making club, released two short films (Ephemeral and Peer Pressure) on the YouTube Channel of the Club.

OTHER ACTIVITIES

Sunny Oberoi Student Leadership Award 2020

Award equal to Rs. 50000/- along with a certificate will be given to the registered student(s) of IIT Ropar for their contributions towards the Social Service or helping physically disabled students. For the year 2020, the award was conferred jointly to the following students:

- ✓ Mr. Chentan Waghela, Entry No. 2016PHZ0009
- ✓ Mr. Ankit, Entry No. 2017CHB1037

Apart from above, appreciation certificate to following two students was also given:

- ✓ Mr. Chetan Kumar, Entry No. 2019MEB1254
- ✓ Ms. Achsah Marlene Aruva, Entry No. 2019MED1001

Webinar on Atal Tunnel:

A webinar on Atal Tunnel, Rohtang was conducted by the Border Road Organization on 11-01-2021. The event was conducted via online mode. Around 70 people from IIT Ropar registered for this event.

Formation of New Clubs:
Following two clubs are formed:

1. **Girl Up Club:** On lines of UN Foundation, a new club naming Girl Up Club was formed in the month of December, 2020. The vision of the club is to introduce novel ideas like feminism, inter sectionalism and women empowerment to the students to eliminate the gap and encourage more girls to speak up and hold positions of power.
2. **Electoral Club:** On direction of Government of India, a Electoral Club was formed to educate the student community for the power and use of their votes in Democracy. Various events and competitions were organized in the month of December, 2020.

Institute Student Mentorship Program: (November, 2020)

Following activities and events were organized during the online Institute Mentorship Program 2020-21 for interaction with freshers:

Speakers/ Talks

1. Mr. Deepak Kumar - Clinical Counsellor IIT Ropar
2. Ms. Bhawna Suri - Counseling Psychologist
3. Dr.Satyam Sharma - Assistant Professor, IIT Ropar
4. Mr. Yogesh Chabria - Founder of The Happionaire™ Way
5. Mr. Harrish Sairaman - Director & Transformational Specialist of Cognizant Transformation
6. Dr. Shirish Paripatyadar- Toastmaster speaker
7. Dr.Mukesh Saini- Assistant Professor, IIT Ropar
8. Dr.Neeraj Goel - Assistant Professor, IIT Ropar

About Events

1 Virtual Tour

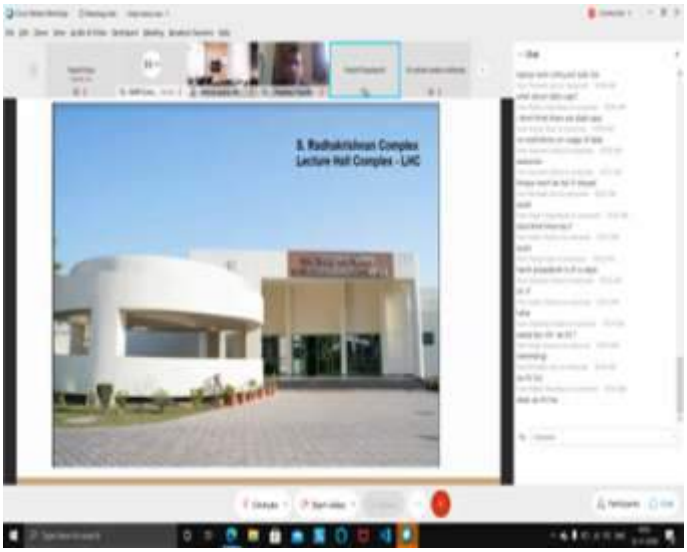
2 Address by Student Council and Club Representative

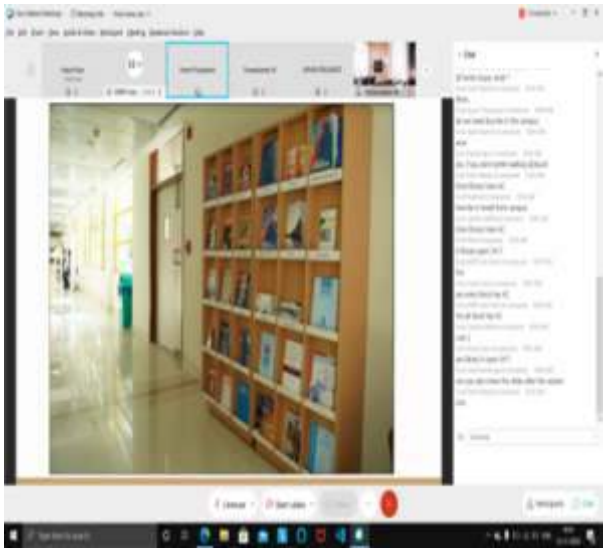
3 Guest Lectures

4 Rangoli Making Competitions

5 Club events

Virtual Tour during ISMP





National Constitution Day: (26 Nov., 2020)

Online screening of Preamble reading while Prof. Devinder Singh, Professor Punjab University Chandigarh delivered a talk on the Indian Constitution.

National Unity Day Celebration (31-10-2020):

NCC / NSS

- On 5th of April, 2020 all cadets installed Arogya setu app.
- On 22nd of April, 2020 all cadets started motivating & guiding their near & dear ones to install Arogya setu app.
- On 30th of April, 2020 The Diksha App, "Igot training" was done by students in which they got trained for Anti-covid measurements by going through different videos, messages, postures and preventives made by NCC cadets from across the nation. After this activity, cadets got digital certificates for the same.
- Our NCC cadets participated in International Yoga Day on 21st June,2020 from 0700 to 0800 hours. The cadets performed common yoga as taught on T.V/online resources from 17/06/2020 to 21/06/2020 and asked the cadets to encourage their family members, friends and neighbors to participate in Yoga from their respective places.
- During Covid paramedic in the month of April 2020, a task was given to students to send self-assessment video components in which they have to compile what they did about waking the people about covid preventions and to de-stress themselves.
- HIV Quiz was conducted by the Youth Services Department and Punjab State Aid Control Society on 30/07/2020 under Drug Abuse and Mission Fateh.

Student Council 2020-21 (Aug. 2020)

Elections for the Student Council 2020-21 were conducted successfully via online mode. Following Student Council was elected by the students:

Name	Position	Entry Number
Suvansh Bhargava	President, SC	2018CEB1032
Mohit Kasaniya	GS, BOHA	2018CEB1014
Parnavi Shrikhande	GS, BOAA	2018MED1007
Yogesh Ramchandani	GS, BOLA	2018CEB1037
Amit Kumar Chhipa	GS, BOSA	2018MED1002
Anand Kumar	GS, BOST	2018MEB1210

FACILITIES @IIT ROPAR

LIBRARY

1. INTRODUCTION

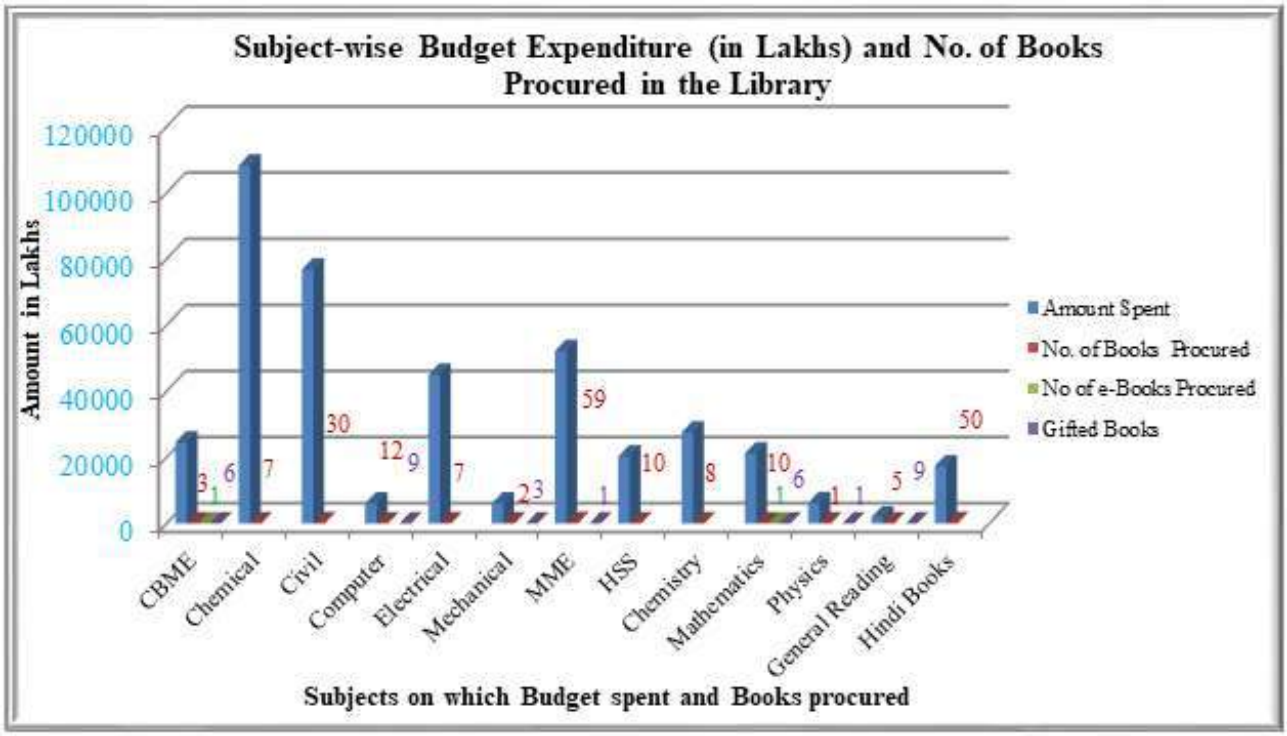
Library of IIT Ropar is an invaluable source of knowledge and place for learning and it is playing a pivotal role in support of various academic and research activities at the institute. The objective of the library is to provide users with the required information resources, learning spaces and support by offering latest services which are in line with teaching, learning and research activities. The main functions of the library include selecting, acquiring, processing, preserving and dissemination of print and electronic information resources. The services include providing access to quality print and electronic resources with appropriate delivery systems, tools and services in order to support the institute to achieve its vision and mission.

2. COLLECTION DEVELOPMENT

Collection building is one of the important functions of IIT Ropar library, which involves careful selection of standard learning resources required by the academic and research community at the institute.

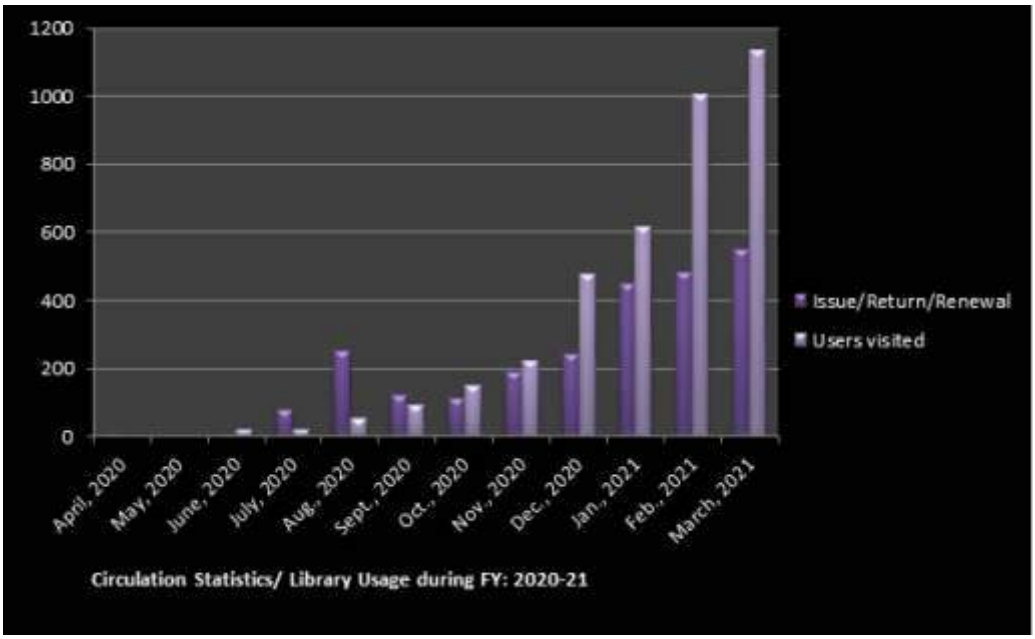
The Library has established collection development policy for acquiring latest books, journals, reports and other reference and information resources in science, engineering, technology, humanities and social sciences, as well as resources on general reading and same has been followed during the FY 2020-21. The Library maintains an impressive print collection of 22,454 documents that includes dictionaries, manuals, encyclopedias, research monographs, multi-volume reference sources and other books on thought process. Apart from this, the library collection also includes Theses, Dissertations, Annual Reports, Standards, CDs/DVDs etc. in the fields of science, engineering, technology, humanities and social sciences.

During the financial year 2020-21, the library added 241 new books to its collection, which include 204 print books and 02 e-books through purchase and 35 books received as gratis. A brief summary of the books procured in the 2020-21 financial year is shown in the below figure:



3. Circulation and Consultation Service

The library circulation operations have been automated using RFID based LIBSYS-7 software. During the academic year 2020-21 total 2,481 documents were issued/consulted at self-service Kiosk/staff station to all categories of users. 3,791 visits have been made by users to consult the library resources physically during the year. The graph below well depicts the circulation/consultation history of books/users during financial year 2020-21.



4. Subscription of Journals/ Magazines/Databases/ Standards/ Software Tools in Electronic & Print

Journals/Databases/Standards/Grammar and Anti-plagiarism tools play an important role in research work at the institute. IIT Ropar library facilitates online access to thousands of e-journals through participation in E-Shodh Sindu (eSS) consortium and the library also subscribes to several journals directly from the publishers as well as through the empanelled subscription agencies.

The library subscribes to the following electronic and print resources. The table also depicts the usage statistics (number of full-text downloads/views/reports usage etc.) of subscribed electronic resources:

4.1 Electronic Journals/Databases Subscription:

Sl. No.	List of Electronic Resources (E-Journals/Databases/Tools)	Usage Statistics (No. of full-text downloads/Views/Reports)
1	American Chemical Society (ACS) Journals	62008
2	American Institute of Physics (AIP) Journals	11798
3	American Mathematical Society (AMS) Journals	187
4	American Naturalist, The (The University of Chicago Press)	76
5	Annals of Mathematics (Princeton University)	74
6	Annual Reviews	912
7	American Physical Society (APS) Journals	9400
8	American Society of Civil Engineers (ASCE) Library	1450
9	American Society of Mechanical Engineers (ASME) Journals	2309

10	Association for Computing Machinery (ACM) Digital Library	2186
11	ASTM COMPASS (Standards & Digital Library)	650
12	Canadian Geotechnical Journal	36
13	Canadian Journal of Mathematics (Canadian Mathematical Society)	NA*
14	Cambridge University Press (CUP) selected Journals	2830
15	EBSCO host-Business Source Premier	2992
16	Elsevier ScienceDirect Journals	192695
17	Economic & Political Weekly	NA
18	Emerald CFTI Collection	4049
19	IEL Online (IEEE Journals)	66277
20	Institute of Physics Science (IoP) Journals	13910
21	JSTOR	5910
22	Optical Society of America (OSA) Journals	1631
23	Oxford University Press (OUP) Journals	1333
24	Proceedings of the National Academy of Sciences (PNAS)	2265
25	Project Muse	291
26	PublicationesMathematicae Debrecen (Inst. of Maths, Univ. of Debrecen)	NA*
27	Revue francaise de geotechnique from Geotechnic World	NA
28	Royal Society of Chemistry (RSC) Journals	58761
29	Royal Society Proceedings A: Mathematical, Physical and Engineering Sciences	396
30	Science Online	2140
31	SpringerNature Journals	59566
32	Taylor & Francis Journals	9834
33	Technopress selected Journals	131
34	Thieme Chemistry Package	725
35	Wiley selected Journals	27548
36	World Scientific selected journals	146
Databases/Software Tools		
1	Economic and Political Weekly Research Foundation (EPWRF)	809
2	Grammarly Tool	NA*
3	Institute for Studies in Industrial Development (ISID)	NA*
4	MathSciNet	3236
5	Prowess IQ	322
6	SciFinder Scholar	34470
7	Scopus	143210
8	States of India	1552
9	Turnitin - Antiplagarism Tool	4006
10	Web of Science	4103

* Not available

4.2 List of Print Journals/Magazines Subscribed

Sl. No.	Title
1.	American Scientist
2.	Current Science
3.	Dialog
4.	Modern Fiction Studies
5.	Nature
6.	National Geographic
7.	New Scientist
8.	New Yorker
9.	Reader's Digest
10.	Science
11.	Time

5. INVITED LECTURES & PULICATIONS

5.1 Invited Lectures

1. Dinesh, K.S., Delivered an expert lecture in the one-week workshop on "Writing Research Papers & Grant Proposals: Scientific, Technical, and Ethical Practices & Conduct" through online mode on August 28, 2020 on the topic "Research Support Tools, Copyright & Plagiarism in Academic & Research" through online mode organized by Research and Consultancy Section, NIT Uttarakhand.
2. Dinesh, K.S., Delivered an invited talk in the National Level webinar on "Introduction to Writing Research Papers" October 20, 2020, through online mode organized by Government Law College, Department of Collegiate Education and Technical Education, Government of Karnataka, Ramanagar.
3. Dinesh, K.S., Delivered an invited lecture in the One-day workshop on "Basics of Research Paper Writing and Publishing" November 11, 2020, through online mode organized by Dadabhai Naoroji Library and Information Centre, Gokhale Centenary College, Ankola, Karnataka under the CPE and IQAC Initiative.
4. Dinesh, K.S., Delivered the lectures in the following sessions as a resource person in the RUSA funded Refresher Course in Library and Information Science through online mode organized by the UGC-Human Resource Development Centre, University of Mysore, Mysore.

Sl. No.	Date	Time	Topic
1.	08.12.2020	10.00 am to 11.30 am	Academic Library as a Research Support System
2.	08.12.2020	11.45 am to 01.15 pm	Research Papers Writing and Publishing

5.2 Book Chapter

Tarvinder Singh Handa

1. Singh, T. & Singh, J. (2020). Attitude of Users towards Information Technology Application in University Libraries: A Comparative Study of Himachal Pradesh University, Shimla and Panjab University, Chandigarh. In P. Rai, A. Singh, Arjun, S. Prasad & V. Bansal (Eds.). Redesigning and reimagining libraries in new internet era, (pp.179-198). New Delhi: Vidit Publication House.
2. Handa, T.S. (2020). Innovative library services through aesthetic library design and space planning. In P. Venkata Rao & Preeti Sharda (Ed.). Digital convergence and innovation in library services in the present scenario, (pp. 171-185). Mohali: Enlightening Minds.

SUMMARY OF ACCOUNTS

RECEIPT AND PAYMENT ACCOUNT OF INDIAN INSTITUTE OF TECHNOLOGY ROPAR FOR THE FINANCIAL YEAR 2020-21 RUPNAGAR

RECEIPT	Amount (in Rs.) 31.03.2021	PAYMENT	Amount (in Rs.) 31.03.2021
I. Opening Balances		I. Expenses	
a) Cash Balance	0	a) Establishment Expenses	475813785
b) Bank Balance		b) Academic Expenses	276231805
i) In Current accounts	330084	c) Administrartive Expenses	170878071
ii) In deposit accounts (FDR)	0	d) Transportation Expenses	6605654
iii) Savings accounts (Institute)	436799043	e) Repair & Maintenance	74217610
iv) Savings accounts (R & D)	208844779	f) Prior Period Expenses	0
		g) Finance Cost	209778881
II. Grant-in-Aid		II. Payment against Earmarked/Endowmnet Funds	0
- on Revenue Account	1554523725		
- on Capital Account	112500000		
- Adjustment	0		
III. Academic Receipts	168276851	III. Payment against Sponsored Projects/Schemes	150069850
IV. Receipt against Earmarked/Endowmnet Funds		IV. Payment against Sponsored Fellowships and Scholarships	4743564
V. Receipt against Sponsored Projects/Schemes	223226724	V. Investment and Deposits made	
		(a) Out of Earmarked/Endowmnet Funds	0
VI. Receipt against Sponsored Fellowships and Scholarships	6252295	(a) Out of Own Funds (Investments - Others)	0
VII. Income on Investments from		VI. Term Deposits with Scheduled Banks	
a) Earmaked/Endowmnet Funds		FDR (Institute)	1240008175
b) Other Investments		FDR (R&D)	225946048
		VII. Expenditure on Fixed Assets and Capital Works in Progress	

VIII. Interest received on		a) Fixed Assets	177686036
a) FDR	39609340	b) Capital Work in Progress	41386592
b) Loans and Advances	7477		
c) Savings Bank Accounts	8143449	VIII. Other Payments including statutory payments	466065826
d) Saving & FDR (R&D)	5637864		
		IX. Refunds of Grants (Projects)	0
IX. Investments Encashed		X. Deposits and Advances	21867079
Endowment Fund	0		
		XI. Other Payments	0
X. Term Deposits with Scheduled Banks Encashed			
FDR (Institute)	887290202	XII. Closing Balances	
FDR (R&D)	14800000	a) Cash Balance	0
XI. Other Income (including Prior Period Income)	6828832	b) Bank Balance	
		i) In Current accounts	8719261
XII. Deposits and Advances	5529628	ii) In deposit accounts (FDR)	0
- HEFA TERM LOAN	99793395	iii) Savings accounts (Institute)	183799737
XIII. Miscellaneous Receipts including Statutory Receipts	31917756	iv) Savings accounts (R & D)	76493469
TOTAL	3810311443	TOTAL	3810311443

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INDIAN INSTITUTE OF TECHNOLOGY ROPAR