

ANNUAL REPORT 2022-23

भारतीय प्रौद्योगिकी संस्थान रोपड़ INDIAN INSTITUTE OF TECHNOLOGY ROPAR







DEPARTMENTS & CENTERS	_
DEPARTMENTS	: 11
CENTERS	: 03
STUDENTS ADMITTED IN AY 2022-23	
UG PROGRAMME	: 391
PG PROGRAMME	: 249
PHD	: 153
STUDENTS STRENGTH	
UG PROGRAMME	: 1441
PG PROGRAMME	: 422
PHD	: 778
NUMBER OF DEGREE AWARDEES	_
B. TECH.	: 292
M. TECH.	: 138
M. SC.	: 67
MS-R	: 02
PHD	: 64
FACULTY & STAFF STATISTICS	
FACULTY	: 169
NEW JOINING	: 12
STAFF	: 109
NEW JOINING	: 03
RESEARCH PRODUCTIVITY	
JOURNALS	: 564
CONFERENCES	: 61
BOOK CHAPTERS	: 55
BOOKS	: 38
ICSR & II	
NUMBER OF CONSULTANCY PROJECTS	: 151
OUTLAY	: 7.28 CRORE
NUMBER OF SPONSORED PROJECTS	: 67
OUTLAY	: 40.91 CRORE
GRANTS (IN CRORES)	
NTTM- MINISTRY OF TEXTILE	: 19.61
SERB-CRG	: 5.17
DST- TDT/AM	: 3.80
ISRO	: 0.85
DRDO CARS	: 0.80
OTHERS	: 10.68
TOTAL	: 40.91

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•	DEPARTMENT WISE TOTAL NUMBER OF FACULTY	79
•	GENDER WISE TOTAL NUMBER OF FACULTY	80
•	PHD OF FACULTY MEMBERS	80
•	NO. OF TEACHING STAFF	80
•		80
•	APPOINTED DURING 2022-23 (FACULTY & STAFF)	81
•	INTERNAL FACULTY APPOINTED IN HIGHER	0.1
	GRADES 2022-23	81
•	RESIGNED OR RELIEVED FACULTY DURING 2022-23	81
•	FACULTY ON EXTRAORDINARY LEAVE/DEPUTATION/	00
	SABBATICAL	82
•	FACULTY ON LIEN	82
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FROM THE DIRECTOR'S DESK

With the beginning of a New Year, the splendid 2022 and with a renewed commitment for excellence, IIT Ropar has grown steadily with its active participation in Research, Industrial Consultancy and Societal outreach activities maintaining its lead position as a top Engineering educational Institute in India.

IIT Ropar's footprints can be found on various National and International Rankings of 2022 and displays an ever-growing promise for improvement. IIT Ropar has been ranked 68th in Times Higher Education-ASIA University Ranking 2022, featuring amongst the first 100 institutions in Asia. Also in NIRF Ranking, IIT Ropar has been ranked 22nd in Engineering Category and 35th in the overall category. Our Institute has also secured the global rank of 81 with overall score of 48.8 in Times Higher Education Young University Rankings 2022. In Times Higher Education Emerging Economics University Rankings, we have secured the 86th Rank coming to the top 100. IIT Ropar has been placed on the top in a global scale in Graduate Quality Index as measured by Federal Reserve Bank of Minneapolis (Research Division) in their working paper on "The Global Distribution of college graduate quality." We once again made a mark by being ranked between the brackets of 351-400 in the World University Rankings 2022. Our students have won numerous accolades and awards; and I

congratulate the students for their active participation in various events in the field of sports or social welfare.

Besides such achievements, the Institute is facilitating Internship Programme to the students of other institutes through the Continuing Education and Outreach activities. 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.

The 2022 academic session of UG program students is special to IIT Ropar. 159 students (including all categories) below the rank of 2000 have joined IIT Ropar. We got a stupendous response to our new course B.Tech in "Engineering Physics," having got all our 25 seats filled this year.

The interdisciplinary approach is deeply rooted in our innovative academic curriculum. Students are offered a number of interesting minor programs and are provided the space to explore their major engineering disciplines. The placement results during placement session of 2022-23 at IIT Ropar have been very encouraging. A good and heartening response from the industry was seen for the campus recruitment process as a result of which 79% of our students were placed. 17 students from the departments of Mathematics, Chemistry, Electrical Engineering, Computer Science and Engineering, Biomedical Engineering and Metallurgical and Materials Engineering, have been selected for the Prime Minister Research Fellowship (PMRF). We are extremely proud to have our students making a mark in vigorous placements early on. The Career Development and Placement Cell at IIT Ropar continue to grow with effective strategies to attract leading companies on campus and provide one of the most promising placements and internships.

IIT Ropar surpassed a significant milestone of 20% female students. Our campus has a female student for every 5th student, thus affecting the sectors of technology and sciences. With a vision of becoming trendsetter among the technology Universities and Institutes, IIT Ropar is helping the society to solve problems ingeniously, resourcefully and creatively through technological solutions and innovations.

The Institute has received 403 projects so far with an outlay of Rs.167.02 crore. Thanks to the vibrant research culture at the institute driven by the young faculty members, there is a growing trend each passing year for availing external funding. IIT Ropar is intensively involved in the national initiatives such as IMPRINT, Uchhatr Aviskar Yojana (UAY), SPARC, VAJRA and STARS. The Institute has also seen a surge in consultancy projects which has gone up to Rs. 7.28 crores with 430 projects.

Students are making our campus vibrant with their cultural and aesthetics initiatives. In our beautiful scenic campus, we celebrated the most anticipated Techno-Cultural fest, Zeitgeist 23. The Technocultural extravaganza at IIT Ropar was witnessed on the first day of Zeitgeist. The participants celebrated the diversity and richness of Indian poetry in Kavi Sammelan. The famous singer and actress Ms. Sunanda Sharma from the music industry stolen the show and captivated everyone with her electrifying performance on the main stage. This year students organized Leadership summit, inviting the student council heads of other IITs to build character and hone leadership skills through event organization

and interpersonal relations.

With the young, energetic and growing strength of faculty members at IIT Ropar, we have set standards for quality research and technological achievements without losing any focus on ingrained human values, social responsibility, and concern for the environment. I hope that with this mission and vision, we shall grow to fulfill our dream of producing not only quality engineers but the leaders of tomorrow.

Experts from reputed institute and organization in India and abroad have delivered talks on wide- ranging topics and brought fresh insights into various fields of learning. IIT Ropar is working tirelessly on a wide array of activities to strengthen its service to the community through science and technology. It also aims to expand the visibility of research, community connections and collaboration with other establishments.

IIT Ropar is effectively collaborating with the Industry-Academia-Government. The Institute has entered into numerous MoUs and joint-degree programs with reputed universities. We have signed the MoU with the Indian Army, jointly through ARTRAC. to establish a "Centre of Excellence" for Studies and Applied Research in defense and security at IIT Ropar. Our institute has joined hands with NIT Uttarakhand, IIT Madras, IIT Mandi, French Institutions, the UK India Business Council, the University of Oulu, Finland, University of Uppsala and many more to strengthen entrepreneurship and startup ecosystem in our Institute and the country at large.

I would like to express my gratitude to our stakeholders for their continued trust and support which made this possible, as set in our Vision. I hope that you will continue to stand with us as we put all our effort into helping the community for becoming selfsufficient, integrated, and productive, while encouraging the principles of 'Atmanirbhar Bharat' and 'Vocal for Local.' I will now present an annual report of the Institute activities this year.





Motto: धियो यो न: 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





While driving through the iconic gates inscribed with symbols from the Harappan Civilization, spread over in 500 acres of land near the river Sutlej, feeling the cool breeze, one finds oneself in a different world altogether. Since its inception in 2008, the Institute has been growing steadily both in terms of its breadth and the student number. As of date, seven B.Tech., three M.Sc. and eleven M.Tech programmes are offered in 10 departments and Ph.D. programme is offered in 11 departments. Also, the student number on campus stands well over 2641, more significantly, with almost equal number of undergraduate and postgraduate students.

The Institute also maintains a healthy student-faculty ratio of about 14:1 to give progressive output in terms of Research and Innovation with infrastructure stability and an atmosphere of vibrancy in the campus. This robust environment has been yielding fantastic results in the span of a decade. The Times Higher Education Rankings and NIRF ranking 2022 is an example of making a reputable debut in the national and international rankings.

IIT Ropar has a thematic vision to align its R&D to impart a positive impact nationally and internationally by doing cutting edge research. This has been evidenced by the fact that IIT Ropar has been placed 22nd in Engineering and overall in 35th in NIRF India Rankings 2022. The Institute has ongoing academic and research collaborations with many national and international universities/institutes, in order to keep pace with the global up-to-date research. The Institute provides stable-reliable-unambiguous workplace, an ecosystem for innovation to flourish by leveraging-partnerships with stakeholders. The Institute produces and nurtures young research scholars in Science, Technology and Humanities. It has proved itself the best research destination for the most talented scholars and investors from the country and beyond. Nationally and internationally recognizable for innovative research, the Institute has been steadfast in developing and transferring knowledge in the field of engineering and sciences.

The Institute provides adequate funds to the departments and faculty members for the upgradation of laboratories and creation of research facilities. This has enabled our faculty to take up research projects in frontier and emerging areas of science and technology. The Institute has received 403 projects till March 2023 with an outlay of Rs.167.02 crore. IIT Ropar also saw a surge in consultancy projects which has gone up to Rs. 7.28 crores with 430 projects.

The Career Development & Placement cell is actively involved in organizing practical training for the undergraduate students and has been playing a catalytic role in finding placements for its final year students. A good and encouraging response from the industry was seen for the campus recruitment process as a result of which 79% of our students were placed most creditably.

Many initiatives were taken this year by the Institute to strengthen alumni relations. Webinar sessions with our alumni to discuss different career perspectives and opportunities for our graduating students are getting regularly organized. Our alumni strength has now expanded to 2535. The alumni meet is regularly organized to reconnect and celebrate their success and achievements. The Alumni association of IIT Ropar organized "Alumni Meet 2022" along with the Emerging Young Alumni Awards 2023 on 30th Dec 2022. More than 90 alumni joined the meet.

IIT Ropar has established collaborations with various universities through MoUs and jointdegree programs. A "Centre of Excellence" for Studies & Applied Research in defense and security is being set up in partnership with the Indian Army through ARTRAC. Partnerships with institutions like NIT Uttarakhand, IIT Madras, IIT Mandi, French Institutions, the UK India Business Council, and the University of Oulu, Finland etc aim to strengthen the entrepreneurship and startup ecosystem at IIT Ropar and in India.

In conclusion, it can be said that IIT Ropar is in the path of a steep growth for the years to come.









IIT Ropar has been ranked 22nd in the Engineering category and 35th in the overall category in the NIRF India Rankings, 2022, as repleased by the Union Education Minister Sh. Dharmendra Pradhan ji.. There has been an increase in the number of participating colleges in NIRF 2022. A total of 7254 Higher



Educational Institutes have participated this year while last year it was 6272. The rankings were announced in 11 categories - Overall, Universities, Engineering, Colleges, Management, Pharmacy, Medical, Architecture, and Law, Dental, Research.



IIT Ropar **ranked 68th** in **Asia University Rankings 2022**, grabbing once again a spot among the top 100 Institutions in Asia.



According to The **Times Higher Education Young University Rankings 2022**, IIT Ropar has secured the global **rank of 81** with overall score of 48.8.



IIT Ropar has been **ranked on top** in a global scale in **Graduate Quality Index** as measured by **Federal Reserve Bank of Minneapolis (Research Division)** in their working paper on **"The Global Distribution of college graduate quality"**. In this study, 3300 colleges from 66 countries were evaluated. The paper was authored by Paolo Martellini (University of Wisconsin-Madison), Todd Schoellman and Jason Sockin from University of Pennsylvania and Ministry of Education, Government of India.



IIT Ropar stood among the top **100 with 86th** rank in the Times Higher Education Emerging Economics University Rankings 2022.



IIT Ropar once again made a mark by being ranked between the brackets of **351-400** in the **World University Rankings 2022.**











1. AN ELECTRONIC MASSAGER FOR REDUCING THE RISK OF FAINTING

IIT Ropar researchers have developed an electronic massager for calf muscles that can reduce the risk of fainting among the blood donors during or after the blood donation.



2. ECO-FRIENDLY TECHNOLOGY TO SAVE WATER

IIT Ropar has developed this eco-friendly technology under start-up named NanoKriti pvt. limited which committed towards cleaning the environment and is expanding in developing new applications ranging from water treatment to health care.

To remedy the use of large quantity of water in textile sector, the IIT Ropar researcher Dr. Neelkanth Nirmalkar developed an innovative green technology - air nano-bubble that can reduce the water quantity. The technology can reduce the use of water up to 90 %. Roughly 200-250 L of water is required to process 1 kg of Cotton fabric. The laboratory reports suggest the air nano-bubble dispersed in water can reduce the water consumption, chemical dosage by 90-95% which ultimately saves 90% of the energy consumption as well.



A proud moment for us

3. START-UP OF UBREATHE

IIT Ropar start-up Ubreathe has been chosen as one of the top 3 companies working in the air quality sector through the ICAC – Indian Clean Air Challenge, designed by Ministry of Housing and Urban Affairs. Ubreathe is looking at semi-open infrastructures such as Metro-stations, to provide sustainable solutions for fighting air related issues in the country.

IIT Ropar develops way to see bacteria for long

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4. DEVELOPED A WAY TO SEE BACTERIA FOR LONG

More than 10% of patients having bacterial infections die in India every year. Scientists at IIT Ropar have developed a modified protein fragment that can boost the

detection of a specific bacterial species for two to three hours longer than the usual time in the infected area. It grabs the bacterial membrane tightly and helps protein fragments stay on the bacterial surface longer.

RopartIT develops mobile-based app foreplaga patients

5.

A MOBILE-BASED APP FOR EPILEPTO SYSTEMS

In order to provide a major relief to epilepsy patients, IIT Ropar has developed a mobile-based app, Epilepto Systems, through which an automatic call can be initiated just before a seizure. The app has been developed by Dr. Ashish Sahani, Assistant Professor, Department of Biomedical Engineering and his student Rahul Shukla. The team also comprises Krishnu R S and Hemant Kumar Chattar of IIT Ropar, Dr. Gagandeep Singh, Brinder Singh Paul, Ranjit Kaur and Arun Khokhar from Dayanand Medical College & Hospital, Ludhiana. The emergency call and messaging service informs about the patient's location to caretaker contacts with just a click on the alert button. It is important to note that epilesy is one of the most common neural disorder affecting nearly 50 million people across the globe.

6.

Neck sensor developed for better health of cattle

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NECK SENSOR FOR BETTER HEALTHCARE OF CATTLES

In association with a Pune based start-up Areete Business solutions, IIT Ropar has developed a neck sensor

with collar arrangement for cattle, providing timely alerts on various health and heat condition of the cattle. The 'cattle health and heat monitoring solution' measures various cattle parameters, including rumination, body temperature, activity level, heat cycle, lameness and GPS location.

The cattle collar has been tested on more than 100 cattle giving exceptional accuracy above 90% in various farms across Maharashtra.

The sensor in the collar sends all data to a cloud server and it is processed using Al-based analytics models with custom algorithms. Dr. Neeraj Goel, who headed the team for developing the software, shared that the sensor-based device helps in identifying the main challenges in cattle management for farmers. Along with detection, it will also alert and notify farmers to take necessary steps to upkeep their cattle.

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IIT-Ropar develops app for anganwari workers

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7. NANO ROUTE TO TREAT POLLUTED WATER

IIT Ropar researchers have developed a first-of-its-kind nano bubble (NB) generator that may prove helpful in treating the polluted water coming out of the industries or at sewerage treatment plants (STP), and it would also save 50% running cost in comparison to the technology presently being used at STPs.

Besides wastewater treatment, the NB generator can prove beneficial in farming and fishery. It can be used in drip irrigation and agriculture, aquaculture and fishery, pond and river restoration, gas and oil sectors, sterilization, medical sectors, surfactant free cleaning and chemical-free disinfection.

8. AN APP FOR ANGANWARI WORKERS

IIT Ropar has developed a first-of-its kind user-friendly app for recording and maintaining digital records of the nutritional status of children and women. It will help in improving health and nutrition status of children belonging to poor families, who attend governmentrun crèches known as anganwaris in the country.

Dr. Puneet Goyal, Associate Professor, Department of Computer Science and Engineering, coordinator of the app development project team in collaboration with the district administration has developed the app named – 'SAMPAN' – which is a software for real-time

monitoring of nutrition services at its anganwari centres (AWCs) and a reporting system to provide public access to data collected at the centres, in a bid to combat malnutrition."

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	Congratulations to the Team! In: Nalest Singl, Prof. Respect Singl, Prof. Conference Result and Dr. Profit Sarka Net the Grant of US PATENT as the Investion of
	"Scrap Recycling-based Addition Manufacturing Technology"



9. GRANT OF US PATENT

The team of researchers, Prof. Harpreet Singh, Dr. Prabir Sarkar, Dr. Malkeet Singh and Prof. Christopher Berndt got Grant of US PATENT on the invention of "Scrap Recycling-Based Additive Manufacturing Technology." The developed technology and process utilize the waste/scarp particles generated during machine processing to create useful products. The invention will play critical role in achieving Sustainable Development Goals (SDG).

10. IIT ROPAR RESEARCHERS PREDICTED SURFACE DISPLACEMENT

IIT Ropar researchers predicted surface displacement at Joshimath in 2021. A team of researchers led by Dr. Reet Kamal Tiwari, Assistant Professor in the Department of Civil Engineering had carried out the glacial displacement mapping for the 2021 Joshimath flood scenario as early as March 2021.During the study, Dr. Tiwari and his then PhD student Dr. Akshar Tripathi, who is now working as Assistant Professor in the Department of Civil & Environmental Engineering at IIT Patna, had predicted a large-scale surface displacement to occur in a span of two years for Joshimath town. They had used Persistent Scatterer SAR Interferometry (PSInSAR) technique using Sentinel-1 satellite data for the study. The predictions ranged between 7.5 cm to 10 cm displacement for buildings in Joshimath city, enough to cause large scale cracks in buildings, a scenario which has now become clearly evident in the last few days. The study was presented in a conference held in Lucknow on April 16, 2021, for which Tripathi was awarded the 'Best Paper Award'.



INFRASTRUCTURE DEVELOPMENT





The construction of Phase 1 comprising 1A, 1B and 1C is approaching to an end. Civil works of 43 out of 44 buildings of Phase 1 have been completed and construction of the last building i.e. Academic building (Super Academic Block) is going on at a fast pace.

In the year 2022-23, the buildings that have been completed are Residences; Type 3 (24 flats), Type 5 (24 flats) & Type 6 (24 flats), Boys & Girls hostel (520 capacity) and Electric Sub station 5, 6 and 7.

The final building of Phase 1C (Super Academic Block) in which seven departments are proposed viz Civil Engineering, Physics, Chemical Engineering, Mathematics Department, Humanities and Social Sciences, Biomedical Engineering and Metallurgy and Materials Engineering.

The structure of the building is completed and finishing works such as partitioning, flooring and services are under way. Various architectural elements like central water body and tensile fabric in central courtyard, façade blocks and super roof works have been started and are taking shape.

The building is having three independent blocks connected via sky walks at various levels. So, the process of taking over of the building block wise is being strategies.

Rest of the buildings of the Campus of Phase 1A and 1B are being taken over and are utilised by the Institute.

Buildings inauguration events that held in year 2022-23 are Library Building, Data Centre, Boys and Girls Hostel and Kendriya Vidyalaya. The overall infrastructure development of the Campus is 98.66%. IIT Ropar has a holistic infrastructure development approach. The planning and designing of the Campus implemented green initiatives such as reuse of treated water for horticulture and flushing system, vermi-composting, pedestrian friendly movement, restoring existing trees, etc.

IIT ROPAR-PHASE-1A



IIT ROPAR LOGO



IIT Ropar Logo









IIT Ropar Entrance Gate Complex





Administrative Building (G+3)



Science & Engineering



Department of Electrical Engineering





Department of Chemistry









Boys Hostel (690 Capacity)



Girls Hostel (100 Capacity)



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

IIT ROPAR PHASE- 1B Gate Complex





Sports Complex







Football Ground





Hockey Ground



Girls Hostel (160 Capicity) (G+3)











Central Research Facility Building



Dining Hall Complex





T-5 RESIDENCES



T-5 (Block 1 & 2) Residences



T-5 (Block 3 & 4) Residences



T-5 (Block 5 & 6) Residences



T-5 (Block 7 & 8) Residences





IIT ROPAR PHASE-1C



Boys Hostel - 520 Capicity









T5- Residences (G+3) (24 Units), (03 Blocks)









• ACADEMICS





IIT Ropar is rapidly progressing in the field of Science and Technology. Since its inception in 2008, the Institute has pursued distinction with committed determination. IIT Ropar has seven Engineering disciplines: Biomedical Engineering, Chemical Engineering, Computer Science and Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering, Metallurgical & Materials Engineering; four Science disciplines: Chemistry, Mathematics, Physics and Humanities and Social Sciences. As of April 2023, IIT Ropar has 1416 students enrolled in its B.Tech. programs, 293 M.Tech. students, 25 students in Dual Degree, 129 M.Sc. students, and 778 Ph.D students. 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.

Sr. No.	Department	B.Tech.	M.Tech.	M.Sc.	Ph.D
1	Artificial intelligence	0	16	0	0
2	Biomedical Engineering	0	12	0	8
3	Chemical Engineering	25	7	0	10
4	Chemistry	0	0	23	19
5	Civil Engineering	34	30	0	12
6	Computer Science & Engineering	84	21	0	17
7	Electrical Engineering	83	38	0	20
8	Humanities & Social Studies	0	0	0	8
9	Engineering Physics	22		0	0
10	Mathematics	31	0	22	11
11	Mechanical Engineering	84	59	0	25
12	Metallurgical and Materials Engineering	28	0	0	7
13	Physics	0	0	21	16
	Total	391	183	66	153

THE NUMBER OF STUDENTS AND SCHOLARS ADMITTED DURING YEAR 2022-23

NUMBERS OF STUDENTS (CATEGORY WISE)

Sr. No.	Programme	Ews	Gen	OBC	SC	ST	Intern- ational	PD	Male	Female
1.	B.Tech.	38	152	104	59	33	0	5	312	79
2.	Dual Degree	-	-	-	-	-	-	-	-	-
3.	M.Tech.	21	60	51	28	12	11	0	160	23
4.	M.Sc.	7	28	17	10	4	0	0	38	28
5.	MS (R)									
6.	Ph.D	11	81	33	18	2	8	0	104	49

THE NUMBER OF STUDENTS AND SCHOLARS ON ROLL IN THE YEAR 2022-23

Sr. No.	Department	B.Tech.	Dual Degree	M.Tech.	M.Sc.	Ph.D
1.	Artificial Intelligence	0		27	0	0
2	Biomedical Engineering	0		24	0	46
3.	Chemical Engineering	88		15	0	47
4.	Chemistry	0		0	44	90
5	Civil Engineering	128		38	0	62
6.	Computer Science & Engineering	347	39		0	83
7.	Electrical Engineering	328		68	0	107
8.	Engineering Physics	22			0	0
9	Humanities & Social Studies	0		0	0	53
10	Mathematics	121		0	44	53
11.	Mechanical Engineering	291	25	25 82		127
12	Metallurgical and Materials Engineering	91		0	0	36
13	Physics	0		0	41	74
	Total	1416	25	293	129	778

Sr. No.	Department	EWS	Internat ional	Gen	OBC	SC	ST	PD	Male	Female
1.	B.Tech.	120	0	565	382	220	113	16	1143	273
2.	Dual Degree	1	0	9	7	5	2	1	21	4
3.	M.Tech.	34	14	101	78	47	19	0	250	43
4.	M.Sc.	15	1	55	35	15	8	0	79	50
5.	Ph.D	29	8	525	152	57	7	0	528	250

NO. OF DEGREES AWARDED

Sr. No	Department	B.Tech.	Dual Degree	M.Tech.	M.Sc.	MS(R)	Ph.D
1.	Artificial intelligence			14	0		0
2.	Biomedical Engineering			9	0		3
3.	Chemical Engineering	22		14	0		0
4.	Chemistry			0	21		9
5.	Civil Engineering	30		15	0		1
6.	Computer Science & Engineering	72		17	0	1	5
7.	Electrical Engineering	72		31	0	1	11
8.	Humanities & Social Studies			0	0		3
9.	Mathematics			0	21		6
10.	Mechanical Engineering	73	11	38	0		16
11.	Metallurgical and Materials Engineering	12		0	0		0
12.	Physics			0	25		10
	Total	281	11	138	67	2	64

Scholarships

B. Tech.

Merit cum Means Scholarship

The merit-cum-means scholarship is given to deserving undergraduate students on the basis of All India Rank in JEE Advanced, who have parental annual Income less than or equal to 4.5 lacs. These are permissible to about 25% of the students. The recipient of the Merit cum Means scholarship is exempted from payment of tuition fees and is allotted Rs. 1000/- per month as pocket allowance.

Institute Free Studentship

The institute offers free studentship to 10% students on the basis of means only. These students are exempted from paying tuition fees. The parental annual income should be less than or equal to Rs. 4.5 lacs to qualify.

Institute Merit Prize and Certificate

Each year, the Institute offers merit prizes and certificates to top 7% of the students from the B.Tech. programme. A total Amount of Rs.2500/- and a merit certificate is given to the eligible students.

Free Messing

The Institute offers the award of free messing to SC/ST students whose parental annual income is less than or equal to 4.5 lacs.

Sr. No.	Scholarship name	Number of Student	Amount of Scholarship
1	Merit-cum-means Scholarship*	300	5910427
2	Free Studentship Scholarship (10%)	6	200004
3	Merit Prize & Certificate (top 7% students)*	69	172500
4	Free Messing Scholarship*	50	600000
	Total		

	Scholarship name	Number of Student	Amount of Scholarship
	Scholarship given 2nd	semester of AY 2022	2-23
S. No.	Scholarship name	Number of Student	Amount of Scholar ship
1	Merit-cum-means Scholarship*	302	6052609
2	Free Studentship Scholarship (10%)	8	266672
3	Merit Prize & Certificate (top 7% students)*	70	175000
4	Free Messing Scholarship *	50	600000
	Total		

M.Sc.

Merit cum Means Scholarship

The merit-cum-means scholarship is given to deserving M.Sc. students on the basis of JAM rank and having parental annual Income less than or equal to 4.5 lacs. These are permissible to about 25% of the students. The recipient of the Merit cum Means scholarship is exempted from payment of tuition fees and Rs. 1000/- per month is awarded as pocket allowance.

	1 st semester of AY 2022-23					
S. No.	Scholarship name	Number of Student	Amount of Scholarship			
1	Merit-cum-Means Scholarship	31	2,54,380			

	2 nd semester of AY 2022-23				
S. No.	Scholarship name	Number of Student	Amount of Scholarship		
1	Merit-cum-Means Scholarship	28	2,34,624		

OUTREACH PROGRAMME

The Office of Continuing Education and Outreach Activities (CEOA), IIT Ropar conducts world-class certificate programs for participants from Industry, Government Organizations, and Academia. The certificate programs offered include executive education programs for career advancement of working professionals and executives, programs for skill enhancement of manpower in industry with latest know-hows and developments in the subject, and functional development programs (FDPs) for government organizations and academic institutions. The certificate programs focus on thrust areas of regional, national, and global importance, and provide a platform for interaction and collaborations between faculty members and industry personnel. The CEOA office also organizes programs and events related to the social and educational outreach activities of the Institute.

	Internship Report 2022-23				
	C	enter of Bio-Medical Er	ngineering		
Sr. No	Name of the Supervisor/ Faculty of IIT Ropar under whom the internship has been done.	Name of the Student	Name & Address of the University/ Institute from where the intern belongs to:		
1	Dr. Yashveer Singh	Ms. Aditi Singh	Shri Guru Gobind Singh College, Chandigarh		
2	Dr. Bodhisatwa Das	Ms. Pratikhya Acharya	Indian Institute of Science Education and Research, Berhampur		
3	Dr. Bodhisatwa Das	Ms. Subhalakshmi Deb	Calcutta University		
4	Prof. Javed N Agrewala	Ms. Bhoomika Sangwan	University Institute of Engineering and Technology, MDU, Rohtak		

5	Dr. Rajesh Kumar	Ms. Garima Singhal	Banasthali Vidyapith, Rajasthan
6	Dr. Srivatsava Naidu	Ms. Iswareya Lakshimi	The American College, Thamukkam, Goripalayam, Madurai, Tamil Nadu
	Depar	tment of Chemical Eng	ineering
7	Dr. Arghya Banerjee	Ms. Arka Ghosh	National Institute of Technology, Durgapur
8	Dr. Asad H. Sahir	Ms. Hafsa Haq	Aligarh Muslim University, Aligarh
9	Dr. Asad H.Sahir	Ms. Ishika Singh	National Institute of Technology, Hamirpur
10	Dr. Asad H. Sahir, Ms. Sukriti Sharma	Mr. Deepak Kumar	National Institute of Technology, Hamirpur
11	Dr. Asad H. Sahir	Mr. Jameel P Jamhar	National Institute of Technology, Agartala, Tripura
12	Dr. Asad H. Sahir	Ms. Manya Shrila	Delhi Technological University
13	Dr. Tarak Mondal	Mr. Siddharth Mohanty	National Institute of Technology, Rourkela (NIT Rourkela)
		Department of Chemis	try
14	Dr. Yashveer Singh	Ms. Nidhi Yadav	Sadanlal Savaldas Khanna Girls Degree College, Allahabad.
	Dep	partment of Civil Engine	eering
15	Dr. Putul Haldar	Ms. Shweta Mishra	Parul University, Gujarat
16	Dr. Putul Haldar	Mr. SK Wasim Ahmed	Jadavpur University, West Bengal
17	Dr. Indramani Dhada	Ms. Anushi Narula	National Institute of Technology Kurukshetra, Haryana
18	Dr. Indramani Dhada	Ms. Vandana Yadav	National Institute of Foundary and Forge Technology, Jharkhand
19	Dr. Putul Haldar	Mr. Gourab Saha	Swami Vivekananda Institute of Science & Technology, West Bengal
20	Dr. Ratan Sarmah	Ms. Trinayanee Kalita	Assam Engineering College, Assam
	Department	of Computer Science a	nd Engineering
21	Dr. Sudarshan Iyengar	Mr. Amit Charan	Indian Institute of Technology Madras, Chennai
22	Dr. Sudarshan Iyengar	Mr. Atharva Sunil Dhamankar	Indian Institute of Technology Madras, Chennai
23	Dr. Sudarshan Iyengar	Mr. Nitin Kushwaha	Indian Institute of Technology Madras, Chennai

24	Dr. Sudarshan Iyengar	Mr. Rohit Singh	Indian Institute of Technology Madras, Chennai
25	Dr. Sudarshan Iyengar	Mr. Aashik Arun Bobade	Indian Institute of Technology Madras, Chennai
26	Dr. Sudarshan Iyengar	Mr. Harshal Pandharinath Bhangale	Indian Institute of Technology Madras, Chennai
27	Dr. Sudarshan Iyengar	Ms. Anushka Singh	Indian Institute of Technology Madras, Chennai
28	Dr. Shashi Shekhar Jha	Mr. Subham Subhasis Sahoo	Indian Institute of Technology, Ropar
29	Dr. Sujata Pal	Mr. Atharva Nikam	R.H. Sapat College of Engineering, Nashik
30	Dr. Shweta Jain	Mr. Debarchan Basu	Indian Institute of Science, C.V. Raman Road, Mathikere, Bangalore
31	Dr. Shweta Jain	Ms. Gunika	Dr B R Ambedkar National Institute of Technology, Jalandhar
32	Dr. Puneet Goyal	Mr. Rohan Nolan Lasrado	Vellore Institute of Technology, Vellore
33	Dr. Puneet Goyal	Mr. Manish Kumar Pandey	St. Andrews Institute of Technology, Gurgaon
	Depar	tment of Electrical Eng	ineering
34	Dr. Devarshi Das	Mr. Pamidi Mohammad Sohail	Rajiv Gandhi University of Knowledge and Technologies, Telangana
35	Dr. Ashwani Sharma	Mr. Neel Kamal Gupta	Panjab University, Chandigarh
36	Dr. Mahendra Sakare	Mr. Parthasarathy Seshadri	Thiagarajar College of Engineering, Thiruparamkundram, Madurai
37	Dr. Pardeep Duhan	Mr. Sourabh Kumar Singh	National Institute of Technology, Durgapur
38	Dr. A. V. Ravi Teja	Mr. Vaibhav Sanjay Andhale	Sanjivani College of Engineering, Kopargaon, Ahmednagar, Maharashtra.
39	Dr. Saifullah Payami	Mr. Mohd Ali Shamsi	Zakir Husain College of Engineering and Technology, AMU, Aligarh
	Departmen	t of Humanities and So	cial Sciences
40	Dr. Bhavesh Garg	Mr. Abhiram Lokanathan	Shri Ram College of Commerce, University of Delhi
41	Dr. Bhavesh Garg	Mr. Rajarshi Bhattacharjee	Indian Institute of Science Education and Research, Bhopal

Department of Mathematics				
42	Dr. Bidhan Chandra Sardar	Mr. Abhinav Kumar	Kalinga Institute of Industrial Technology, Odisha, Patia, Bhubaneswar	
43	Dr. Tapas Chatterjee	Mr. Agniva Banerjee	Ramakrishna Mission Vivekananda Centenary College, Rahara, Kolkata	
44	Dr. Bidhan Chandra Sardar	Mr. Bapan Sahoo	Indian Institute of Technology, Guwahati, Assam	
45	Dr. S. C. Martha	Mr. Chandan Kumar Yadav	Indian Institute of Technology, Ropar	
46	Dr. Arti Pandey	Ms. M Sai Tanusha	Birla Institute of Technology, Mesra	
47	Dr. Bidhan Chandra Sardar	Ms. Madhumita Hembram	National Institute of Technology Rourkela,Sundargarh, Odisha	
48	Dr. Tapas Chatterjee	Ms. Pooja Teotia	Sant Longowal Institute of Engineering And Technology, Sangrur	
49	Dr. Arun Kumar	Ms. Priti Ranjeet Chaudhary	Savitribai Phule Pune University, Ganeshkhind, Distt- Pune, Maharashtra	
50	Dr. Bidhan Chandra Sardar	Mr. Sandhya verma	Pt. Ravishankar Shukla University, Raipur	
51	Dr. Kaushik Mondal	Mr. Shashwat Sourav	Indian Institute of Science Education and Research , Bhopal	
52	Dr. Tapas Chatterjee	Mr. Shreepad Agrawal	Indian Institute of Science Education and Research, Mohali	
53	Dr. S. C. Martha	Mr. Subham Patel	National Institute of Technology, Rourkela, Odisha	
54	Dr. Tapas Chatterjee	Mr. Sutirtha Datta	IISER Pune, Homi Bhaba Road, Pashan, Pune	
	Depart	ment of Mechanical En	gineering	
55	Dr. Ravi Kant	Mr. Rupak Anand	Sant Longowal Institute of Engineering & Technology (SLIET), Longowal, Punjab	
56	Dr. Chandrakant K Nirala	Mr. Arpit Jain	The LNM Institute of Information Technology, Jaipur, Rajsthan	
57	Dr. Chandrakant K Nirala	Mr. Karri Sai Ramakrishna	Indian Institute of Technology, Bhubaneswar	
58	Dr. Ravi Kant	Mr. Arun Sharma	National Institute of Technology, Hamirpur	

	Department of Metallurgical and Materials Engineering					
59	Dr. Neha Sardana	Mr. Uday Satya Prakash	National Institute of Advanced Manufacturing Technology, Ranchi			
60	Dr. Neha Sardana	Ms. Urbee Roy	Jadavpur University, Jadavpur, Kolkata, West Bengal			
61	Dr. Pratik Kumar Ray	Mr. Tirtharaj Paul	National Institute of Technology, Durgapur			
62	Dr. Pratik Kumar Ray	Mr. Nithin S	National Institute of Technology, Karnataka Surathkal, Mangalore			
		Department of Physic	S			
63	Dr. Rajesh V Nair	Ms. Anshika Sharma	Kumaun University, Nainital			
64	Dr. Vishwa Pal	Mr. Diptayan Dasgupta	University of Calcutta, Kolkata, West Bengal			
65	Dr. Rakesh Kumar	Ms. Ankita Gupta	Indian Institute of Technology, BHU (Varanasi)			

	J&K INTERNSHIP 2022-23				
Department of Chemical Engineering					
1	Dr. Asad H. Sahir	Mr. Sidhant Lamba	Government College of Engineering and Technology, Jammu		
2	Dr. Asad H. Sahir	Mr. Shahid Salik	Islamia College of Science and Commerce Hawal srinagar, Jammu and Kashmir		
3	Dr. Asad H. Sahir	Ms. Azra Shafi	Islamia College of Science and Commerce Hawal srinagar, Jammu and Kashmir		
4	Dr. Chandi Sasmal	Mr. Sagar Raina	Government College of Engineering and Technology, Jammu		
	Depa	artment of Civil Engineering	3		
5	Dr. Raheena M	Ms. Mansi Manhotra	Jammu University		
	Departr	ment of Electrical Engineer	ing		
6	Dr. Satyam Agarwal	Ms. Lovisha Changotra	Shri Mata Vaishno devi University Katra, Jammu and Kashmir		
	De	partment of Mathematics			
7	Dr. Tapas Chatterjee	Ms. Muntaha	Islamic University of Science and Technology, pulwama, Jammu and Kashmir		
	Department of N	letallurgical and Materials	Engineering		
8	Dr. Khushboo Rakha	Ms. Kajal Sharma	Jammu university		
9	Dr. Khushboo Rakha	Mr. Ibraar Ahmed	Jammu university		

	INTERNSHIPS AND TRAINING					
1.	Summer Internship Program for students from other institutes.	The Institute conducted Summer internship for the students of other institutes which includes IITs, NITs, IISERs, National Labs, Centrally funded technical Institutions, CEA's, Government Universities, Private Institutions/Universities. Indian Academy of Sciences, DST inspire or similar organization. Period: 23.05.2022 to 18.07.2022 Number of students: 65				
2.	J&K internships from AICTE	Special winter Internship program has been organized for J&K (Jammu & Kashmir) students, nominated by AICTE. Period: 08.05.2022 to 31.07.2022 No. of students: 9				

CERTIFICATE PROGRAMS

Sr. No.	Name of Program / Event	Details
1.	On-campus certificate program for SJVN Ltd. executives	Three 7-day on-campus "Functional Development Program" has been conducted at Institute for SJVN (Satluj Jal Vidyut Nigam) Ltd. engineers at IIT Ropar. Solar and Wind energy Period: 22.08.2022 to 29.08.2022 Number of participants: 20 Offered by departments: Electrical, Mechanical, Physics Number of faculty members who gave lectures in workshop:11 Battery Storage, Green Hydrogen and New Energies. Period: 12.09.2022 to 19.09.2022 Number of participants: 22 Offered by departments: Chemical, Mechanical, Metallurgical & Materials Engg. and Chemistry Number of faculty members who gave lectures in workshop:14 Operation and maintenance of Thermal Power Plant Period-20.02.2023 to 27.02.2023 Number of participants: 28 Offered by departments: Chemical, Mechanical, Electrical and Civil Number of faculty members who gave lectures in workshop:13
2.	Joint Certification Programs with NIELIT	NIELIT and IIT Ropar have conducted a joint certification training program of 6-months duration on Artificial Intelligence & Machine Learning and Internet of Things. Period: Jan, 22 to July, 22 Number of participants: 37
3.	Joint Certification With CII	IIT Ropar in collaboration with CII (Confederation of Indian Industry) Corrosion Management Division Chandigarh, has started Industry Oriented Online Continuing Education program "Online postgraduate Professional Development program in Corrosion/Management and Technology from June 2022 to March 2023. Number of participants:55










AMOUNT SANCTIONED ANNUALLY (SPONSORED PROJECTS) AMOUNT SANCTIONED TILL DATE : 167.02 (CRORE)







NO. PROJECTS TILL DATE: 403 WITH OUTLAY OF RS. 167.02 (CRORE)

CONSULTANCY PROJECTS SANCTIONED ANNUALY NO. OF PROJECTS: 430



AMOUNT SANCTIONED ANNUALLY (CONSULTANCY PROJECTS)



CONSULTANCY PROJECTS NO. OF PROJECT: 430 OUTLAY OF RS. 25.11 OVERVIEW OF CONS (CRORE)



SR Funds

With the greater emphasis on corporate funding, the Institute has received/sanctioned during the financial year 2022-23 CSR funding/projects of Rs. 0.76 crore from different industries. In the coming years, the same is going to increase manifolds through continuous and rigorous efforts of the R & D team.

MAJOR FUNDED RESEARCH AREA

- 1 Advance Manufacturing
- 2 Clean Energy
- 3 Healthcare Technology
- 4 Smart Mobility
- 5 AI & ML
- 6 Agriculture Technology
- 7 Defense Related Research
- 8 Nanotechnology
- 9 Environmental Research
- 10 Advanced Electronics
- 11 Sensors
- 12 Renewable and Clean Energy
- 13 Advanced Materials for Future Applications
- 14 Medical Instrumentation and Design
- 15 Quantum Technology
- 16 Digital Agriculture
- 17 Industry 4.0 inspired

AUGMENTATION OF RESEARCH INFRASTRUCTURE

LIST OF EQUIPMENT PROCURED IN F.Y. 2022-23

- 1 Mass Flow Meter
- 2 Compact Continuous Wave (CW) Laser
- 3 Rack Server
- 4 Server
- 5 Braille Embosser with Supporting Toolkit
- 6 AC & DC Electronic Load with USB Card
- 7 FLUKE Color LCD Thermal imager 76800 Pixel
- 8 Electrospinning Machine
- 9 Bi-Directional DC Power Supply
- 10 Lab Refrigerated incubator Shaker
- 11 Portable Xray-IR Spectral Measurement Module
- 12 Dell Workstation With Intel Xeon Silver 4214R Processor

- 13 Tyrone 1 X Intel DDR4 SDRAM with ECC 32 GB
- 14 USRP N200 Kit
- 15 LYNX Microscopes
- 16 Dell Workstation With Intel Xeon W-2295 Processor 64 GB
- 17 ELECTROCHEMICAL DEVANOSTAT
- 18 Microwave -Assisted Semi-automated Peptide Synthesizer
- 19 Source Measure Unit
- 20 Schrodinger-Material Sceince Suit Academic
- 21 hp Workstation With Intel Xeon Silver 4216 Processor 64 GB
- 22 Source Measure Unit
- 23 Flexible Substrate Printer for Conductive Nanoink
- 24 Dell Workstation With Intel Xeon Gold 6242R Processor
- 25 DELL EMC 2 X Intel DDR4 SDRAM with ECC 128 GB
- 26 TRUFROST Front Opening Forst free Commercial Refrigerator Capacity (L) 1000

SPONSORED PROJECT MONEY SANCTIONED FROM NON-INTERNAL SOURCES FY 2022-23

(Rs. in Crores)

Sr. No.	Funding Agency	Name of Faculty Member	Department	Title of Project	2022- 23	Total Sanctioned Amount
1	Massachusetts Institute of Technology (MIT)	Dr. Ickkshaanshu Sonkar (PI) Dr. Reet kamal (Co- PI)	Civil Engineering	Sustainable Agticultural Planning for Small Farm Holders in Bist Doab Region of Punjab	0.10	0.10
2	DST/TMD/IC- MAP (Collaborative project)	Dr. Mukesh Kumar	Physics	Oxide based Electron and Hole transport layers for stable and high efficient perovskite solar cells	0.49	0.49
3	SERB-SUPRA Scheme	Dr. Devranjan Samanta -PI with IIT Madras and IIT Bombay	Mechanical Engineering	Wind generation of ocean waves:from primary instabilities to cyclogenesis	0.43	0.43
4	DSMP-ISRO	Dr. Reet Kamal Tiwari (PI) and Dr. Naveen James (Co-PI)	Civil Engineering	Terrain Modelling and its Application in Landslide Hazard/Risk Assessment	0.28	0.28
5	INDIAN COUNCIL OF SOCIAL SCIENCE RESEARCH (ICSSR)	Dr. Smruti Ranjan Behera	Humanities and Social Sciences	Does location spur innovation? Evidence across Indian Manufacturing Industries	0.09	0.09
6	SERB-MTR	Dr. Jitendra Kumar	Mathematics	Uncertainty Quantification and Propagation of Population Balance Models	0.07	0.07
7	Qualcomm Faculty Award	Dr. T. V. Kalyan	Computer Science & Engineering	2022 Qualcomm Faculty Award	0.12	0.12

8	Indian National Science Academy (INSA)	Dr. Aparna N	Humanities and Social Sciences	History of Kalaripayattu and its links with indigenous medical practices	0.11	0.11
9	DRDO-CARS	Dr. Debaprasad Mandal (PI) and Dr. Tharamani C.N. (Co-PI)	Chemistry	Synthesis of Functional Epoxy and other Precursors/Monomers and their Self-healing Polymers	0.80	0.80
10	BRNS	Dr. Anupam Bandyopadhyay	Chemistry	Development of peptide based infection imaging agents and deciphering interaction mechanisms of novel peptides with model cell membranes	0.45	0.45
11	SERB-CRG	Dr. Manish Agrawal Dr. Anirban Bhattacharya, IIT, Bhubaneswar, Arugul, Jatni, odisha, and by Dr. Prasenjit Rath, IIT Bhubaneswar	Mechanical Engineering	Machine learning based model for optimization of PCM- metal foam composite energy storage system	0.18	0.18
12	DST-SPG	Dr. Tharamani Chikka Nagaiah	Chemistry	Functional materials for the recovery of chlorine from industrial waste hydrochloric acid by electrocatalysis	0.60	0.60
13	SERB-SIRE	Dr.Vishwa Pal	Physics	Investigation of noise correlations for improving the performance of a laser simulator	0.09	0.09
14	SERB-TARE	Dr. Manjunath K under Dr. K. Ramachandra Sekhar	Electrical Engineering	SERB National Post- Doctoral fellowship	0.10	0.10
15	SERB-EEQ	Dr. Kishant Kumar	Chemical Engineering	Green Solvents for Recycling Cathodes of Spent Li-ion Batteries	0.27	0.27
16	Hamburg University of Technology, Germany funded by the Alexander von Humboldt foundation and SERB-SSY	Dr. Jitendra Kumar and Prof. DrIng. Stefan Heinrich, Institut für Feststoffverfahren stechnik und Partikeltechnologie, Technische Universität Hamburg- Harburg	Mathematics	International Symposium on Interdisciplinary and transdisciplinary modelling tools for particulate systems	0.19	0.19

17	SERB-SCP	Prof. Navin Kumar with PGI	Mechanical Engineering	Externally expandable electromechanical invivo implant for the treatment of early onset spinal deformity	0.34	0.34
18	SERB-N-PDF	Mr. Nadeem Ahmed, mentor Dr. Rajesh V. Nair	Physics	SERB National Post- Doctoral fellowship	0.20	0.20
19	SERB-N-PDF	Dr. Vijay S. Sapner, Mentor Prof. Rajendra Srivastava	Chemistry	Electrochemical Biomass Conversion on Graphene Based Electrode for Energy Applications	0.20	0.20
20	SERB-SP	Dr. Brajesh Rawat	Electrical Engineering	sp/yo/2021/2509	0.50	0.50
21	SERB-CRG	Dr. Subrahmanyam Murala	Electrical Engineering	Intelligent Transportation System: AI based Deep Learning Technology for Multi- Weather Video Restoration	0.43	0.43
22	SERB-CRG	Dr. C C Reddy	Electrical Engineering	Effect of Long Term Electrical Aging on Space Charge Accumulation under Step Stress and Polarity Reversals in HVDC Cable Insulation	0.44	0.44
23	SERB-CRG	Dr. Shweta Jain and Dr. Sujit Prakash Gujar, Machine Learning Laboratory, International Institute of Information Technology Hyderabad	Computer Science & Engineering	Achieving Fairness in Federated Learning Models	0.20	0.20
24	SERB-CRG	Dr. Shweta Jain with IIT Hyderabad	Computer Science & Engineering	Learning in the presence of strategic agents	0.17	0.17
25	DST-ISRF (India Science Research Fellowship)	Mr. Sanjeev Thapa Mentor Dr. Mukesh Kumar	Physics		0.03	0.03
26	NTTM, Ministry of Textiles	Dr. Sarang P. Gumfekar (PI) Dr. Pratik Ray (Co-PI)	Chemical Engineering	Development of Indigenous Encapsulated Phase Change Material (PCM)-based Active Wear Textiles and Demonstration of Commercial-scale Manufacturing	19.61	19.61
27	SERB-NPDF	Dr. Nilima Priyadarsini Mishra, Mentor Dr. Prabal Banerjee	Chemistry	Electrochemical Generation of Ketyl Radicals Via Cathodic Reduction and Their Further Functionalization	0.19	0.19

28	SERB-TARE	Dr. Himanshu Mishra, Mentor Dr. Ranjan Das	Mechanical Engineering	Development of Intelligent Algorithm Based wind Turbine Rotors	0.10	0.10
29	SERB-CRG	Dr. Ashwani Sharma	Electrical Engineering	Switched multibeam antenna design and Quality-aware synthesis process for wireless coverage enhancement in drone assisted smart mobility application	0.33	0.33
30	DST-WOS-A	Dr. Vishakha Sood (Dr. Reet Kamal Tiwari, Mentor)	Civil Engineering	Satellite image based subpixel change detection of snow/ice cover over Himalayas	0.27	0.27
31	SERB	Dr. Sudipta Kumar Sinha	Chemistry	Understanding p53 Tumor Suppressor Signalling Pathway and Cancer Progression	0.21	0.21
32	SERB-MTR	Dr. S. C. Martha	Mathematics	Analysis of nonlinear interactions of water waves through Homotopy Analysis Method	0.07	0.07
33	DST/GITA (Indian-Taiwan Programme of Cooperation in S&T	Dr. Yashveer Singh	Chemisty	Extracellular matrix- mimicking, nanofibrous peptide gel-based scaffolds for wound healing	0.34	0.34
34	SERB-SCP	Dr. Tharamani C Nagaiah	Chemisty	Self powered flexible and wearable devices driven by triboelectric nanogenerator integrated with solid- state supercapacitor for biomedical applications	0.27	0.27
35	SERB-MTR	Dr. Shweta Jain	Computer Science & Engineering	Characterizing and Designing Combinatorial Multi- armed Bandit Mechanisms	0.07	0.07
36	SERB-CRG	Dr. Avijit Singh	Chemistry	Synthesis and Applications of C-CF ₃ and N-CF ₃ Containing Compounds	0.19	0.19
37	DST-SYST	Dr. Neha Sardana	Metallurgical and Materials Engineering	Portable bacteril sensing device for food safety	0.51	0.51
38	SERB-CRG	Dr. Indranil Chatterjee	Chemistry	Polarity Reversal Photoredox Catalysis: Asymmetric C-H Amination using Dualphoto- Organocatalysis	0.41	0.41

39	SERB-CRG	Dr. Prabal Banerkee	Chemistry	Lewis Acid Catalyzed Atroposelective synthesis of Biaryl Derivatives via Intramolecular Dearomative Cyclization/Rearomatiz ation of 3-Ethoxy Cyclobutanone	0.40	0.40
40	SERB-CRG	Dr. Anupam Bandyopadhyay	Chemistry	Engineering TRAIL mimicking peptide to cluster DR5 efficiently: cancer treatment perspective	0.62	0.62
41	SERB-MTR	Dr. Rajesh Gupta	Physics	Quantum Field Theory in the Presence of Boundary	0.07	0.07
42	ICMR Indian Council of Medical Research (Collaborative with IIT Delhi)	Dr. Chandi Sasmal	Chemical Engineering	Development of cost- effective smart manufacturing assisted prosthetic mechanical heart valve from ultra-high molecular weight polyolefin	0.05	0.05
43	IITG-TIH	Dr. Santosh Kumar Vipparthi	Electrical Engineering	Autonomous Underwater Vehicle Assistance with video quality Enhancement and Restoration	0.10	0.10
44	SERB-CRG	Dr. S. Manigandan PI and Dr. Vishwajeet Mehandia (Co-PI)	Chemical Engineering	Building nano- capsules using water- in-water nano- emulsions (aqueous two-phase systems) stabilized by the self- assembly of oppositively charged biopolymer-based nanoparticles	0.35	0.35
45	SERB-EEQ	Dr. Tarak Mondal	Chemical Engineering	A new process for the production of 2- methylfuran, a 2nd generation biofuel, from biomass-derived furfural via vapor phase catalytic transfer hydrogenation	0.44	0.44
46	SERB-CRG	Dr. Neelkanth Nirmalkar	Chemical Engineering	A breakthrough revolution in crystallization technology by nanobubbles as nuclei agents	0.26	0.26
47	CPRI	Dr. Ranjan Das	Mechanical Engineering	Development of a Renewable Energy- based and Fully Grid Independent Radiant Air-Conditioning System	0.27	0.27

				Algorithmic Ctudy of		
48	SERB-CRG	Dr. Arti Pandey	Mathematics	Algorithmic Study of Secure and Roman Domination in Graphs and their Variants	0.20	0.20
49	SERB-CRG	Dr. Chandrakant Kumar Nirala (PI) and Dr. Anupam Agrawal (Co-PI)	Mechanical Engineering	Design and development of ultrasonic vibration- assisted micro-cutting technology under sustainable environments for additively manufactured alloys	0.48	0.48
50	SERB-CRG	Dr. Anupam Agrawal (PI) and Dr. Chandrakant Kumar Nirala, Dr. Prasad JNV Manepalli and Prof. K. Narasimhan (Co-PI)	Mechanical Engineering	A new approach for micro-incremental sheet forming of ultra- thin sheets and formulation of size- effect based fracture prediction model	0.41	0.41
51	SERB-EEQ	Dr. Santosh Kumar Vipparthi	Electrical Engineering	iSelecT: Multifaceted comprehensive framework for Referred instance selection and segmentation in a visual data	0.41	0.41
52	SERB-SCP	Dr. Brijesh Kumbhani (PI) and Dr.Satyam Agarwal, Dr.Sam Darshi and Prof. Jyotindra Singh Sahambi	Electrical Engineering	Non-contact small form-factor neonatal apnea monitoring device	0.32	0.32
53	SERB-EEQ	Dr. Santosh Kumar Meena	Chemical Engineering	Rational Self-assembly of Nanoparticles on Molecularly Tailored Substrate: Theory and Experiments	0.07	0.07
54	MoES/PAMC/DO M	Dr. Santosh Kumar Vipparthi	Electrical Engineering	Al based Technology for Underwater Varicoloured Video Restoration and Object Detection	0.45	0.45
55	SERB-SPR	Dr. Bodhisatwa Das	Department of Biomedical Engineering	Application of artificially polyploidy induced primary skin cells in wound healing	0.71	0.71
56	NATIONAL MISSION ON HIMALAYAN STUDIES (NMHS)	Dr. Aditya Singh Rajput	Civil Engineering	Revival of Climate cum Disaster Resilient Vernacular Housing Techniques of the North-Western Indian Himalayan Region: Documentation, Investigation, and Knowledge Dissemination	0.38	0.38

				Centre of Excellence		
57	DST-TDT/AM	Prof. Harpreet Singh	Mechanical Engineering	CoE- Degradation resistant thermal spray coatings engineered for indigenous industrial application	3.80	3.80
58	Punjab State Council for Science & Technology (PSCST)	Dr. Neelkanth Nirmalkar	Chemical Engineering	Piloting of Air Nano Bubble Technology	0.06	0.06
59	ISRO	Dr. Sarang P. Gumfekar	Chemical Engineering	Development of durable and smart catalyst layer structures for low temperature PEM fuel cells	0.23	0.23
60	ISRO	Dr. Shashi Shekhar Jha (PI) Dr. Satyam Agarwal (Co-PI)	Computer Science & Engineering	Distributed Beamforming and Beampattern Design using Drone Swarm Network	0.35	0.35
61	Punjab State Council for Science & Technology (PSCST)	Dr. Naveen James, Dr. Resmi Sebastian and Dr. Raheena M (Pls)	Civil Engineering	Potential Utilization of Recycled Wool Fabric for Geo-synthetic Applications	0.10	0.10
62	ISRO	Dr. Debangsu Roy	Physics	RES-VSSC-2022-010: Spinel or Garnet ferrite thin films for satellite applications	0.27	0.27
63	Mission Tandrust Punjab	Dr. Ickkshaanshu Sonkar	Civil Engineering	Climate Change and its Impact Assessment of Rice and Wheat Cropping in Punjab; A Way Towards Sustainable Agricultural Practices	0.08	0.08
64	SERB-EEQ	Dr. Sairam Kaliraj	Mathematics	Harmonic Mappings and Harmonic Function Spaces	0.25	0.25
65	SERB-CRG	Dr. C. M. Nagaraja	Chemistry	Development of 2D Metal-Organic Nanosheet (MONs)- based Photocatalysts for Production of Clean Fuel and Value-added Chemicals	0.12	0.12
66	DST/IC/Austria (Travel grant)	Dr. Brijesh Kumbhani (PI) Prof. Ghanshyam Singh (Co-PI) MNIT Jaipur	Electrical Engineering	Terrestrial network offloading for enhancemnet of vehicular communication through integration of microwave with optical wireless communication	0.05	0.05
67	BIRAC	Dr. Indranil Chatterjee and Dr. Prabal Banerjee	Chemistry	Development of diphenyl urea derivatives as a new class of antivirals against Dengue virus infection	0.10	0.10

*	Ministry of Electronic & Information Technology (MeiyY)	Dr. Sarang P. Gumfekar (Chief Investigator) Joint project with NIT Warangal, Telangana	Chemical Engineering	Development of Electrically Conductive Adhesives for the Microelectronic Packaging and Flexible Film Circuits	0.09	0.09			
					40.91	40.91			
* Ac	* Additional grant of Rs. 0.09 received in financial year 2022-23								

CONSULTANCY PROJECT MONEY SANCTIONED FROM NON-INTERNAL SOURCES FY 2022-2023

(Rs. in Crores)

Sr. No.	Funding Agency	Name of Faculty Member	Department	Title of Project	2022 -23	Total Sanctioned Amount
1	Industrial Consultancy	Dr. Reet Kamal Tiwari (CI), Dr. Sagar Rohidas Chavan and Resmi Sebatian (Co-CIs)	Civil Engineering	Survey, Hydrology and Geotechnical testing work at SWAN River, Punjab	0.26	0.26
2	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the proposed Extension of Deck Slab Flare Portion	0.00	0.00
3	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Proposed Chaukidar Quarter, Office Block Ware House or Godown and Boundary Wall of Ventral Warehouse, Drass, Ladakh	0.01	0.01
4	Industrial Consultancy	Dr. Aditya Singh Rajput (Cl) and Dr. Mitesh Surana (Co-Cl)	Civil Engineering	Proof Checking of Structural Drawing of J&K Police Housing and ITBP	0.01	0.01
5	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Sun Shelter Sulur	0.01	0.01
6	Industrial Consultancy	Dr. Indramani Dhada (PI) and Dr. Ramjee Repaka (Co-PI)	Civil Engineering/ Mechanical Engineering	Technical and Structural Audit of Bottling Plant I	0.00	0.00
7	Industrial Consultancy	Dr. Ramjee Repaka	Mechanical Engineering	Technical and Structural Audit of Bottling Plant II	0.01	0.01
8	Industrial Consultancy	Dr. Ramjee Repaka	Mechanical Engineering	Technical and Structural Audit of Bottling Plant III	0.00	0.00
9	Industrial Consultancy	Dr. Ramjee Repaka	Mechanical Engineering	Technical and Structural Audit of Bottling Plant IV	0.01	0.01

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10	Industrial Consultancy	Dr. Ramjee Repaka	Mechanical Engineering	Technical and Structural Audit of Bottling Plant V	0.00	0.00
11	Industrial Consultancy	Dr. Ramjee Repaka	Mechanical Engineering	Vetting of Air Conditioning Plant Design at af Station, Thoise	0.00	0.00
12	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Proposed Meeting hall	0.00	0.00
13	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of flyover (25+42+25=92M) at Nowgam Junction	0.01	0.01
14	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structural Design and Drawing Pot Cum PTFE Bearing of Rob in Liwu of Level Crossing S-148	0.00	0.00
15	Industrial Consultancy	Dr. Indramani Dhada	Civil Engineering	Structural and Technical audit of your Bottling Plant	0.00	0.00
16	Industrial Consultancy	Dr. Indramani Dhada	Civil Engineering	Structural and Technical audit of your Bottling Plant	0.00	0.00
17	Industrial Consultancy	Dr. Indramani Dhada	Civil Engineering	Structural and Technical audit of Bottling Plant	0.00	0.00
18	Industrial Consultancy	Dr. Ramjee Repaka	Mechanical Engineering	Technical and Structural Audit of Bottling Plant VI	0.01	0.01
19	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the revised structural design of 2L RCC OHT	0.00	0.00
20	Industrial Consultancy	Dr. Dhiraj K. Mahajan	Mechanical Engineering	Design Guidelines for Surface Disinfection system of Negative Pressure Ambulance	0.03	0.03
21	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Road Widening, Bridges, and Drains on PR-4 Road	0.06	0.06
22	Industrial Consultancy	Dr. C C Reddy	Electrical Engineering	Understanding and Assessment of Stress Control Materials	0.07	0.07
23	Industrial Consultancy	Dr. Aditya Singh Rajput	Civil Engineering	Vetting of Structural Drawings of Overhead Water Tank of Three Different Capacities	0.01	0.01
24	Industrial Consultancy	Dr. Dhiraj K Mahajan	Mechanical Engineering	Designing of gas turbines for energy storage	0.03	0.03

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25	Industrial Consultancy	Dr. Sagar Rohidas Chavan	Civil Engineering	Vetting of Hydrology report of MUB 7+320 and Hydrology report of MUB 1+800	0.01	0.01
26	Industrial Consultancy	Dr. Indranil chatterjee	Chemistry	Synthesis of 5' Noraristeromycin	0.06	0.06
27	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Book Café at New Shimla Sector-3	0.00	0.00
28	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of RCC Trench & HFL Bridge	0.01	0.01
29	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the revised foundation design for 540m PSC girder Bridge	0.01	0.01
30	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Proposed Motorable Bridge for the PMGSY project at KM 9th RD 600-625	0.00	0.00
31	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the bearings for Bridge-67 of USBRL project	0.01	0.01
32	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the bearings for Bridge-01 of USBRL project	0.00	0.00
33	Industrial Consultancy	Dr. Abhinav Dhall	Computer Science & Engineering	Engagement Al	0.10	0.10
34	Industrial Consultancy	Dr. Anupam Agrawal	Mechanical Engineering	Study of forming process in Servo Press	0.01	0.01
35	Industrial Consultancy	Dr. Sachin Kumar	Mechanical Engineering	FEA of Welded Structure	0.01	0.01
36	Industrial Consultancy	Dr. Prince Kumar Singh	Metallurgical and Materials Engineering	Assessment of Tundish Hydrodynamic Behaviour	0.02	0.02
37	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the bearing for Bridge-1 of USBRL Project	0.00	0.00

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38	Industrial Consultancy	Dr. Vishwa Pal	Physics	Extending the Depth of Focus of a High Power Laser output Beam	0.06	0.06
39	Industrial Consultancy	Dr. Narinder Singh	Chemistry	Evaluation of CETP Processing Parameter to Upgrade the Plant for Treatment of Wastwater from Pharmaceutical and Personal Care Products	0.16	0.16
40	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking Design and Drawing 1865.00 kn Pot-Cum-Ptfe Bearing	0.00	0.00
41	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Structural proof checking of proposed construction of 4176 MTC godown along with internal roads, office block, chowkidar quarter and boundary wall at Zanskar, Ladakh	0.01	0.01
42	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of proposed Retaining Wall of Central Warehouse, Drass, Ladakh	0.00	0.00
43	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Launching Scheme of 60 MTR BOW string Girder	0.01	0.01
44	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of 65.7m Motorable Bridge at Sachitakna Over River Sheyok Nubra, Leh	0.01	0.01
45	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Dlawings of Aviation Hanger, Leh	0.01	0.01
46	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of proposed road bridge over Ravi Canal at RD 1135m	0.01	0.01
47	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Chemistry	Ganirelix Impurities Analysis Report	0.07	0.07
48	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Structural Proof checking of proposed Library Building, Nalanda University, Bihar	0.09	0.09

49	Industrial Consultancy	Prof. Navin Kumar	Mechanical Engineering	Analyse the vibration spectrun with respect to the datum vibration spectrun to indiacted the early warning of the upcoming defect	0.01	0.01
50	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of proposed Towers for Green Lotus Utsav, Zirakpur	0.35	0.35
51	Industrial Consultancy	Dr. Venkata M. Viswanath Gunturi	Computer Science & Engineering	MAPG-2022 Spatio- Temporal Data Driven Approaches for Improving Latency in Azure Cloud Services	0.18	0.18
52	Industrial Consultancy	Dr. Neha Sardana	Metallurgical and Materials Engineering	Development of Process for Producing Zinc Oxide Flakes and Material Comparison of Paint Samples	0.02	0.02
53	Industrial Consultancy	Dr. C C Reddy	Electrical Engineering	Failure analysis of 220V cable joints	0.06	0.06
54	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the Design & Drawing of Retaining Wall, Dehradun	0.01	0.01
55	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Aviation Hanger, Dehradun	0.01	0.01
56	Industrial Consultancy	Dr. Putul Haldar	Civil Engineering	Condition Assessment of PEB structure of MSME Building at Baddi (HP)	0.02	0.02
57	Industrial Consultancy	Dr. Narinder Singh	Chemistry	Design and Guidelines of Metallic and/or Alloy Nanoparticles for various Types of Formulation	0.17	0.17
58	Industrial Consultancy	Dr. Aditya Singh Rajput	Civil Engineering	Vetting of design and drawings of overhead water tanks of Different capacities under jal jeevan mission in Lakhimpur Kheri, UP	0.01	0.01
59	Industrial Consultancy	Dr. Narinder Singh	Chemistry	Design the strategy for the water purification using advanced oxidation process	0.12	0.12

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60	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Various Stagings of OHTs	0.04	0.04
61	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of parking & Revenue office at Kasumpti	0.00	0.00
62	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Chemistry	Synthesis of Lanreotide Impurities and Characterization	0.29	0.29
63	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Structural proof checking of proposed construction of 6264 Mt Godown, Office Block, Compound Wall, Weigh Bridge Cabin, Security check Post, Labour Shed, Parking Shed and Residential quarteres Etc, along with internal road and Electrical installment at Zunheboto, Nagaland	0.02	0.02
64	Industrial Consultancy	Dr. Putul Haldar	Civil Engineering	Contition Assessment of floor Structure of MSME Building at Durg (Chhattisgarh)	0.03	0.03
65	Industrial Consultancy	Dr. Putul Haldar	Civil Engineering	Contition Assessment of floor Structure of MSME Building at Pudi (Visakhapatnam)	0.03	0.03
66	Industrial Consultancy	Dr. Naveen James, Dr. Resmi Sebastian, Dr. Raheena M, Dr. Reet Kamal Tiwari, Dr. Sayantan Ganguly and Dr. Aditya Singh Rajput (all are CI)	Civil Engineering	Proposing the remedial Measures for the retaining wall failure in the deudhar village (in the Takoli- Kullu Highway)	0.80	0.80
67	Industrial Consultancy	Dr. Tharamani Chikka Nagaiah	Chemistry	Tata Steel Material NEXT 2022	0.01	0.01
68	Joint R&D project	Dr. Sudarshan Iyengar	Computer Science & Engineering	GUVI - In research Collaboration	0.07	0.07
69	Industrial Consultancy	Dr. Subrahmanyam Murala & Abhinav Dhall	Electrical Engineering & Computer Science & Engineering	Lidar data based tree Species classification	0.13	0.13

70	Consultancy project-Govt.	Dr. Resmi Sebastian, Dr. Naveen James and Dr. Mitesh Surana (PI)	Civil Engineering	Analysis of Seismic Data (seismographs and Strong Motion Accelerographs) of NJHPS, Nathpa for the period of two year	0.16	0.16
71	Industrial Consultancy	Dr. Resmi Sebastian and Dr. Naveen James (CI)	Civil Engineering	Vetting the SBC calculations for project title " Provn of Fire Stnto Incl Garage for TFF and Living Accn for Fire Crew Eith Allied Infrainsidedepot Area of 41 FAD	0.00	0.00
72	Industrial Consultancy	Dr. Saifullah Payami	Electrical Engineering	Development of Switched Reluctance Motor (SRM) Drives for Actuators	0.27	0.27
73	Industrial Consultancy	Dr. Khushboo Rakha	Metallurgical and Materials Engineering	Feasibility Study of Iron Extraction from Industrial Mill Scale	0.07	0.07
74	Industrial Consultancy	Dr. Sagar R. Chavan	Civil Engineering	Vetting of Estimated Design Discharge from the	0.01	0.01
75	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Kendriya Vidhyalaya Samiti	0.01	0.01
76	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of SSP Plant PEB	0.01	0.01
77	Industrial Consultancy	Dr. T. V. Kalyan	Computer Science & Engineering	Large Scale GPU Graph Analytics and Protability Across Architectures	0.86	0.86
78	Industrial Consultancy	Dr. Vishwajeet Mehandia	Chemical Engineering	Characterization Report of Physical and Chemical Properties of Vegetable Oil	0.05	0.05
79	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of design and drawings of LVUP	0.00	0.00
80	Industrial Consultancy	Dr. Putul Haldar	Civil Engineering	Proof checking of structural drawings of "PP FRP Rectangular Pickling Tank"	0.01	0.01

81	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Launching Scheme Launching scheme of 12x45.7 MTR Open WEB Girder by Pulling Method	0.01	0.01
82	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the design and drawings of VIP Stand-Open Stadium, Leh	0.00	0.00
83	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Proposed LGFS Shops, Shimla HP	0.00	0.00
84	Industrial Consultancy	Prof. Navin Kumar	Mechanical Engineering	A comparative Study of Osteoporotic and Normal Vertebrae among Indian Population	0.04	0.04
85	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of LGSF G+2 Structure Delhi Cantt	0.01	0.01
86	Industrial Consultancy	Dr. Swati A Patel and Dr. J. Kalaiselvi (CI)	Chemical Engineering	Designing of Pumpsets and Allied Electrical works for STP Irrigation Projects	0.00	0.00
87	Industrial Consultancy	Dr. J. Kalaiselviand Dr. Swati A Patel (CI)	Chemical Engineering	Designing of Pumpsets and Allied Electrical works for STP Irrigation Projects	0.00	0.00
88	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Chemistry	Consultany of Ganirelix Impurity Synthesis and Lanreotide Impurities Analysis Report	0.42	0.42
89	Industrial Consultancy	Dr . Indramani Dhada	Civil Engineering	Structural Drawing including working Drawing for the work Construction of Training Raw Material store of CTTC at Campus of Bhubaneswar	0.01	0.01
90	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Truck DRIVER Rest Rooms, HP, India	0.00	0.00
91	Industrial Consultancy	Dr. Aditya Singh Rajput	Civil Engineering	Vetting of Drawings of Marriage Palace Belonging to Master Care Hospitalities Pvt. Ltd.	0.01	0.01

92	Industrial Consultancy	Dr. Muthulingam Subramaniyan (C I) and Mr. Vipin Kumar (Co-Cl)	Civil Engineering	Testing the compressive strength concrete core specimens	0.01	0.01
93	Industrial Consultancy	Dr. Muthulingam Subramaniyan (C I)	Civil Engineering	Proof Checking the Design & Drawings of RCC Bunkers	0.01	0.01
94	Industrial Consultancy	Dr. Aditya Singh Rajput	Civil Engineering	Vetting of Drawings of Proposed Building at Amritsar	0.02	0.02
95	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Pile Foundation, Parking Sheds, Kochi	0.00	0.00
96	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking Structural Design and Drawings of the Substructure for ROB ON JHANSI-GWALIOR Section	0.01	0.01
97	Industrial Consultancy	Dr. Shashi Shekhar Jha	Computer Science & Engineering	Development of drone based pixel and feature identification and locator system	0.07	0.07
98	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Structural design and Drawings for G L Bajaj Institute, Greater Noida	0.04	0.04
99	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Proposed LGFS Shops, Shimla HP	0.00	0.00
100	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the design and drawings of Proposed Construction of 2 Nos of PEBs at Central Warehouse, Hosur-1, Tamil Nadu	0.04	0.04
101	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of 24m Motorable Bridge ON ROAD BARMOTA TO DOULKA	0.00	0.00
102	Industrial Consultancy	Dr. Subrahmanyam Murala (CI) Dr. Santosh Kumar V	Electrical Engineering	Deep Learning based Solution for Electric Pole Restoration (Deblurring and Denoising)	0.25	0.25

103	Industrial Consultancy	Dr. Aditya Singh Rajput (Cl) & Dr. Mitesh Surana (Cl)	Civil Engineering	Site Visit to Aryabhatt Vigyan Kendra, Ambala	0.00	0.00
104	Industrial Consultancy	Dr. Subrahmanyam Murala (Cl), Dr. Santosh Kumar V (Cl) and Dr. Abhinav Dhall (Cl)	Electrical Engineering/ Computer Science & Engineering	Tool Development for Improvement in quality of images captured offshore	0.17	0.17
105	Industrial Consultancy	Dr. Aditya Singh Rajput (Cl) & Dr. Mitesh Surana (Cl)	Civil Engineering	Vetting of Structural Drawings of Proposed Commercial Building, Vijay Nagar, Jalandhar	0.00	0.00
106	Industrial Consultancy	Dr. Naveen James and Dr. Resmi Sebastian (Cl)	Civil Engineering	Vetting of the Geotechnical Investigation Report	0.00	0.00
107	Industrial Consultancy	Dr. Aditya Singh Rajput (Cl) & Dr. Mitesh Surana (Cl)	Civil Engineering	Sitie Visit to Esic Reigonal Office and Staff Qarter, Chandigarh	0.00	0.00
108	Industrial Consultancy	Dr. Putul Haldar (Cl) and Dr. Aditya Singh Rajput (Co-Cl)	Civil Engineering	Condition Assessment of Floor Structure of MSME Building at Sitargang	0.03	0.03
109	Industrial Consultancy	Dr. Putul Haldar (Cl) and Dr.Aditya Singh Rajput (Co-Cl)	Civil Engineering	Condition Assessment of Floor Structure of MSME Building at Rohtak	0.03	0.03
110	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of AMN Bunkers for Indian Army	0.01	0.01
111	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of RCC AMN Bunkers	0.01	0.01
112	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the Design & Drawings of hardstanding and retaning walls, Dehradun	0.00	0.00
113	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the Design & Drawings of retaning walls	0.01	0.01
114	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of Drawings & Design for Seven (7) High Level bridges	0.01	0.01

115	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the Design & Drawings of AMN Bunkers for Indian Army	0.01	0.01
116	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the proposed 60-meter span Truss Girder Bridge at Uri Baramulla	0.01	0.01
117	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of the design and drawings of ROB at project Ch. 146.533 of NH-56	0.01	0.01
118	Industrial Consultancy	Dr. Indramani Dhada (CI), Dr. Smruti Ranjan Behra (Co-CI)	Civil Engineering	Environmental Study and Ecological Impact of Using a Decentralized Waste Processing Model	0.02	0.02
119	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Launching Scheme of 60 MTR BOW string Girder CH120 and CH103	0.01	0.01
120	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Launching Scheme of 60 MTR BOW string Girder KR113	0.00	0.00
121	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of the design and drawings of culverts and retaining walls	0.01	0.01
122	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of the design and drawings of storange tanks	0.03	0.03
123	Industrial Consultancy	Dr. Aditya Singh Rajput (Cl) and Dr. Mitesh Surana (Co-Cl)	Civil Engineering	Vetting of Drawings of Guard Room and Flag Staff House owned by Garrison Engineer Jammu Cantt.	0.00	0.00
124	Industrial Consultancy	Dr. C C Reddy	Electrical Engineering	Design Specifications for Motors for Bhaddi Lift Scheme at Kandi Canal Stage II	0.07	0.07
125	Industrial Consultancy	Dr. Putul Haldar	Civil Engineering	Vetting of revised Structural Drawings of ESR Standard Warehouse (II)	0.01	0.01

126	Industrial Consultancy	Dr. Narinder Singh	Chemisrtry	Evaluation of Processing Parameters of Wire Drawing Industries and Development of Lab Scale Strategy for Waste Water Treatment	0.08	0.08
127	Industrial Consultancy	Dr. Bhavesh Garg	Humanities and Social Sciences	Consultancy for G-20 project undertaken at the institute of Economic Growth, Delhi	0.04	0.04
128	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the design of retaining wall,U-trap and revised P1 cap	0.00	0.00
129	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of 4 Nos. of Bridges	0.02	0.02
130	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Mix design (M15, M20, M35) and testing of concrete specimens	0.02	0.02
131	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of the design and drawings of cold storage	0.01	0.01
132	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of structural Design and Drawing of Amarya City (3 BHK, S+14), Mohali	0.03	0.03
133	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structural Design of Retaining Walls	0.00	0.00
134	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structural Design of Retaining Walls	0.01	0.01
135	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking the design and drawings of Proposed Construction of 2 Nos of PEBs at Central Warehouse, Trichy, Tamil Nadu	0.06	0.06
136	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Proposed Community Centres, MC Baddi	0.01	0.01
137	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Box Culvert	0.00	0.00
138	Industrial Consultancy	Dr. Khushboo Rakha	Metallurgical and Materials Engineering	Assessment of Bending in Aluminum Pipes	0.03	0.03

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139	Industrial Consultancy	Dr. Ramjee Repaka	Mechanical Engineering	Technical and Structural Audit of Bottling Plant VII	0.01	0.01
140	Industrial Consultancy	Dr. Aditya Singh Rajput and Dr. Mitesh Surana (CI)	Civil Engineering	Vetting of Drawings of DOG Kennel building and steel water tank (height 19.20 meters) owned by Garrison Engineer Air force Chandigarh	0.01	0.01
141	Industrial Consultancy	Dr. Chandrakant Kumar Nirala	Mechanical Engineering	Vibration Assisted Micro EDM to Help Increase the MRR & Surface Finish	0.01	0.01
142	Industrial Consultancy	Dr. Dhiraj K Mahajan	Mechanical Engineering	CFD Analysis for Garudeshwar (2x4.5 MW) SHP	0.08	0.08
143	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof checking of the design and drawings of plug & play buildings	0.03	0.03
144	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Structural Design & Drawings of the Aqueduct structure including barrel, flair-in flair-out walls, Protection works across Sukhral Khad and Adjoining Nallah from Chainage +- 265.8 to +819.0m of proposed Ravi Canal (Revised)	0.08	0.08
145	Industrial Consultancy	Dr. Balwinder Sodhi (Cl) and Dr. Deepti Bathula, Dr. T.V. Kalyan, Dr. Shirshendu Das (Co-Cl)	Computer Science & Engineering	Broadridge NHO Program (Batch#4) Project reference: Broadridge/ NHO2022- B2/B.SODHI	0.08	0.08
146	Industrial Consultancy	Dr. Indramani Dhada	Civil Engineering	Structural and Technical audit of your Bottling Plant	0.00	0.00
147	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking of Proposed hotel building, Jalandhar	0.01	0.01
148	Industrial Consultancy	Dr. Sagar Rohidas Chavan	Civil Engineering	External Expert for monitoring the project titled "Development of inflow forecasting system or Ranjit Sagar Dam and Inundation forecasting downstream of Ranjit Sagar Dam"	0.01	0.01
149	Industrial Consultancy	Dr. Muthulingam Subramaniyan	Civil Engineering	Proof Checking the Design & Drawings of Box Culvert II	0.00	0.00

150	Industrial Consultancy	Dr. Putul Haldar	Civil Engineering	Vetting of structural drawings of ESR B05, Chakan Project	0.04		0.04
151	Industrial Consultancy	Dr. Indramani Dhada	Civil Engineering	Structural and Technical Audit of Bottling Plant	0.00		0.00
*	Industrial Consultancy	Dr. C C Reddy	Electrical Engineering	Motorization of Main Gates, Sluice Gates and Regulator Gates of Sirhind Canal System at Ropar Headworks	0.13	0.13	
					7.28		7.28
* Addit	ional grant of Rs. (0.13 received in fina	ncial year 2022	2-23			

INTELLECTUAL PROPERTY RIGHT CELL

Intellectual Property Cell at IIT Ropar strives to support innovators of the institute to patent their invention. Apart 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 led with three Indian patents granted, one US patent granted and several MOUs signed, IPR cell has many more patents in progress.

IP TYPE	APPLICATION FILED (No.)	GRANTED (No.)
Indian	15	5
USA	1	0

INTELLECTUAL PROPERTY RIGHTS WORKSHOP

IIT Ropar organized Intellectual Property Rights workshop for research students with the support of Punjab State Council for Science and Technology to encourage inventors to bring out better inventions and innovations following IPR regulations. The workshop was organized with the motive of spreading the knowledge on the IPR regulations, its importance and was protection, and attended by over 120 participants from various educational institutions.





- CAREER DEVELOPMENT PLACEMENT CELL (CDPC)



CAREER DEVELOPMENT PLACEMENT CELL

The placement results during the placement session of 2022-23 at IIT Ropar have been very encouraging. A good and encouraging response from the industry was seen for the campus recruitment process as a result of which 78.85% of our students were placed. 93.24 % of the Computer Science students, 79.10% of Electrical Engineering students, 71.67% of the Mechanical Engineering students, 50% of Civil Engineering students, 73.68% of Chemical Engineering, 78.57% of Metallurgical and Materials Engineering and 94.12% of Mathematics and Computing students have been offered positions in core-technical, consultancy and IT companies. An average package of over 20.94 lakhs per annum was offered to students this year. Some of the premier companies where our students (2023 graduating batch) got placed are:

Oracle, Rakuten Mobile, Rippling, Sprinklr, Thoughtspot, Nvidia, Texas Instruments, Media.net, Navi, Flipkart, Zomato, Cashfree, Mathworks, Arcesium, CoinDCX, Arista Networks, Amagi, Jio Saavn, Publicis Sapient, Newzera, Irage Capital, Maruti Suzuki, Axis Bank, Grey Orange, Saint Gobain Research India, Volvo India Pvt. Ltd., Pepsico India, Bharat Electronics Limited, Mahindra & Mahindra, Renault Nissan Technology & Business Centre India, Accenture Japan, Tridiagonal Solutions, Morgan Stanley Capital International, Trident Group, Qualwebs, Dolcera, Indxx Capital, Logic Fruits Technology, Planet Spark, Dyeus, Grant Thorntan Bharat LLP, Vestas, Lumustech, Larsen & Toubro, Infosys, HCL Technologies, Ernst & Young, Bharat Airtel Limited, Decision Point Pvt. Ltd., Galgotias University, Siemens, Cubastion Consulting, Jacobs, Arcelor Mittal & Nippon Steel, Jindal Steels, Cogoport, Len Den Club, Siemens Gamesa Renewable Energy, Atotech, SRF Limited, Jacobs, Physics Wallah Pvt Ltd., SCA Technologies, MAQ Sotware, UIDAI, Decimal Point Analytics, Aarti Industries, HDFC Bank, ICICI Bank, Nucleus Software, Merilytics, Truminds, Delloite, Axxela, Perceptive Analytics, Tata 1mg, PayTm, EXL Services, Hi-Tech Robotics, Cogoport, Bert Labs, BeeHyv, Stranlife Sciences.







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 (2024 graduating batch).

DE Shaw, Sprinklr, Oracle, Amazon, Tata Steel, American Express, Texas Instruments, Flipkart, Newzera, Indeed, Nvidia, Uber, Irage Capital, Nurture Farm, Arista Networks, Mathworks, Salesforce, Silicon Labs, Exawizards, Axxela Advisory Services, Yum Brands, Oppo India R&D, Google, Cogoport, Astrome Technologies, Ceremorphic Technologies, Samsun Reserach Institute, Jaguar Landrover, Zomato, Accenture, MAQ Software, Hyperverge, Decimal Point Analytics, GE Healthcare, Truminds Software Systems, Netmeds, I'm Beside You, Perceptive Analytics, Kanvic Consulting Future First, ST Microelectronics, Codenation, Microsoft. As a part of Professional Development the following activities were conducted:

- Interactive Session with Ms. Ragini Pathak, Senior Vice President, Metacrafters.
- AI/ML Workshop by Ms. Mona M and Mr. Premkumar Rangarajan.
- Virtual Interaction with Ms. Joely To, "The Journey of young STEM/maths entrepreneur.
- Virtual Interaction by Ms. Ulrika Sultan "Why don't girls become women in Tech".
- Interaction with Mr. Ashish D Ghanpure students of Civil Engineering Students under (CD-POL) Series.
- Professional Development Session by Mr. Yogesh Yadav.
- Visit to BD Chandigarh for Campus Ambassador Program.



TECHNOLOGY BUSINESS
INCUBATOR FOUNDATION



TECHNOLOGY BUSINESS INCUBATOR FOUNDATION

With the aim of building a robust startup ecosystem within the state and beyond, **IIT Ropar's Technology Business Incubator Foundation (TBIF)** strives to nurture and create value for startups, MSMEs, entrepreneurs, and other ecosystem partners. Its mission is to enable and empower an ecosystem hungry for innovation. IITRPR-TBIF, which was established in 2016 as a Section 8 company (non-profit organization), offers startups a 20,000 sq. ft. incubation facility



to help start, scale up, and accelerate. It is set up under the NIDHI TBI Scheme of the Department of Science & Technology, Government of India.

Moreover, it provides startups access to networks, cutting-edge technology, central research facilities at IIT Ropar, well-knit network of technical and business mentors, an investor pool, government funding, etc.

In order to make India globally competitive and to fulfil the vision of building a self-reliant India, start-ups and innovators play a vital role. The Atma Nirbhar Bharat Abhiyan is a chance for Indian start-ups to take charge of the innovations for which we are usually dependent on global suppliers. Our startups are contributing to the mission by innovating and bringing to market, products and services that are world-class and yet affordable. They are quick to spot opportunities in adversity and innovate within their limited time and budget to make competitive products.

Governing Body and Management: The incubator is governed by its Board of Directors, with Prof. Rajeev Ahuja (Director, IIT Ropar) as the Chairman. The operations of the company are administered and headed by Dr. Atharva Poundarik (Center for Biomedical Engineering), who is the faculty in-charge and Director of TBIF. Besides this, Prof. Navin Kumar (Department of Mechanical Engineering), Dr. Anshu Dhar Jayal (School of Mechanical Materials and Energy Engineering), and Dr. Shashi Shekhar Jha (Department of Computer Science & Engineering) are also on the TBIF's Board of Directors.

The day-to-day operations of the organization are carried out by Ms. Karuna Kanwar, who is the Incubation Manager of the Incubator, along with Mr. Amanpreet Singh Gill (Office Executive) and Ms. Akwinder Kaur (Accounts Executive).

Years of existence	:	7 years
Total number of startups supported	:	30
Total number of active startups	:	
Physical Incubatees	:	4
Virtual Incubatees	:	9
Total Startups incubated in F.Y. 2022-2023	:	5
No. of Startups in pipeline for incubation by April 2023	:	10
Total number of active startups Physical Incubatees Virtual Incubatees Total Startups incubated in F.Y. 2022-2023	:	9 5

Core competences of the Incubator (Thrust areas of the Incubator): IIT Ropar - TBIF empowers local entrepreneurs, researchers, and students to build deep tech businesses

covering a wide variety of technologies and innovations in the thrust areas, including but not limited to the following:

- Manufacturing
- IoMT
- IoT, AI, ML
- Defence & Security
- Healthcare Technologies

Value added services offered by the Incubator to its incubatee startups: TBIF offers the following facilities to startup incubates:

- State-of-the-art lab facilities.
- Access to computing and cloud infrastructure.
- 24 x 7 access to fully furnished co-working and individual dedicated office spaces.
- Generous seed funding and soft loan support to give them a kickstart.
- Mentorship from domain experts.
- Support in legal and financial compliances.
- Access to Angel and VC funding.
- Internet Facility and basic utilities.
- Common facilities like conference room, meeting room, printing, scanning, pantry, etc.
- · Accommodation in hostels subjected to availability.
- Access to common prototyping/testing facilities at very nominal rates.
- Run cohort and dedicated incubation program to make startups investment ready.
- Dedicated accelerator programs.
- · Access to electronic and mechanical prototyping facilities of TBIF.
- · Membership of the Entrepreneurship library of TBIF.



Electronic Prototype



Entrepreneurship Library



Heavy Duty Table Saw



Digital Multimeters

Physical Infrastructure (Size of the Incubator in sq.ft.) and highlighting details of dedicated administrative space, common facilities, lab facilities, etc.: A total of 20,000 sq. ft. of space has been allocated to TBIF, of which 10,000 sq. ft. of space has been allocated to TBIF on the 3rd floor of the M. Visvesvaraya administrative block. The space currently

comprises an open space to be remodeled as the main co-working space, a faculty in-charge office with a lounge, an administrative office of TBIF, an office for the Incubation Manager, 6 (Six) start-up offices, 3 common design and die labs, a co-working space with 13 PCs.

Another 10,000 sq. ft. of additional furnished space was recently allocated by the institute in another location on the main campus. This space is proposed to be used by startups wishing to set up a small manufacturing unit.

Impact created on the ecosystem: Creating next-generation start-ups is the need of the hour. This is where we encourage faculty and students of the institute to leverage the research advances being made at IIT Ropar in spanning areas such as artificial intelligence, machine learning, IoMT, manufacturing, defence & security, healthcare technologies, etc. We believe extensive effort to convert these innovations into job-creating commercial products is essential, which can only happen with effective collaboration between industry, academia, and the government. Hence, we are restructuring ourselves to evolve into a much more potent home for deep tech startups by bringing all the stakeholders of the ecosystem, like entrepreneurs, investors, industry, MSME, and academia, onto a single platform. Our main goal is to make it easier for startups at the institute and beyond to do business. We focus on maximum utilization of the large phygital pool of the institute's resources to help cater to every need of start-ups, right from fabrication labs for manufacturing to providing server/cloud space to IT/ITES genres of startups, and strive to be a 'one-stop-shop' for all our incubatees needs. Additionally, we regularly update startups about the government incentives that can be availed of by them. Also, as the nodal agency for startup Punjab and the MSME grant, startups can avail of these benefits through TBIF. We also have a dedicated student entrepreneurship cell (E-Cell) at IIT Ropar to cultivate the entrepreneurial culture among students.

Updates/Achievements: Following are the updates/ achievement of IIT Ropar TBIF from April 2022- March 2023:

More than five of our start-ups have grown into well-established businesses that employ a large number of people (more than 20) and have **garnered funding of up to Rs 1 crore or have annual revenues of more than Rs 5 crore.**

Yoboshu Private Limited, one of the firms we incubated, was recently ranked among the top 10 startups in India.

Product Launch, Vanix Technologies Private Limited: Product launch of one of our incubatee startups, Vanix Technologies Private Limited. Vanix is a manufacturer of customized FPGA and other digital processors/controller boards, striving sincerely to leave its legacy through its intelligent and capable camera controllers. Honourable Director IIT Ropar, Prof. Rajeev Ahuja, Dr. Atharva Poundarik, Director and Faculty-in-Charge of TBIF, IIT Ropar, Col. KS Rawat (Special Forces), and Virbhadra Singh Rawat (GOI) also graced the event with their presence. Besides this, the event was attended by more than 200 students, faculty, and staff from IIT Ropar.

My Start-up Journey with Mr. Rajat Jain, Founder and Director, Sunfox Technologies: TBIF, in association with E-Cell, the entrepreneurship club of IIT Ropar, celebrated National Startup Day on January 16. Mr. Rajat Jain interacted with students and encouraged them through his entrepreneurial journey. This event was attended by more than 250 students.





Navigating Startups and Fundraising in College by Mr. Prateek Agarwal, Investment Lead, First Cheque: A webinar was conducted on February 12, for navigating startups and fundraising by student startups. Around 75 students attended the talk.

Participated in the Progressive Punjab Investor Summit 2023: IIT Ropar-TBIF participated in the Progressive Punjab Investor Summit 2023, organized by Invest Punjab. The platform gave opportunity to growing startups at IIT Ropar TBIF to interact with the delegates from industries, MSMEs, senior bureaucrats of Punjab Govt. The honorable Chief Minister of Punjab, was briefed about the various deep tech startups at IIT Ropar TBIF, and their products, and interacted with a few of our incubate startups.



Start-up Conclave, Zeitgeist, IIT Ropar: IIT Ropar-TBIF in association with E-Cell organized the StartUp Conclave at the techno-cultural festival of the college, Zeitgeist, organized from March 23 to 26, 2023. The following events were conducted, which witnessed a footfall of over 300 students.

Idea Jam - An ideathon; 10+ teams pitched their startup ideas before an audience of 150 students

Intern Fair - Startups from varied domains were invited to interact with and hire interns from our college

How to Start a Startup Workshop was organized in association with Innovation Mission Punjab. The 3-hour workshop was attended by 80+ students. It was followed by an Idea pe Charcha session where aspiring entrepreneurs could discuss their startup ideas with the hosts.

Biz Arena - An opportunity for startups to raise funding from investors.



MOU signing with ICMR-CENTRE FOR INNOVATION AND BIO DESIGN (CIBioD): IIT Ropar-TBIF signed an MOU with ICMR-CENTRE FOR INNOVATION AND BIO DESIGN (CIBioD), a Healthcare Innovation Hub and Start-up Incubator established by ICMR at

PGIMER Chandigarh that aims to promote innovation in medical devices and instruments by creating a conducive ecosystem with the involvement of multiple premier technology institutes in the region in collaboration with the Postgraduate Institute of Medical Education and Research.

IIT Ropar TBIF has launched a structured 14-week Liftoff program in association with the Wadhwani Foundation for early-stage startups to get pitch-ready for various grants/startup schemes/pre-seed capital. This program will help boost the startup ecosystem in the region and beyond. It will help the startups refine their pitch through building a compelling value proposition, a scalable business model, and the financial stability needed to become investible.



Selected start-ups in TBIF also got the opportunity to actively engage with a delegation from the **British High Commission**, which appreciated the impact various technologies under their development would have.

Members of the E-Cell of TBIF engaged with **Boston Scientific** to conduct a session on healthcare and medical device entrepreneurship, which was attended by over 200 students.

Another event conducted by the cell on opportunities for Defence innovation was also well received. Additionally, a few selected TBIF start-ups had the chance to present at **Def Expo 2022.**

MOU Signing with SIDBI in pipeline so that startups can avail the benefits of MSMEs.

TBIF was invited for a mentorship session at NITTTR to guide the teachers on business incubation process and incentives offered by govt. to benefit startups.




DEPARTMENT OF SCIENCE AND TECHNOLOGY TECHNOLOGY INNOVATION HUB-AWaDH

AWaDH is a Technology Innovation Hub established at IIT Ropar by the Department of Science & Technology, Government of India in the framework of the National Mission on Interdisciplinary Cyber-Physical Systems in the domain of Agriculture & Water. With leading-edge knowledge, competency, and facilities, the hub aims to attract potential and harness the expertise available nationwide, thus fostering research innovation, world-class technology and product development. It coordinates across the country and builds linkages with research institutes and labs in India and abroad. AWaDH is working in close collaboration with industries to deliver commercial technology and products and build a vibrant innovation ecosystem by providing a reliable platform for technology-based start-ups and entrepreneurs.

Our Mission: "Environmentally sustainable and profitable agriculture, quality food for all, and the preservation of biodiversity"

The Intellectual Focus of the HUB:

We aim at providing technological solutions to the agricultural & water-related issues through the deployment of CPS in the following technology verticals:

- Food Processing Industry
- Rural Development
- Fisheries
- Skill Development & Entrepreneurship
- · Textiles industry
- · Electronic and IT
- Fertilizer industry
- Food and Public Distribution
- Atomic Energy
- NITI Aayog

We collaborate with entrepreneurs, industries, and academic institutions through different platforms which include Incubators, Outreach activities, CPS Courses, Internships, and SpINe(Spoke Institution Network).

AWaDH Outreach: We reach out to the academic and industry through our CPS courses, internships, conferences, workshops, competitions, and through many other ways.

SpINe (Spoke Institution Network): SpINe is a network of institutions interested in working jointly with the research issues identified at the AWaDH for meeting challenges faced by the Agriculture community from farm preparation to the end consumers. AWaDH IIT Ropar and institutes like NIT Srinagar, NIT Jalandhar, NIT Uttarakhand, IUST Awantipura, CSIO Chandigarh, GADVASU, PAU, PEC Chandigarh have signed an MoU for collaboration on academic and research activities in the areas of mutual interest including collaborative research works, joint supervision of Ph.D. students, joint workshops and seminars, etc. Through this initiative, we welcome meritorious students from various colleges to spend their semester(s) at IIT Ropar and pursue courses or projects in different domains of research.

It aims to promote startups, capacity-building, innovations, and research in various domains related to water/industry discharge assessment, treatment and management, advancement of land, resources and farm preparation, Agriculture automation and precision farming, harvesting, and post-harvesting, agribusiness marketplace and the application of the IoT systems in the domain of Agriculture and Water.

Team Structure & Management of AWaDH at IIT Ropar

Our Hub Governing Board consists of a perfect blend of industry and academia. **Prof. Rajeev Ahuja, Director at IIT Ropar,** is the chairperson-HGB.

AWaDH IIT Ropar is headed by **Dr. Pushpendra P. Singh**, who is the Project Director/Principal Investigator of the Technology Innovation Hub.

A group of faculty members from different departments is working in various R&D domains:

- Dr. Mukesh Saini and Dr. Neeraj Goel: Agriculture Automation & Information systems.
- Dr. Suman Kumar: Internet of Things Systems
- Dr. Neelkanth Nirmalkar : Water Treatment and Management
- Dr. L Vijay Anand: Water and Soil Assessment Processes
- Dr. L. Prabir Sarkar: Stubble Management Systems and Urban Farming
- Dr. Pushpendra P. Singh: Nuclear Applications in Agriculture and Water

To strengthen entrepreneurship and the start-up ecosystem, the institute has made significant contributions to shaping the Hub.

- IIT Ropar has provided support in the form of infrastructure (land and buildings), core facilities, and implementational structure, (value more than 50 crores).
- IIT Ropar has provided a 30000 sq. ft covered space for setting up AWaDH at a prime location on the IIT Ropar campus.
- AWaDH has been set up as a Section 8 company.
- The Section 8 company is in agreement with IIT Ropar and the president of India, acting through the mission.

R & D Domains

At AWaDH the R and D are classified into six major domains that are headed by the respective domain coordinators.

- Information Systems
- IoT Systems
- Water Treatment and Management
- Water and Soil quality Assessment Processes
- Stubble Management System and Urban Farming
- Nuclear Applications in Agriculture and Water

Agriculture Automation and Information Systems: This domain emphasizes sustainable data collection with affordable sensing infrastructure, data analysis with state-of-the-art AI/ML methods, and distribution of the information with an adaptive human-computer interface that is farmer friendly for decision support and task automation.

IoT Systems: IoT is the backbone of most agriculture CPS systems. It is not possible to scale IoT prototypes to large IoT systems automatically. Hence it is necessary to understand the problems associated with the system development processes before attempting to go from prototype to large-scale systems. This domain aims to build scalable IoT solutions for the management and tracking of agriculture products.

Water Treatment and Management: This domain deals with water quality assessment, treatment, and management using IoT-enabled nanobubbles based on advanced oxidation, aeration, aerobic digestion and dissolved air flotation unit in wastewater and comparing its performance with the existing methods.

Water & Soil Assessment Processes: This domain aims at developing and utilizing cyberphysical system-enabled tools to address environmental quality issues in agriculture and water domain that are of regional and national importance, including eco-friendly technologies for soil and groundwater contaminant remediation, impact assessment of natural and/or anthropogenic activities, and soil/water quality assessment.

Stubble Management Systems and Urban Farming: Stubble Management Systems and Urban Farming domain focus on the removal of stubble, post-harvest usage of waste created, urban farming, and development of new machines for agriculture. The aim is to create a novel and sustainable system for the Indian continent by reusing the crop residues (such as bio-char development or paper making) and optimizing the land resource usage in urban areas (such as vertical farming, hydroponics, etc.).

Nuclear Applications in Agriculture and Water: Nuclear application in agriculture and water aims to identify the sources of soil/water contamination by radioactive pollutants, determine the distributions of naturally occurring and artificially infused radioisotopes, and develop advanced chemical/physical methods and techniques to remove the radio-contamination from the soil and water, and food irradiation for self-life enhancement of Agri products.

About AWaDH Incubator: It is a one-stop-shop for entrepreneurial support and it aims to and aid, counsel, assist to excel and protect" the future entrepreneurs. During the incubation process, we provide all kinds of support including Seed funding, Market analysis, Assistance from experts, One-on-One Mentoring sessions, Specialized training workshops, Infrastructure support, Periodic assessment, Entrepreneurial community, Investment, and scholarship.

Details of AWaDH Incubators

The AWaDH incubator is a collaborative program that is designed to help budding entrepreneurs develop their businesses, especially in the initial stages. We provide them with all the aiding, counseling, assistance, and protection necessary to grow.

During the incubation process, we provide them with seed funding, market analysis, expert assistance, monitoring sessions, training workshops, infrastructure support, periodic assessment, investment, and scholarships. We aim to convert great ideas into reality without any hindrance related to the resources like funding or infrastructure and thus encourage entrepreneurship amongst the youth.

At IIT Ropar, there is a similar concept of a startup incubator called TBIF (Technology and

Business Incubation Facility) that also aims to provide every possible assistance to the future entrepreneurs of the country. To strengthen the entrepreneurship & start-up ecosystem at the Indian Institute of Technology Ropar and the country at large, the 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 the NIDHI TBI Scheme of the Department of Science & Technology, Government of India. It is housed in the Administration Block of the institute with a floor area of 10000 sq feet. The incubator has its own Board of Directors with Prof. Rajeev Ahuja (Director-IIT Ropar) as the Chairman.

The TBIF funds startups in the form of Soft loans and Seed grants. Funded mentorship support from our large pool of technical and business mentors is also provided for incubatees.

Both **AWaDH and TBIF** significantly coincide in terms of their mission to support startups and promote future entrepreneurs of the country. They are working diligently towards the common goal of creating a Start-up friendly ecosystem in the country. Moreover, their thrust areas, or the R and D domain also reflect their similar ideologies for startups. For instance, both, AWaDH and TBIF are big-time promoters of Agriculture and IT-enabled services.

Success Story

One of our startups Ubreathe visited the Department of Science & Technology (DST) and demonstrated their flagship product "Ubreathe Life" to Prof. Srivari Chandrasekhar, DST Secretary / Ministry of Science and Technology, this is what he said.

"I am a researcher in organic chemistry; to me, this technology looks fantastic to tackle the VOCs problem in indoor air pollution. All the best, and keep doing the awesome work"

About the meeting, Shubham Singh notes, "it was a fantastic opportunity for the Ubreathe team to showcase the innovation to India's leading scientist Prof. Chandrasekhar. All the nervousness vanished into thin air seeing Prof. Chandrasekhar's eagerness to know more about the innovation and the science backing up the technology. He believed that with the pressing issue of air pollution, the sustainable solution Ubreathe has come up with is the need of the hour. Ubreathe's upcoming solution for semi-open spaces would create a considerable impact on the lives of people.

We thank Dr. Ekta Kapoor, Head, Frontier and Futuristic Technologies Division for her support and encouragement.



Ubreathe has been chosen as one of the top 3 companies working in the air quality sector through the ICAC – Indian Clean Air Challenge, designed by the Ministry of Housing and Urban Affairs.

Air pollution is undoubtedly a pressing issue in the country. iHub - AWaDH IIT Ropar along with the Ubreathe aims to solve this problem by providing sustainable and nature-inspired solutions for this massive reoccurring issue.

Ubreathe is also looking at semi-open infrastructures such as Metro stations, to provide sustainable solutions for fighting air-related issues in the country.

Ubreathe plans to accomplish this goal of this clean air for all and combat the air-related issues in the country through the ICAC, with the support of Social Alpha. iHub-AWaD IIT Ropar stands strong with you.



IIT Ropar, and TIH- AWaDH in association with Round Glass Foundation planted 1000 trees on the occasion of world environment day with a mission to combat climate change and contribute toward this social responsibility of restoring Punjab's green cover. The state has one of the lowest forest covers in India, less than 4 percent, and by implementing reforestation activities for creating a greener and more vibrant Punjab.



Our efforts were recently appreciated by NM-ICPS, the Government of India. iHub – AWaDH, IIT Ropar has been ranked as one of India's top 5 Technology Innovation Hubs, and we couldn't be more grateful to all those who contributed to this success.



- Celebration of National Technology Day 2022 at IIT, Ropar. The day was celebrated to commemorate India's scientific advancement.
- The Regional Outreach Bureau and Press Information Bureau (PIB), Ministry of Information and Broadcasting, Government of India, Chandigarh invited Dr. Pushpendra P. Singh, Project Director, iHub – AWaDH, IIT Ropar. He talked about the "Role of Technology in Saving Water while Diversifying Agriculture Methods", and how TIH AWaDH helps farmers in direction.



 On the occasion of World Intellectual Property Day, iHub – AWaDH, IIT Ropar Project Director Pushpendra P. Singh spoke at TiE Chandigarh TiEcon22 about the innovations the R&D perspective.



Seminar Series

CSIO CSIR in association with TIH - AWaDH Indian Institute of Technology, Ropar has organized a seminar #Series in the framework of 'Vigyan Sarvatra Pujyate' (विज्ञान सर्वत्र पूज्यते) on "Food Quality Analytics and the Role of AI" from February 22-25, 2022.

Students, researchers, faculty, and industry professionals keen on learning about new technologies and advancements in food quality and analytics can register for this seminar series.



During the seminar series, expert researchers from academia and industry were invited to talks via online platforms.

On the occasion of the national mentoring month, two of our domain coordinators Dr.Dhiraj Kumar Mahajan, Srikant Padhee, and Dr. Asad H. Sahir shared their experiences.

This is a story about the inspirational role of mentors and the impact they can have in creating opportunities that may not have existed in the first place. In May 2019, Dhiraj Kumar Mahajan, Srikant Padhee, and Dr. Asad H. Sahir visited Srinagar and Pulwama for a World Bank-MHRD Project(TEQIP-IVA), where they heard the concerns of students about not being able to participate in Summer Internships. In January 2020, Dr. Dhiraj took the initiative of inviting students for internship projects to the Indian Institute of Technology, Ropar; and Dr. Dan Sweeney from MIT D-Lab organized a design thinking workshop for participating students.

Through these initiatives, interactions were initiated. In May 2021, Dr. Pushpendra P. Singh, Project Director - TIH - AWaDH took a generous decision of providing scholarships to a group of students from NIT Srinagar and IUST Pulwama on participating in a certificate course in

Cyber-Physical Systems (taught by Dr. Neeraj Goel and Dr. Mukesh Saini). Along with the support of Dr. Asma Iqbal (NIT Srinagar), it was my pleasure to acknowledge that two groups of students have presented their work in reputed conferences on applications of cyber-physical systems; one on Kale (Sabahat, Mahshida, Sikha, and Mariya) at the 2021 AICHE Foodie Conference and the other on saffron (Sartaj, Khubaan, Shariq, and Hanan). As an educator, they feel privileged to have colleagues like Drs. Dhiraj, Dan, Srikant, Pushpendra, Asma, Neeraj, and Mukesh) whose decisions have helped create opportunities for mentoring students and connecting with international researchers.



NABARD - National Bank for Agriculture and Rural Development in association with the Indian Institute of Technology, Ropar, and TIH - AWaDH organized a one-day workshop-cum-sensitization program for fpos in Punjab.



Indian Institute of Technology, Ropar, NIT Jalandhar, and NIT Srinagar have signed an MoU for collaboration on academic and research activities in the areas of mutual interest including collaborative research works, joint supervision of Ph.D. students, joint workshops and seminars, etc.

The MoU was signed by Prof. Rajeev Ahuja, Director, IIT Ropar and Prof Rakesh Sehgal, Director, NIT Srinagar, and Professor R. K. Garg, Director, Dr. B R Ambedkar National Institute of Technology, Jalandhar.

The MoU is a part of IIT Ropar's initiative to welcome meritorious students from NITs to spend their final semester(s) at IIT Ropar, pursue courses, and do a project. The students will go

through a rigorous selection process, and subject to their continued excellence, will be considered for early admission to Ph.D. programs at IIT Ropar.

"Each institution will nominate one of its members as its representative in charge of the cooperative program. Individual programs of work under this Memorandum will be jointly planned and conducted by the nominees of both parties," read the MoU.



One of the domain coordinators of TIH- AWaDH Dr. Neelkanth Nirmalkar has made a Data science driven supply chain for agricultural products that can bring prosperity to farmers, ensure healthy and fresh food for end consumers, and requirement for food safety in India. More companies should join hands in this domain so the benefit is visible all across the country.



Indian Institute of Technology, Ropar signed an MoU with the National Institute of Technology, Uttarakhand (NIT, UK) for establishing a satellite center under IIT Ropar – Technology and Innovation Foundation for the TIH - AWaDH, established by the Department of Science and Technology India for taking up the research through the technology and innovations in the domain of, but not limited to, sustainable agriculture and water in the framework of National Mission on Interdisciplinary Cyber-Physical Systems (NM – ICPS).

The upcoming establishment at NIT UK aims to provide a promotion to start-ups, capacitybuilding, innovations, and research in various domains related to Water/industry discharge assessment, treatment, and management, Advancement of land resources and farm preparation, Agriculture automation, and precision farming, Harvesting and post-harvesting, Agribusiness marketplace, The application of the Internet of Things (IoT) systems in the domain of Agriculture & Water and last but not the least, Bioenergy and Biomaterials.

INITIATIVES FOR THE SKILL DEVELOPMENT AND INNOVATIONS

Online Internship Carnival AIC-2021

Agriculture and Water Technology Development Hub (AWADH) IIT Ropar had tied up with a firm named Dassault Systemes to support an eight-week long online internship carnival. The internships were arranged for the design and engineering students. The carnival was themed around technovations in the domain of agriculture and water. There were 100 interns divided into 20 teams who participated in this competition. They got access to a 3D platform on the cloud powered by brand applications like CATIA, SIMULIA, DELMIA, ENOVIA, BIOVIA, NETVIBES, and dedicated training sessions from the design and simulation experts. The winners were offered paid internships for 6 months at IIT Ropar which they can do as per their

academic schedule and convenience. They were also provided with travel allowance and accommodation at IIT Ropar to explore the possibilities of future collaboration with the mentor faculty members. The idea behind this endeavor was to encourage and enable extensive interdisciplinary research in the domains of Agriculture and Water.

We have achieved great success from the online internship carnival as we received many good ideas which got patentable. We have filed 16 National Patent and 04 National Patent were granted

Online Internship Carnival AIC 2022

Agriculture and Water Technology Development Hub (AWADH) IIT Ropar started an eightweek long online internship carnival. There were 365 interns divided into 73 teams who participated in this competition. The winners were offered paid internships for 6 months at IIT Ropar which they can do as per their academic schedule and convenience. They were also provided with travel allowance and accommodation at IIT Ropar to explore the possibilities of future collaboration with the mentor faculty members. The idea behind this endeavor was to encourage and enable extensive interdisciplinary research in the domains of Agriculture and Water.

Artificial Intelligence and Cyber-Physical Systems (AICPS) Course 2021

We witnessed significant advances in Artificial Intelligence (AI) and Cyber-Physical Systems (CPS), and consequently, a large number of courses/training programs were introduced with a focus on machine learning (ML) tools. In practice, these algorithms need to be supported by system-level interdisciplinary knowledge. We conducted a 9-week online certificate course in the month of June 2021 on AI and CPS for agriculture automation for employability enhancement of students and recent graduates. The course was facilitated by faculty members who have extensive experience in teaching, research, and industry. The course included 36 contact hours for lectures and 18 hours of labs.

Artificial Intelligence and Cyber-Physical Systems (AICPS) Course 2022

We witnessed significant advances in Artificial Intelligence (AI) and Cyber-Physical Systems (CPS), and consequently, a large number of courses/training programs were introduced with a focus on machine learning (ML) tools. In practice, these algorithms need to be supported by system-level interdisciplinary knowledge. We conducted a 9-week online certificate course in the month of May 2022 on AI and CPS for agriculture automation for employability enhancement of students and recent graduates. The course was facilitated by faculty members who have extensive experience in teaching, research, and industry. The course included 36 contact hours for lectures and 18 hours of labs.

Agriculture and Cyber-Physical Systems (ACPS) Course 2022

IIT Ropar - Technology and Innovation Foundation (AWaDH) offered an online course on "Agriculture Cyber-Physical Systems". The course was free for all students coming from AWaDH - SpINe (Spoke Institutes Network).

The prime objective of this course was to introduce the applications of cyber-physical systems for agriculture automation, including sensing, analysis, and control through various techniques.

This course included the following Topics:

- 1) Basics of Agriculture Data Analysis
- 2) Predictive modeling and Anomaly Detection in Agriculture Data
- 3) Agriculture Data Acquisition
- 4) Case studies



• FACULTY & STAFF



YEAR WISE TOTAL NUMBER OF FACULTY



DEPARTMENT WISE FACULTY 2022-23





IN POSITION - FACULTY & STAFF

Faculty	Visiting Faculty	Adjunct Faculty	Group A	Scientist Officer	Technical Staff	Administrative & Academic Staff
167	00	02	12	-	53	56

APPOINTED DURING 2022-23 (FACULTY & STAFF)

Faculty	Visiting Faculty	Adjunct Faculty	Group A	Scientist Officer	Technical Staff	Administrative Staff
10	00	02	3	-	1	2

ID No	Name	Designation	Department	Joining Date
10199	Dr. Kishant Kumar	Assistant Professor Gr. I	Chemical Engineering	08.07.2022
10200	Dr. Ravi Kumar	Assistant Professor Gr. I	Humanities and Social Sciences	20.07.2022
10201	Dr. Basant Subba	Assistant Professor Gr. I	Computer Science & Engineering	25.07.2022
10202	Dr. Rajendra Kumar Munian	Assistant Professor Gr. I	Mechanical Engineering	01.08.2022
10203	Dr. Jagpreet Singh	Assistant Professor Gr. I	Computer Science & Engineering	02.08.2022
10204	Dr. Santosh Kumar Vipparthi	Assistant Professor Gr. I	Electrical Engineering	08.08.2022
10205	Dr. Jayaram Valluru	Assistant Professor Gr. I	Chemical Engineering	16.09.2022
10206	Dr. Rajiv Kumar	Assistant Professor Gr. I	Metallurgical and Materials Engineering	23.12.2022
10207	Dr. Santosh Kumar Meena	Assistant Professor Gr. I	Chemical Engineering	26.12.2022
10208	Dr. Aslam Chandbhai Shaikh	Assistant Professor Gr. I	Chemistry	23.02.2023
50004	Ms. Gurdish K Sandhu	Adjunct Faculty	CARDS	22.08.2022
50009	Col. Prabir Sengupta	Adjunct Faculty	CESARDS	09.03.2022

APPOINTED DURING 2022-23 (FACULTY & STAFF)

INTERNAL FACULTY APPOINTED IN HIGHER GRADES DURING 2022-23

Name	Designation	Department	Date
Dr. Kamal Kumar Choudhary	Associate Professor	Humanities and Social Sciences	05.04.2022
Dr. Deepti Bathula	Associate Professor	Computer Science & Engineering	
Dr. Puneet Goyal	Associate Professor	Computer Science & Engineering	
Dr. Balwinder Singh	Associate Professor	Computer Science & Engineering	05.04.2022
Dr. Vishwajeet Mehandia	Associate Professor	Chemistry	05.04.2022
Dr. K. C Jena	Associate Professor	Physics	05.04.2022
Dr. Pushpender Singh	Associate Professor	Physics	05.04.2022
Dr. Sankara Raju Kosuru	Associate Professor	Mathematics	05.04.2022
Dr. Tapas Chatterjee	Associate Professor	Mathematics	05.04.2022
Dr. Arun Kumar	Associate Professor	Mathematics	05.04.2022
Dr. Sachin Kumar	Associate Professor	Mechanical Engineering	05.04.2022

RESIGNED OR RELIEVED FACULTY DURING 2022-23

ID No	Name	Designation	Department	Date of Relieving
10110	Dr. Sourav Bhattacharya	Assistant Professor	Physics	19.05.2022
20039	Prof. R.G Pillay	Visiting Professor	Physics	30.04.2022
20035	Prof. R.P Chhabra	Visiting Professor	Chemical Engineering	25.05.2022

10154	Dr. Shirshendu Das	Assistant Professor	Computer Science & Engineering	30.11.2022
10144	Dr. Swathi Krishna S.	Assistant Professor	Humanities and Social Sciences	27.12.2022
10083	Dr. Ansu Louis	Assistant Professor	Humanities and Social Sciences	31.01.2023 (deceased)
10029	Prof. P K Raina	Professor	Physics	28.02.2023 (Superannuated)

FACULTY ON EXTRAORDINARY LEAVE/DEPUTATION / SABBATICAL

Name	Designation	Department	Date	Nature of Leave
Dr. M.V Gunturi		Computer Science & Engineering	26.02.2023 - 31.12.2023	Extraordinary leave
Dr. Rohit Y Sharma	Associate Professor	Electrical Engineering	05.09.2023 - 30.06.2024	Extraordinary leave

FACULTY ON LIEN

Sr. No	Name	Designation	Date of Relieving	Lien Valid Upto
1.	Dr. Narayanan C. Krishnan	Assistant Professor, CSE	20.12.2021	20.12.2023
2.	Dr. Sourav Bhattacharya	Assistant Professor, Physics	19.05.2022	18.05.2024
3.	Dr. Shirshendu Das	Assistant Professor, CSE	30.11.2022	30.11.2023

STAFF ON DEPUTATION

Name	Designation	Date of Relieving	Nature of Leave
Sh. Ravinder Kumar	Joint Registrar (on deputation to NIT Delhi as Registrar)	30.06.2022	-NA-

STAFF APPOINTED DURING 2022-23

Sr. No	Employee Code	Name	Designation	Category	Group (A/B/C)	Department	Date of Joining
1.	30154	Sh. Pardeep Kumar	Deputy Registrar	Regular	A	Director's Secretariat, Legal Cell & RTI	13.12.2022
2.	30155	Sh. Mukesh Kumar	Deputy Registrar	Regular	А	Accounts & IR	22.12.2022
З.	30156	Sh. Deepak Kumar	Assistant Student Counsellor	Regular	A	Student Affairs	22.03.2023
4.	4074	Ms. Manisha	Library Professional Trainee	Contract	С	Library	11.04.2022
5.	4075	Sh. Pankaj	Library Professional Trainee	Contract	С	Library	13.04.2022
6.	4081	Sh. Manpreet Singh Bedi	Assistant Registrar	Contract	А	Works & Estate	06.07.2022
7.	4082	Lt. Cdr Nishbinder Singh (Retd.)	Assistant Registrar	Contract	A	Relieved	07.07.2022
8.	4085	Sh. Ajay Kumar Srivastav	Project Assistant (Accounts & Purchase)	Contract	С	Student Affairs	10.10.2022

9.	4086	Sh. Suryanaraya n Pardia	Consultant (Mass Spectrometry Facility)	Contract	В	CRF	10.10.2022
10.	4087	Sh. Jagjit Singh	Project Engineer (Civil)	Contract	В	Works & Estate	21.10.2022
11.	4088	Sh. Vishal Rana	Project Trainee (IT)	Contract	С	п	28.11.2022
12.	4089	Sh. Umesh	Project Trainee (IT)	Contract	С	IT	01.12.2022
13.	4090	Ms. Sapna Rani	Project Assistant (Accounts & Purchase)	Contract	С	R&D	15.12.2022
14.	4091	Sh. Satbir	Project Assistant (Accounts & Purchase)	Contract	С	R&D	21.12.2022



STAFF APPOINTED DURING 2022-23

STAFF PROMOTED THROUGH LDE/DPC DURING 2022-23

Sr. No	Employee Code	Name	Designation	Department	Date of Joining
1.	30031	Sh. Vipin Kumar	Assistant Registrar	R&D, Hindi Cell, KV	21.03.2023
2.	30021	Ms. Amrit Varsha	Assistant Registrar	Academics	21.03.2023
3.	30028	Sh. Abhinav Raj	Assistant Engineer	Works & Estate	01.03.2023

RESIGNED OR RELIEVED STAFF DURING 2022-23

Sr. No	Employee Code	Name	Designation	Date of Leaving	Remarks
1.	30089	Sh. Puneet Garg	Assistant Registrar	26.04.2022	Regular
2.	-	Ms. Neeru Chhabra	Chief IT Manager	16.06.2022	On Contract
3.	30084	Sh. Gautam Sharma	Assistant Registrar	10.08.2022	Regular
4.	4013	Sh. Subodh Sharma	Training & Placement Manager	12.08.2022	On Contract
5.	4072	Dr. Nilotpal Singha	Consultant (Mass Spectrometry Facility)	12.08.2022	On Contract
6.	30101	Sh. Rajib Kumar Dash	Junior Lab Assistant	30.11.2022	Regular
7.	4082	Lt. Cdr Nishbinder Singh (Retd.)	Assistant Registrar	26.12.2022	On Contract
8.	4012	Sh. Deepak Kumar	Counsellor	21.03.2023	On Contract

STAFF ON LIEN

Sr. No	Name	Designation	Date of Relieving	Lien Valid Upto
1.	Sh. Puneet Garg	Assistant Registrar	25.04.2022	25.04.2024
2.	Sh. Gautam Sharma	Assistant Registrar	10.08.2022	10.08.2023
3.	Sh. Rajib Kumar Dash	Junior Lab Assistant	30.11.2022	30.11.2023
4.	Sh. Punit Kumar	Junior Lab Assistant	15.12.2021	15.12.2023







ADMISSION OF INTERNATIONAL STUDENTS

The international students' admission at IIT Ropar has been very encouraging in the AY 2022-23. There has been a steep rise in the total strength of international students to 23 in the Masters/ Ph. D programme of IIT Ropar. IR promotes students from Pan African, ASEAN, SAARC and IORC to join the institute in a proactive manner.

In addition, three international students have been shortlisted for SII full scholarship based on their performance in PRAGATII Exam. In which Study in India will pay max of USD 3200 or INR 2,50,000 to the institute for the studies of the students (tuition, hostel, mess etc.).

MoU SIGNING

Tarsus University

An MoU between IIT Ropar and Tarsus University was signed by Prof. Rajeev Ahuja, Director, IIT Ropar, and Prof. Orhan Aydin on 28/12/2021. The main objective of this MoU 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.

Dalhousie University

A team from Dalhousie University consisting of the following delegates visited IIT Ropar for signing the MoU on October 13th, 2022.

- 1. Dr. Deep Saini, President and Vice-Chancellor
- 2. Dr. Prachi Kaul, SICI Director
- 3. Mr. Matt Hebb, Vice President Government & Global Relations, Dean Architecture and Planning
- 4. Dr. Balakrishnan Prithiviraj, Associate Vice President Global Relations
- 5. Dr. Andrew Rau Chaplin, Dean of the Faculty of Computer Science
- 6. Dr. Graham Gagnon, Dean of the Faculty of Architecture & Planning
- 7. Dr. Miriam Gordon, Assistant Dean International, Faculty of Agriculture
- 8. Dr. Shashi Gujar, Assistant Professor, Departments of Pathology, Biology, and Microbiology & amp; Immunology

The MoU was signed by Prof. Deep Saini, President and Vice Chancellor, Dalhousie University and Prof. Rajeev Ahuja, Director, IIT Ropar on 13th October 2022. The main objective of the MoU is extent to develop a Joint doctoral program and Exchange of scientist and information material includes prospectuses, course outlines, teaching materials, and reference materials.

MoU signing with South Dakota State University, USA

MoU between IIT Ropar and South Dakota State University was signed on 11th April 2022 followed by a workshop with faculty members of IIT Ropar.

The delegation from SDSU was comprised of following dignitaries:

1. Dr. Rajesh Kavasseri, Interim Dean and Associate Dean for Research, South Dakota State University.

- 2. Dr. Jon Stauff, Assistant Vice President for International Affairs, South Dakota State University
- 3. Dr. Saikat Basu, Assistant Professor, Department of Mechanical Engineering, South Dakota State University



MoU with Wroclaw University of Science and Technology

IIT Ropar has entered an MoU with Wroclaw University of Science and Technology, Poland in February 2022. The main objective of MoU 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.

MoU with Sharman Foundation

IIT Ropar has signed an MoU with Sharman Foundation, a company incorporated under the laws of Texas, USA on 5th May 2022 in which around 30 students will be getting some financial support from Sharman Foundation in the term of scholarship.

MoU with University of Oulu, Finland

IIT Ropar has entered into an MoU with University of Oulu, Finland on 23 Jan 2023. MoU was signed by Prof. C.C. Reddy, Dean, International Relations, IIT Ropar and Dr. Mirja Illikainen, Dean, University of Oulu, Finland. The Joint research activities include physical simulation, medelling and characterization, design, processing, and advanced characterization.

SELECTION OF IIT STUDENTS UNDER UNDER MITACS, FOR GLOBALINK RESEARCH AWARD (GRA) FUNDING:

IIT Ropar's three students (Ms. Gopagoni Sreya, Rishabh Jain, Pankaj Suthar) have been selected for research placements at Dalhousie University, Canada under Mitacs, for Globalink Research Award (GRA) funding. The value of the fellowship is \$6000 per student through the MITACS program and the duration is ideally 12 weeks.

VISITORS TO IIT ROPAR

Delegation from Embassy of Sweden:

A delegation from the Embassy of Sweden visited IIT Ropar on **12th April 2022** for discussion on possible collaboration with IIT Ropar and Sweden Universities.

The delegation was comprised of following dignitaries:

- 1. Mr. Per-Arne Wikström, Counsellor, Innovation and Science, Office of Science and Innovation, Embassy of Sweden, New Delhi.
- 2. Ms Maria Lavonius, Embassy of Sweden, New Delhi



Sri Lanka Education Fair

For the promotion of admissions of International Students, Dean-IR&AA attended one of the Education Fairs in Sri Lanka organized by Study in India team.



French Embassy Delegation visit:

A delegration from the French Embassy visited the campus for discussing possible collaborations between Indian and French Institutes on joint, dual and exchange opportunities.

The delegation consisted of following dignitaries:

- Dr. Fabien CHAREIX, Attache University and Scientific Cooperation Science & Higher Education, French Embassy in India.
- Miss Leah PAUL, Project Manager, University Cooperation French Embassy in India.
- Mrs. Nidhi CHOPRA Manager Campus France Chandigarh.
- Mr. Baptiste FONDIN, Project Manager, IFI.

• N+1 Engineering Network France delegation visit: October, 2022

The delegation consisting of the following delegates visited IIT Ropar.

- 1. Dr. Georges Santini Executive Director Network N+I.
- 2. Dr. Tania GIDEL Director of International Affairs SupBiotech.
- 3. Ms. Lara Hajj-Sleiman Officer International Relations SupBiotech.
- 4. Dr Mrs. Nazima Canda Director of International Relations EPITA.

The central purpose of this meeting is to foster academic exchange and cooperation between the two institutions as both parties are committed to fostering joint academic programmes in the field of education and research and are open to any form of potential cooperation.

IIT Ropar at India-UNESCO-Africa Hackathon

IIT Ropar participated in India-UNESCO-Africa Hackathon 2022 organized by Edcil (India) Ltd for a wider reach among the African community and International community as a whole to achieve in its mission of Internationalization.

About 22 countries participated in the event that brought students, educators, teachers, and the research community together to serve as a facilitator and tackling community challenges

The participation of IIT Ropar along with the International students from Africa who are studying in the Institute will prove to be giant leap towards International trendsetter.

International Students Get-toether

IR Office organized get together of international students on 3rd October, 2022 in which head of departments, Deans and Director, IIT Ropar participated along with international students. In this meeting, the foreign students got a chance to interact with the Director and Deans.

Others

- 1. This year IR office took initiative to offer Half-time Teaching/Research Assistantship (HTRA) to the international students.
- 2. In order to explore more collaboration between IIT Ropar and foreign Universities, we are conducting virtual meetings regularly including meeting with Swinburne University of Technology for the discussion on renewal of joint Ph.D programme.



Our Institute has been actively working to sustain the bonding and to ensure greater participation of its Alumni in its academic and extra activities through various initiatives in association with the IIT Ropar Alumni Association (founded in Feb. 2013) and Alumni Student Relation Cell team such as alumni student mentorship program and invited talks by alumni. Our alumni strength has now expanded to 2535 (UG: 1549, PG: 736 and PhD: 250)



Few major events conducted are mentioned below:

Alumni Reunion 2022 for Batch 2020-21

Date of event-30th Dec 2022

Venue – Auditorium Hall, IIT Ropar

The alumni meet is to reconnect with the Alumni and celebrate their success and achievements. The Alumni association of IIT Ropar organized "Alumni Meet 2022" along with

the Academics department on 30th Dec 2022. More than 90 alumni joined the meet. Many graduating B.Tech, M.Tech, M.Sc., and PhD students also attended the Alumni Meet. The event began with distribution of sash to all alumni at 2:00 PM in the Auditorium Hall. It was followed by the welcome address by Associate Dean (UG) and the degree certificates distribution for the last two Covid19 affected batches. Thenceforth Dean (IR&AA) addressed our alumni and a presentation about structure and activities of Alumni Association was made. At last, a vote of thanks was given by AD (PG&R).



2. Emerging Young Alumni Awards 2023

Date of Event	-	24th Feb 2023
Venue	-	E-Meet

Our Institute has continued to take many initiatives to facilitate and foster strong positive alumni relationships. We hosted many alumni-student activities online/offline and received overwhelming responses from both the alumni as well as students. We have also started conducting Alumni meets where alumni could reunite with their batchmates to reminisce their memories and get to know where they are currently and also provide an opportunity to connect with each other professionally to build a well built career. Moreover we recently organized **Emerging Young Alumni Awards 2023** held on 24th February 2023 on the occasion of The Foundation day of IIT Ropar. Alumni Affairs and alumni students' relationship cell organized the event .There were more than 30 entries received apropos to EYAA 2023 out of which, 16 alumni were shortlisted. Adding to this there were three nomination categories in the awards mentioned below:

1. Entrepreneurship/Start-up related Category

- 2. Public services/Academia/Socialist related Category
- 3. Industry/MNC related Category

Considering those nominations, the following three alumni members were recommended to be given IIT Ropar Emerging Young Alumni Awards 2023 for the corresponding above mentioned categories.

- 1. **Mr. Arpit Jain** (Founder & CEO at GreedyGame) Completed B.Tech EE in 2012 for Entrepreneurship/Startup related Category
- 2. **Mr. Manjeet Kumar Yadav** (IAS 2020, OSD-Govt. Of West Bengal) Completed B.Tech ME in 2014 for **Public services/Academia/Socialist related Category**
- 3. **Mr. Lalit Verma** (Co-CTO at Zomato) Completed B.Tech CS in 2015 for **Industry/MNC** related Category

IIT Ropar has a very strong relationship with its alumni. The Institute is proud of its Alumni and their achievements. Following are the alumni selected for EYAA 2023.

IIT Ropar has very strong relationship with its alumni. The Institute is proud of its Alumni and their achievements. IIT Ropar Distinguished Alumni Awards 2023 as below:



Mr Manjeet Kumar Yadav IAS officer on Special Duty Govt of West Bengal selected for Public services /Academia/ Socialist related Category



Mr Arpit Jain Founder & CEO – GreedyGame selected for Entrepreneurship/ Startup related Category



Mr. Lalit Verma Co-CTO at Zomato selected for Industry/MNC related Category



• EVENTS & ACTIVITIES Held during 2022-23





As part of India's G20 Presidency for 2023, IIT Ropar hosted the "2nd Education Working Group Meeting' (EdWG)" in Amritsar during March 15-17, 2023 at Majestic Khalsa College on broad theme "Promoting Research & Innovations Through

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Collaboration". The event was focused on the identification of relevant policies and best practices for research and innovations from the deliberations of G20 member nations. The G20 delegates got the first hand immersive experience of the vibrant culture, art, cuisine and warmth of Punjab.



The participants in the meeting also included representatives of international organizations such as UNESCO, UNICEF, the World Bank and the Organisation for Economic Co-operation and Development (OECD), among others. The event emphasized research and innovation as well as the effect of collaboration on the performance of G20 member nations.

The key sessions on research and innovations would help reduce inequalities inside and between countries, will promote innovations for

sustainable agriculture for getting high yield and reducing food waste, will enlarge the role of academia in cheap and sustainable energy research and innovation and facilitate innovations for environmentally conscious and accountable industrialization.



The G20 delegation, in an attempt to perceive the rich heritage, paid obeisance at the Golden Temple. The SGPC honoured the delegation with 'Siropa' (robe of honour), model of Sri Harmandar Sahib and books related to the Sikh faith. Before offering prayers, the delegation visited the community kitchen at the shrine.

The discussions stressed on the cultural exchange showcasing the richness of India and the warm ambience. G20 EdWG delegates enjoyed the excursion filled with exuberant vibes and sampled the scrumptious flavors of Punjab. These 3 days of incredible memories of Amritsar promised to last a lifetime.



10 Professors and one Post-Doc Researcher from Indian Institute of Technology, Ropar have made it to the top 2% of scientists in a survey conducted recently by Stanford University and published by Elsevier





20TH ISME CONFERENCE



Department of Mechanical Engineering has organised the 20th ISME Conference on Advances in Mechanical Engineering in hybrid mode to keep abreast of latest developments in the industry. The conference was inaugurated by Chief Guest, Dr. Samir V. Kamat, Distinguished Scientist & Director General - Naval Systems & Materials (NS&M), DRDO. Shri Prateek Kishore, Outstanding Scientist

and Director, Terminal Ballistics Research Laboratory, (TBRL), DRDO and Prof. S. G. Deshmukh, Deputy Director (Operations), IIT Delhi were the Guest of Honour. More than 150 research papers were received across the length and breadth of country in the specialized fields of Mechanical Engineering such as Design, Thermal & Fluids, Materials, Manufacturing and Industrial Engineering, and other interdisciplinary and emerging areas.



Prof. Rajeev Ahuja, Director IIT Ropar, inaugurated the Central Library, spread in 24000 sq. ft area, at the campus. The library houses more than 25k books, more than 7000 journals and thousands of e-books. The library has bibliographic database which includes scopus, Web of Science, MathSci Net to name a few. It has a seating capacity for around 200 people at a time. It has Libsys software for library automation, smart check-in and checkout app available.







IIT Ropar celebrated National Technology Day to commemorate and salute the hard work of our scientists and innovators for bringing positive change in the lives of the people and making Aatma Nirbhar Bharat. On this occasion Sh. H. B Srivastava, Director General, Technology Management DRDO was the Chief Guest and addressed on the topic "Defence Research-Challenges and Opportunities." He urged the students to devote their energy and time in learning next-generation technology.



IIT Ropar in association with RoundGlass Foundation, in its continuous endeavour towards shaping a sustainable future, celebrated World Environment Day (WED) 2022 by planting 1000 saplings in the Institute, focusing on the UN 2022 theme "OnlyOneEarth" and the National initiative of 'Lifestyle for the Environment - LiFE Movement'. IIT Ropar is committed to continue its journey to improve biodiversity, mitigate climate change, enhance environmental care, optimize resource and energy efficiency, solid waste utilization, and significantly reduce plastic waste for improving the quality of lives. Faculty, Students and Staff participated in this event.



D LECTURE BY ACHARYA PRASHANT



IIT Ropar hosted an interactive webinar with Acharya Prashant. He is an acclaimed Vedanta exegete and author of over 80 books. IIT Ropar students interracted with him through the webinar which was a discourse on various life-topics. His spiritual camps held all over the country, and abroad, under his guidance, provide seekers the opportunity to undergo spiritual and meditative transformations of the highest kind.



The 8th International Day of Yoga was observed on 21st June 2022 (Tuesday) at IIT Ropar with great enthusiasm and vigor. It was scheduled in the morning. IIT Ropar fraternity attended the address by Honorable Prime Minister. At 7:00 am in the morning, the Yoga session began, in which the IIT Ropar fraternity had the opportunity to participate in Yoga class from the best Yoga teacher Dr. Rajiv Kumar Uppal, General Secretary - Chandigarh Yoga Association, who is practicing multiple styles of Yoga



including Power Yoga and Kriya Yoga. Prof. Rajeev Ahuja, Director IIT Ropar, faculty, staff and students performed Asanas in the hall and other have joined the yoga session through live streaming on you tube channel of IIT Ropar. The theme for this year's International Yoga Day was "Yoga for humanity."





Mock drill and fire safety training was organised at IIT Ropar to spread awareness about fire safety in the campus. A team from the Fire Brigade Department, Municipal Council, Ropar gave the drill. Faculty, staff and students participated in the event. The drill was conducted to sensitize every employee and preparing them for the worst, considering the fact of emergency situations like flood, fire, chemical disaster, earthquake or any other such natural incident housing the potential

to cause injury and death. This mock drill incubated the vibes of emergency preparedness, optimum utilization of resources, mobilization of coordinated activities and related aspects.

EDUCATION SUMMIT ORGANISED BY NEWS18

Professor Rajeev Ahuja, Director IIT Ropar shared the need of strong base of Basic Sciences at new Technology Institutes for bringing innovation and Entrepreneurship culture in India, while speaking at Education Summit organised by News18 Punjab. He gave his insights on "Future of Technical Education". The Summit provided a platform for leading Indian Higher Educational Institutions to discuss, deliberate and share insights on strategies, success stories and best practices in implementing the NEP 2020.





Meritorious students of Rupnagar District, who have excelled in their Xth and XIIth examination in year 2021-22, visited IIT Ropar along with their parents. Prof. Rajeev Ahuja, Director IIT Ropar addressed and congratulated the students for their achievement. The students had a wonderful time to experience the visit to labs in IIT Ropar. They got a chance to explore various exhibits in detail in Chemistry, Mechanical and Electrical department. The students were fascinated



to see the infrastructure and designs of the campus and many of them who aspired to be engineering inquired about the process to get enrolled in IIT Ropar.





IIT Ropar celebrated Engineers Day, commemorating the birth anniversary of India's greatest engineer, Bharat Ratna Mokshagundam Visvesvaraya and facilitates the technical staff of the Institute. Sh. Vikas Garg IAS and Ms. Bhawna Garg IAS were the Guests of Honour during the event. They recognized the pivotal role of engineers and technical supporting staff in the growth of Institute.



IIT Ropar student community organized Leadership Summit from 14-16 October 2022 inviting various stakeholders from the industry, academia and administration to discuss and take stock of various advancements and challenges facing different sectors. The first day talk was presented by Ms. Shailender Kaur IFS, Director Horticulture and she remarked on the persistent problem of brain drain in our society anshe also stressed on the importance of retaining the young talent in the country. The third day of Leadership Summit witnessed the talks by Prof. Rajeev Ahuja, Director, IIT Ropar and Mr. Somveer Anand, Innovation Mission Director, Punjab emphasising on the importance of bridging the gap between UG & PG/PhD and its role in training students for core companies.







Vigilance Awareness Week was observed at IIT Ropar, on the theme "Corruption free India for a developed Nation". Prof. Rajeev Ahuja, Director IIT Ropar, inaugurated the Vigilance Awareness Week by administrating pledge to faculty and staff. Dr. Somdev Kar, CVO, IIT Ropar sensitised all employees towards ethical business practices and

effective measures taken by the Institute to foster a culture of honesty and integrity for good corporate governance and for the welfare of our society.



In association with Central Bureau of Communication Jalandhar and Press Information Bureau, India, IIT Ropar observed Samvidhan Diwas 2022 with the guidance of Prof. Rajeev Ahuja, Director, IIT Ropar. The officials from CBC Jalandhar organised a quiz competition on the Constitution of India. Students performed drama and patriotic song. The Additional Deputy Commisioner, Rupnagar, Mr. Damanjit Singh Mann, read the preamble of the constitution together. Prof. Bhagwant Singh Satyal, Registrar, Lamrin Tech Skills University, S.B.S Nagar delivered the special speech of the day.





To celebrate the birth anniversary of the Iron Man of India, Sardar Vallabhbhai Patel a "Run for Unity" was organized at IIT Ropar. Prof. Rajeev Ahuja, Director, IIT Ropar flagged off the run. The course of the race was about 4 kms and about 200 students participated in this event. Participants took a determined oath to keep the unity of the motherland above all else. Early in the morning, the picturesque campus came alive as the runners, imbued with a sense of purpose, ran amidst the greenery and the crisp breeze to celebrate the enduring legacy of Sardar Patel. The event was organised by the Outdoor Activity Club (ODAC) and Institute Student Mentorship Program (ISMP) and Sports section of the Institute as a demonstration of unity and integrity.







IIT Ropar organized Fit India Freedom Run, an endeavour to strengthen the fit Indian Movement envisaged and involve IIT Ropar fraternity to embrace fitness as a way of life. Campus residents enthusiastically took part in the run to help in the pursuit of building a healthier institute community. The Director urged the students, faculty & staff to incorporate exercise and physical activities in their daily routine.



In the spirit of Azaadi Ka Amrit Mahotsav, IIT Ropar fraternity celebrated Independence Day with full enthusiasm and with a befitting salute to our tricolour, the symbol of pride and unity and celebrating Har Ghar Tiranga. Prof. Rajeev Ahuja, Director, IIT Ropar hoisted the Tiranga along with students, faculty and staff. The celebrations to mark this day commenced with patriotic singing and dance performances by IITians and the inspirational speech of the Director set the tone of the day.





The Fitness Club and ODAC, IIT Ropar organized the 4th edition of IIT Ropar Run of 11 KM Quarter marathon and 5 KM Fun run to promote health, wellness, and fitness on the auspicious day of Gandhi Jayanti 2022 under the Fit India Movement by Gol. The event was sponsored by State Bank of India to promote fitness among the youth of today.



With the vision of "Fresher's Today, Leaders Tomorrow", the fresher's orientation program for the 2022 batch was scheduled at IIT Ropar a power-packed day with much new energy, enthusiasm, laughter, and vibrancy. All the freshers at IIT Ropar comprising 79 girls and 321 boys in the 2022 batch got to know the insights of how personal and professional support is given by the IIT Ropar time to time apart from academics. A condensed introduction of the Institute was given by Prof. Rajeev Ahuja, Director, IIT Ropar, followed by the facilitation of all Deans and the Registrar.



PARTITION HORROR REMEMBRANCE DAY



As per the directions of the Ministry of Education, Gol, IIT Ropar observed "Partition Horror Remembrance Day" on 14th Aug 2022 in memory of the struggles and sacrifices of the people as the pain of partition can never be forgotten. An exhibition of the pictures of the turbulent period of the partition was set up at the Radhakrishnan Block. The exhibition showcased the largest displacement of human population in the last century, which also claimed the lives of large number of people.

LECTURE ON "AAHAR SE AROGYA"

IIT Ropar hosted the lecture of Dr. Khadar Vali, known to be the "Millet Man of India" on "AAHAR SE AROGYA". The session outlined the ways in which the 'Legacy Grain' of millets can help cure prevailing lifestyle diseases and also have a positive impact on the environment and the ecology of Punjab. The event was organized, recognizing the pressing need to have an alternative model of sustainable agriculture for the state of Punjab.





Prof. Rajeev Ahuja, Director, IIT Ropar inaugurated "Karyashala" organised by Dr. Mukesh Kumar, Department of Physics for a week (Sept 24-30, 2022) and funded by Science and Engineering Research Board (SERB_ONLINE). This Karyashala was specially focused on the Renewable Energy.







IIT Ropar celebrated birth anniversary of Bhagawan Birsa Munda with a talk on tribal heritage & a debate competition on Contribution of Janajati Heroes in Freedom Struggle. Bhagawan Birsa Munda was an iconic freedom fighter, social reformer and revered tribal leader of the country who fought bravely against the exploitative system of the British colonial government. IIT Ropar commemorated the day by saluting the contribution of the tribal freedom fighters.

INAUGURATION OF "CENSUS DATA RESEARCH WORKSTATION"

IIT ropar inaugurated "Census Data Research Workstation" to carry out meaningful research and making the data easily accessible to people for its optimum use. While giving details about data collection, Dr. Abhishek Jain IAS, Director, Census Operations and Citizen Registration, Punjab and Chandigarh, urged the Research scholars to carry out indepth and critical analyses of the database for value-addition and other social applications. Prof. Rajeev Ahuja, Director, IIT Ropar said that the setting up of the workstation would boost qualitative and utilitarian research among the faculty and research scholars.





Dr. Suvrokamal Dutta, who is a leading political and foreign policy expert with various national and international news channels visited IIT Ropar and discussed briefly about the historical background of the world politics and how power shifted from UK to USA and how India is emerging as leading world economy. During an interactive session, students also shared their views regarding current political and economic scenarios across the world and what steps should be taken to build a better economic environment.



UNESCO-INDIA-AFRICA HACKATHON 2022



IIT Ropar participated in UNESCO-India-Africa Hackathon 2022. As many as 23 nations have participated in this hackathlon. It was organized by Edcil (India) Ltd for a wider reach among the African community and International community to achieve in its mission of Internationalization. It has provided a suitable platform allowing young innovators to come together and find solutions for solving real world problems. The hackathon is serving as the foundation for creating potential start-ups with the potential to transform the world. It allows the

participating students to unleash their creativity and explore new technologies to solve realworld problems under the guidance of experts – thus, spearheading business innovation in the modern world.



NATIONWIDE PAKHWADA ON DISCRIMINATION AND VIOLENCE AGAINST WOMEN

IIT Ropar organized Nationwide Pakhwada on Discrimination and Violence against women (25th Nov. to 10th Dec.). Various talks and seminars were organised during the pakhwada highlighting the Acts for the elimination of violence against women. The Institute solemnly proclaimed its solidarity on the Elimination of Violence against Women and urges that every effort be made so that the various Acts made for the Elimination of all forms of Discrimination against Women becomes generally known and respected.







"A two day technical event METRIX4.0 "4th edition of Mechanical Engineering Time for Research Ideas Exchange" was organized at IIT Ropar, by the Department of Mechanical Engineering. PhD Scholars had presented the ongoing research activities of their research group via Lab Poster Presentations and Research Talks. Dignitaries from CMTI, ISRO, DRDO, Mercedes Benz, Dassault Systems and ANSYS were giving keynote talks in the

event. The main theme of the event was to bring in academia and Industry in a single stage and bridge the gap between them.

All industries and students from education institutions were welcome to participate and know the research activities happening at Department of Mechanical Engineering IIT Ropar. During the two days event, Research labs were open to the industries and other institute scholars for demonstrations.

IIT ROPAR OBSERVED "VEER BAAL DIWAS"

IIT Ropar observed, December 26, marked as "Veer Baal Diwas" to pay homage to the courage of the Sahibzadas, the four sons of Guru Gobind Singh, the last Sikh guru, and their quest for justice. A Movie "Char Sahibzade" was screened introducing students to the historical acts of courage and patriotism of the Sahibzadas. Veer Baal Diwas is to commemorate the day Sahibzada Zorawar Singh ji



and Sahibzada Fateh Singh ji attained martyrdom after being sealed alive in a wall. These two greats preferred death instead of deviating from the noble principles of Dharma.

11th CONVOCATION OF THE INSTITUTE

The Eleventh Annual Convocation of Indian Institute of Technology, Ropar (IIT Ropar) was organized in December 2022. Sh. Rajinder Gupta, Founder & Chairman, Trident Group India was the Chief Guest for this occasion.

Prof. Rajeev Ahuja, Director, IIT Ropar presented his Annual Report and congratulated the faculty, staff and students. The degrees were offered in the presence of faculty, staff, students, parents and eminent



personalities. This year, 564 students graduated from the various academic programmes of IIT Ropar.

The President Gold Medal and the Director Gold Medal for obtaining the highest CGPA among the graduating students of the Bachelor of Technology in the year 2021-22 has been awarded to Mr. Hansin Kishore Ahuja of Computer Science and Engineering department.

Chief Guest Mr. Rajinder Gupta, who delivered the Convocation Address, shared: "We need knowledgeable leaders like you - educated experts who can help business and industry understand how to transform this



information into usable intelligence, and how to move from simply collecting to tactically connecting data to make valuable insights and discoveries. You will be a critical part of the talent pool needed for the developing nation like India, to navigate the Big Data landscape effectively and to provide the analytical skills to harness it fully across many fields pertaining to industries."

Dr. K. Radhakrishnan, Hon'ble 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.



IIT Ropar fraternity celebrated 74th Republic Day. Director Prof. Rajeev Ahuja unfurled the National Flag accompanied by the singing of the National Anthem celebrating the spirit of the Constitution. The event concluded with a cultural program by the students and the distribution of refreshments.







FOUNDATION DAY CELEBRATION

IIT Ropar celebrated the Foundation Day of the institute on February 24. This year, as a part of the Foundation Day celebrations, a series of events were observed from February 21 to 25, 2023 to mark the efforts made by every stakeholder in bringing the Institute to such heights.





On the first day of Foundation Week celebrations, IIT Ropar observed "Vigyan Samagam" (February 21, 2023) powered by Pehchaan Ek Safar, IIT Ropar. It is an NGO of IIT Ropar students, a first of its kind exhibition showcasing science projects to Govt. school students followed by interactive sessions involving students.

The Director addressed the gathering and inspired them to strive towards success in their academic as well as personal life. He emphasized on the role of education, empathy, social awareness, and activity based practical learning during his oration. The Director and Associate Dean R&D, Dr. Pushpendra Pal Singh distributed the prizes to the winners and goodies to the teachers.

On this auspicious day, Prof. Rajeev Ahuja, Director, IIT Ropar inaugurated Kendriya Vidyalaya-IIT Ropar campus located inside the Institute premises, having state-of-the art infrastructure.


Moreover, Department of CSE, IIT Ropar organized a talk on "The Quest for AI" by an invited speaker, Prof. Deepak Khemani from IIT Madras. Prof. Khemani, is an alumnus of IIT Bombay whose research focus is Knowledge & Memory-Based Reasoning, NLP, ANN.

On the Foundation Day of IIT Ropar, the award ceremony of Emerging Young Alumni Award in various categories was organized as well.

ZEITGEIST 2023



The most anticipated Techno-Cultural fest, Zeitgeist 23 was celebrated in March.

The 4-day fiesta was an enthralling journey, and Team Zeitgeist wanted to make the audience's experience comfortable and memorable. IIT Ropar believes that good hospitality makes your experience rich. The line-up for one of North India's biggest college fests was impressive! With 43 events and prizes worth over ₹7 Lakhs, Zeitgeist rocked

with a bang. These were 4 vibrant days of fun, energy and excitement at IIT Ropar, from March 23-26.

The Techno-cultural extravaganza at IIT Ropar was witnessed on the first day of Zeitgeist IIT Ropar. Shri Suresh Prabhu, Former Railway Minister of India graced the Techno-Cultural Fest for an interactive session. The participants celebrated the diversity and richness of Indian poetry in Kavi Sammelan. Aavritti (आवृत्ति), kavi sammelan organised by IIT Ropar successfully won the hearts of an enthusiastic audience, thrilled by the poetries of Aman Akshar, Azhar Iqbal, Khushbir



Singh Shaad, Shashikant Yadav, Aayushi Rakhecha and Abhay Nirbheek.



Northern Waves brought the beats and good vibes to brighten the night with their performance at the main stage.

The famous singer and actress Ms. Sunanda Sharma from the music industry stole the show and captivated everyone with her electrifying performance on the main stage.

TRAINING SESSION ON SELF MANAGEMENT

A training session on Managing Self/Self Management consisting of Skills, behaviors, comperence, self discovery required in the professional working environment was conducted by Ms. Gurdish K. Sandhu, Adjunct Faculty and IT Advisor at IIT Ropar for Library & IT staff of the Institute.



ESTABLISHMENT OF A STATE-OF-THE-ART DATA CENTER

As we move into a digital age, data has become a crucial component of our daily lives. From businesses to individuals, data plays a crucial role in decision-making and innovation in order to meet the increasing requirement of high availability and reliability of mission critical applications. It will provide our institution with the infrastructure and resources necessary to stay at the forefront of technology.

The Data Center was inaugurated by Prof. Rajeev Ahuja, Director, IIT Ropar. He acknowledged the efforts of the IT team headed by Ms. Gurdish Sandhu and Dr. Balwinder Sodhi. This Data Center is equipped with the latest technology, including high-performance computing servers, 24-hour recorded HD CCTV coverage, and fire alarm and detection systems. The data center will be an asset for IIT Ropar fraternity for research and data analysis.



INTERNATIONAL DAY FOR WOMEN AND GIRLS IN SCIENCE

IIT Ropar, in association with Indian young academy of Sciences (INYAS), observed International Day for Women and Girls in Science with participation from IIT Ropar fraternity, school students from KV IIT Ropar and Govt. Senior Secondary School for Girls, Rupnagar. The event witnessed invited talks from famous women scientists, Prof. Keya Dharamvir and Dr. Sunita Mishra followed by literary and painting competitions as well as poster making and slogan writing competition for school students and IIT Ropar students.





The Department of Mathematics at IIT Ropar and the Institute of Solid Process Engineering and Particle Technology, Hamburg University of Technology Germany has organized an International symposium during February 22-24, 2023.

The event took place at Hotel Lalit, Chandigarh. This symposium was aimed to unite leading researchers and scientists in the domain of Discrete Element Modelling, Population Balance Modelling and Multiscale Modelling of Granular Media to discuss and



explore various techniques and recent developments for modelling particulate systems.

Possibilities of industrial collaboration with IIT Ropar were one of the primary objectives of the event. About 40 scientists from various Industries and research Institutes across the globe participated in the symposium. The Alexander von Humboldt Foundation, Germany and the Department of Science and Technology, Government of India, partially supported the symposium.

INAUGURATION OF VISITOR'S GUEST HOUSE



Prof. Rajeev Ahuja, Director, Indian Institute of Technology, Ropar inaugurated the Visitor's Guest House of the campus and named it after Shaheed Bhagat Singh, giving a befitting tribute to the great freedom fighter, who is an outstanding symbol of valour, courage, and sacrifice for the country. While inaugurating Prof. Rajeev Ahuja said, "Let us take inspiration from our freedom fighters and follow their ideals. The memorials of martyrs inspire us with a sense of duty and fulfill our vision to serve the nation and empower the socially conscious."

NATIONAL SCIENCE DAY 2023

IIT Ropar celebrated National Science Day 2023 on 28th February with a talk on "Joys of Toys" by Prof. Manish Jain, Center for Creative Learning, IIT Gandhinagar.

Round Glass Foundation participated in the celebration of National Science Day 2023 at Indian Institute of Technology, Ropar and screened 8 documentaries on "Nature, Science and Storytelling", engaging school students towards scientific knowledge of changing environment and its effect on biodiversity. Introducing Biodiversity lessons in the classroom teaching is essential to increase the resilience of communities and reduce their vulnerability in the face of shocks such as climate change and natural disasters.



The session focused on helping school students and young generations to understand what biodiversity loss means for them, to promote holistic development for Children that facilitates curiosity, cognitive flexibility, critical thinking and physical strength. The documentary is a step to enhance innovative learning approach that sparks curiosity and helps in building confidence and particularly for the health of their children, can be a very effective incentive for the positive behavioral change required to ensure more sustainable lifestyles and choices in energy, food and water consumption, which will in turn ease threats to biodiversity.

INTERNATIONAL WOMEN'S DAY 2023

Women Forum at Indian Institute of Technology, Ropar celebrated International Women Day 2023 with plethora of activities and lectures by eminent speakers. The day started with the impressions of Prof. Rajiv Ahuja, Director, IIT Ropar on women empowerment and gender parity. Dr. Neha Sardana, Member, Women Forum, IIT Ropar welcomed the guests.

Dr. Sarmishtha Bhattacharya talked about the Cyclotron to probe nuclei and its applications. Dr. Lipika Gautam, MBBS, MD talked about the Antibiotic Resistance: The road to postantibiotic era. Dr. Subina Narang shared about ROP for all, followed by Poster making, slogan writing and Rangoli making competitions for all students.

Ms. Anita Budhiraja, National Institute of Electronics & Information Technology (NIELIT) discussed on the topic, Women Empowerment by skill development followed by a talk of Ms. Arvinder Kaur, Faculty of Home Science at Government College Ropar on Women Nutrition and Health. The day was concluded by giving prizes to the winners and token of remembrance to the speakers and to the team of Inner Wheel Club Rupnagar.



DELEGATION VISIT

MEETING WITH GEN. ANIL CHAUHAN

Prof. Rajeev Ahuja, Director, IIT Ropar had a meeting with Gen. Anil Chauhan PVSM UYSM AVSM SM VSM, the current and 2nd Chief of Defence Staff of the Indian Armed Forces during the Defence Expo at Gandhinagar. The CDS was apprised of the key initiatives being taken by the IIT Ropar in the areas of defence , aerospace and security.





VISIT OF PROBATIONARY IAS OFFICERS

IAS officers of 2021 batch Mr. Nitesh Kumar Jain, Mr. Simrandeep Singh and Dr. Akshita Gupta visited IIT Ropar during their Punjab Darshan and met Prof. Rajeev Ahuja, Director, IIT Ropar along with Dean International Relations Prof. Reddy C. C. and Associate Dean R&D, Dr. Pushpendra P. Singh. Prof. Rajeev Ahuja gave them wishes for their successful, happy, bright, and rewarding future ahead. The meet had discussions on the initiatives IIT Ropar has taken for the betterment of society and for strengthening Research and Innovation culture in the Institute and the way forward on how IIT Ropar can help solving various issues pertaining to environment and society at large.



• MEETING WITH HON'BLE MINISTER OF TEXTILE MR. PIYUSH GOYAL

Prof. Rajeev Ahuja, Director, IIT Ropar met Hon'ble Minister of Textile Mr. Piyush Goyal during the mission steering group to discuss and work for holistic development of entire technical textile sector on pan-India basis and to promote Make in India competitiveness.

VISIT OF SOUTH DAKOTA STATE UNIVERSITY

Prof. Sanjeev Kumar, Dean, Jerome J. Lohr Endowed South Dakota State University visited IIT Ropar to foster academic exchange and cooperation between the two institutions and to foster joint academic programme in the field of education and research. This endeavor will further set a significant milestone for closer academic collaboration.





 VISIT OF BRITISH DEPUTY HIGH COMMISSIONER-CAROLINE ROWETT

British Deputy High Commissioner-Caroline Rowett, Dominic Beales Head of UK Defence & Security Exports India, and the team visited IIT Ropar to meet Prof. Rajeev Ahuja, Director, IIT Ropar and faculty to discuss partnership opportunities between UK and India to explore possibilities of collaborations in technology development, Defence & Security and many more areas of mutual interest.

VISIT OF EMBASSY OF FRANCE (DELHI)

A Delegation from Embassy of France in Delhi visited IIT Ropar. Dr.Fabien Chareix, Attaché for Scientific & University Cooperation along with Dr. Didier Raboisson, Attaché for Scientific Cooperation visited the Institute for



discussing the Indo-French academic exchanges and contemplate future strategies for cooperation.

The team discussed possible collaborations between India and French Institutions on joint, Dual and exchange opportunities. There was an extensive discussion with Dr. Fabien Chareix about Indo-French collaboration, ongoing projects, student exchange and various scholarships offered by France.



CERTIFICATE PROGRAM IN BASIC ORAL CHINESE CONVERSATION

Office of Continuing Education and Outreach Activities at IIT Ropar, in collaboration with Taiwan Education Center offered a certificate program in Basic Oral Chinese Conversation. The programme focused on oral communication for business, work and self introduction in Chinese, as well as basic knowledge of Chinese grammar and its number system.





• A HANDS-ON WORKSHOP ON OPEN FOAM AND LAMMPS

Department of Chemical Engineering and Office of Continuing Education and Outreach Activities at IIT Ropar conducted "A hands-on workshop on OpenFOAM and LAMMPS"

PROFESSIONAL DEVELOPMENT PROGRAM IN CORROSION MANAGEMENT & TECHNOLOGY

IIT Ropar and Confederation of Indian Industry Offers Online Post Graduate Professional Development Program in Corrosion Management & Technology.





ONLINE GIAN COURSE ON CURRENT ISSUES IN BIOLINGUISTICS AND EVOLUTIONARY LINGUISTICS

The Department of Humanities and Social Sciences, IIT Ropar organized an online GIAN course titled 'Current Issues in Biolinguistics and Evolutionary Linguistics'. The course was led by Professor Koji Fujita (Kyoto University, Japan and Dr. Somdev Kar, Associate Professor of Linguistics at the Department of Humanities and Social Sciences, IIT Ropar.

• A SEMINAR ON "THE GOLDEN ERA OF INDIAN PHYSICS"

Department of Physics at IIT Ropar hosted a physics seminar on 5th August. Prof. Rajinder Singh from Physics Didactic and Science Communication Group, Physics Institute, University of Oldenburg, Germany delivered a seminar on the topic "The Golden Era of Indian Physics."



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• WORKSHOP ON EFFICIENT ENERGY MANAGEMENT SYSTEM FOR SMART RESIDENTIAL NETWORKS VIA INTELLIGENT MOBILE WEB SERVICES

SYnchrophasor Measurement and Research (SYMAR) lab at the IIT Ropar organised a two-days in-person workshop entitled "Efficient Energy Management System for Smart Residential Networks via Intelligent Mobile Web Services". There were expert lectures by the faculties from different IITs and hands-on demonstrations/training.

• A GIAN COURSE ON "THEORY OF SURFACE NONLINEAR SPECTROSCOPY"

The Department of Physics, IIT Ropar conducted GIAN course on "Theory of Surface Nonlinear Spectroscopy'. Dr. Kailash Chandra Jena, Associate Professor,



Department of Physics, IIT Ropar was the coordinator and Prof. Akihiro Morita, Professor of Chemistry, Tohoku University, Sendai, Japan was invited as an expert of this GIAN Course.



• A WORKSHOP ON "AAVISHKAR- THE IDEATHON CHALLENGE" WAS ORGANIZED

"Aavishkar- The Ideathon Challenge", a workshop by Boston Scientific was conducted by E-CELL IIT ROPAR in collaboration with IIT Ropar Technology Business Incubator Foundation (TBIF). The event was a huge success with more than 200 students from various departments participating in the workshop. Knowledge pertaining to industry, best practices for medical devices and healthcare product development was imparted. The

participants learnt about problem formulation, company legal structure, intellectual property rights (IPR), financial planning, market research and investment strategies. A short product demonstration of Boston Scientific products, along with know-how of the product development life cycle was also given.

A WORKSHOP ON "NEXT GENERATION WIRELESS NETWORKS"

IIT Ropar, in association with DST and SERB organized a workshop on "Next Generation Wireless Networks". The workshop addressed the current trends in today's rapidly changing wirless industry, bringing together international experts in wirless system and radar to explore and present technical talks in the development of these systems.





CONFERENCE ON THE GOING GLOBAL ASIA PACIFIC 2022

Prof. Rajeev Ahuja, Director, IIT Ropar joined the Going Global Asia Pacific 2022 conference under the flagship of British Council, held from 28 November to 1 December at Singapore to explore International Education in the UK and Asia Pacific region.

• A GIAN COURSE ON "INTERFACIAL INSTABILITY WITH INDUSTRIAL APPLICATIONS"

The Department of Mathametics, IIT Ropar conducted a GIAN course on "Interfacial Instability with Industrial Applications". This course dealt with interfacial instability and pattern formation with application to industrial processes of relevance. Prof. Manoranjan Mishra, Professor, department of Mathametics, IIT Ropar was the course coordinator and Prof. Ranga Narayanan, Professor of Chemical Engineering, University of Florida, Gainesville, USA was invited as an expert of this GIAN Course. The students grasped the fundamental ideas that are needed to critically understand pattern formation phenomena and the mathematical tools needed to predict such phenomena.



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INTERNATIONAL CONFERENCE WITH COMSYS EDUCATIONAL TRUST KOLKATA

IIT Ropar and COMSYS Educational Trust Kolkata organised 3rd International Conference on Frontiers in Computing and Systems (COMSYS-2022), during December 19-21, 2022, at IIT Ropar. The main objective of COMSYS-2022 was

to offer the most up-to-date research and findings from scholars on the theme "Cyberphysical Systems for Real-World Applications."

A WORKSHOP ON "ENERGY CONSERVATION"

IIT Ropar has recently started a project in collaboration with IIT Madras and Kotak Mahindra Bank named Kotak IIT Madras Save Energy Mission (KISEM). The primary objective of this project is to conduct an energy assessment for MSMEs free of cost to enhance their energy efficiency and reduce their overall carbon footprints. KISEM at IIT Ropar is aimed to serve MSME industries based out in Punjab and nearby states with Energy Efficiency and Energy Conservation. In this context, IIT Ropar has organized a workshop on "Energy Conservation" for Industries. The representatives from MSMEs were invited to attend this workshop to gain insight into the decarbonization of Indian industries.





IIT ROPAR - TECHNOLOGY BUSINESS INCUBATOR FOUNDATION (TBIF) ORGANIZED AN EXPERT TALK ON THE OCCASION OF NATIONAL STARTUP DAY 2023

Mr. Rajat Jain, founder and CEO of Sunfox Technologies was invited to share his experience during a talk to observe "National Start-up Day". He is a proud entrepreneur who built his firm, which has been internationally recognized for its success, from the ground up without a strong financial

background. His venture is among the few that managed to get all the sharks on board with their amazing ideas and plans on the Shark Tank.

COLLABORATIVE ONLINE RESEARCH WORKSHOP WITH DALHOUSIE UNIVERSITY, NOVA SCOTIA, CANADA

The collaborative research workshop facilitated research collaborations on civil engineering and related topics, a research team comprising individuals with expertise in the



specific techniques from both the institutions had discussions on emerging areas of common interest with the most promising areas for potential collaboration.

A TWO-DAY WORKSHOP ON "TOWARDS SUSTAINABLE WORLD USING RENEWABLE ENERGY"



IIT Ropar organized a two days workshop cum Meeting of Industry Partners for Hydrogen Valley Platform by Chandigarh Cluster from February 24-25, 2023.

With the strong support from Gol, Hydrogen will soon transform the energy landscape of India and thus IIT Ropar is strongly committed to enabling Indian Industry to develop hydrogen-specific technologies required for this transition. IIT Ropar as part of the Chandigarh Cluster participated in the recently launched Hydrogen

Valley Platform Initiative of the Department of Science & Technology, Gol. Under this initiative, IIT Ropar shall establish a large-scale Green Hydrogen production facility to highlight various aspects of the hydrogen value chain such as storage/dispensing/

distribution/safety, and shall serve the Ammonia production Industry and Automotive Industry as off-takers.

A SYMPOSIUM ON 'SIMS FOR SEMICONDUCTORS'

Department of Metallurgical and Materials Engineering at IIT Ropar organized a Symposium on 'SIMS for Semiconductors'. This program was aimed to talk about the current scenario of Semiconductor Industry in India in line with the announcement of Gols Semiconductor Mission.

Industry experts were invited to provide an overview of the current situation and future prospects for the industry. The event was graced by Dr. Manish Kumar Hooda, Head Technology Development Division, Semi-Conductor Laboratory in addition to three other National and International Speakers.





• IIT ROPAR JOINS HANDS WITH GITA & SUSHIL KUMAR DAS FOUNDATION (GNSKD FOUNDATION)

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price hands with

(GnSRD Foundation)

to address the healthcare challenges & Solutions for BA and IBD diseases.



IIT Ropar and Gita & Sushil Kumar Das Foundation (GnskD Foundation) joined hands to address the healthcare challenges and solutions for rheumatoid arthritis (RA) and IBD diseases.

The collaboration will support rapid scaling of healthcare innovations, all in the pursuit to achieve "Health for all" in India. The partnership will play crucial role in bringing healthcare solutions and amplify the impact

of rheumatoid arthritis (RA) and IBD disease on human's body.

• MoU SIGNING WITH FRENCH INSTITUTIONS

The team from India in France visited IIT Ropar for discussion on possible collaborations between India and French Institutions on joint, Dual and exchange opportunities. Dr.Fabien Chareix,Attaché for Scientific & University Cooperation along with Dr. Didier Raboisson, Attaché for Scientific Cooperation visited the Institute for possible collaborations.





• MoU SIGNING WITH NIT UTTARAKHAND

IIT Ropar inks pact with NIT Uttarakhand to promote academic and research cooperation and development of these two institutions as centre of Excellence of Higher and Technical Education and Scientific Research. Prof. Rajeev Ahuja, Director, IIT Ropar and Prof. Lalit K. Awasthi, Director, NIT Uttarakhand signed the MoU in the presence of Prof. Navin Kumar, Dean R&D, Dr. Pushpendra P. Singh, Associate Dean R&D, Dr. Jitendra Prasad, Associate Dean, UG along with other faculty members from IIT Ropar and NIT Uttarakhand.

MoU SIGNING WITH GOVERNMENT COLLEGE RUPNAGAR

IIT Ropar and Government College Rupnagar signs MoU in area of teaching, learning, skill and faculty development. The proposed cooperation will be manifested in the framework of social scientific and Institute entrepreneurship responsibility.





MoU SIGNING WITH PUNJAB REMOTE SENSING CENTER

IIT Ropar signed an MoU with Punjab Remote Sensing Center to enhance research and academic collaboration for application of remote sensing and geospatial technology and to make advancements in Geoinformatics with this tactical partnership, IIT Ropar and PRSC aims to share knowledge, faculty and resources to make advancements in the areas of geoinformatics and remote sensing focusing on advanced

geospatial tools and techniques.

MoU SIGNING WITH DALHOUSIE UNIVERSITY

The visit of Dalhousie University at IIT Ropar was seen by Prof. Rajeev Ahuja, Director IIT Ropar along with Heads of all Departments, came out a very successful foray that could bring a deeper engagement between the two institutions. A memorandum of Understanding was signed between the two Institutions acknowledging the value of international cooperation and to establish a Joint Doctoral Program for Computer Science and Engineering students.





MoU SIGNING WITH IIT MADRAS

IIT Ropar has signed a partnership MoU with IIT Madras to execute the Kotak Mahindra Bank - IITM save energy mission project based on Environment & Sustainable Development to promote decarbonisation & energy efficiency for MSME sector.

MoU SIGNING WITH UK INDIA BUSINESS COUNCIL

Indian Institute of Technology, Ropar signed MoU with UK India Business Council on behalf of Aerospace & Defence Industry Group, signed by Prof. Rajeev Ahuja, Director, IIT Ropar & UKIBC CEO Dickie McCallum, in presence of Mark Goldsack, UK Defence and Security Exports. The UKIBC is an advocacy and strategic advisory business on a mission to build economic prosperity in the UK and India. This collaborative partnership between the UKIBC and IIT Ropar will help to boost Research and Development in aerospace and defence by proactively developing the research environment and strengthening collaboration & will support and build huge opportunities for collaboration that exist between the defence industries of the UK and India.





MoU SIGNING WITH IRISH INSTITUTE OF DIGITAL BUSINESS (DOTLAB) DUBLIN

IIT Ropar signed an MoU with The Irish Institute of Digital Business (dotLAB) Dublin City University, Ireland to support collaboration on domestic and international research projects and to enable technologies and transform processes in the area of aerospace, Defence and Security sector and to encourage direct contact, cooperation, and

exchanges between their faculty and administrative staff, departments, and research institution.

MoU SIGNING WITH ARTRAC

IIT Ropar and the Indian Army, jointly through ARTRAC, will establish a "Centre of Excellence" for Studies & Applied Research in defense & security at IIT Ropar. The aim of this collaboration is to leverage IIT Ropar's technical expertise and ARTRAC's operational expertise in advanced materials and manufacturing, design & development of deep learning algorithms, multipath and wireless networks, IoT, Data transmission tools, Remote sensing and forecasting, Speech recognition, Natural Language processing, Computer



vision, Image processing, cyber security analytics and authentication, to name a few. IIT Ropar will also curate training programs as exchange of information on educational programmes for security practitioners of the armed forces, CAPF (Central Armed Police Forces), intelligence agencies and State Police Forces run by IIT Ropar as part of its oncampus and off-campus programmes on 'Research and Innovation'. An MoU was signed by both the organizations, under the leadership of Prof. Rajeev Ahuja, Director, IIT Ropar and Lt Gen S.S Mahal, PVSM, VSM, General Officer Commanding –in-Chief of the Army Training Command (ARTRAC) at IIT Ropar premises.



COLLABORATION WITH IIT MANDI

IIT Ropar joined hands with IIT Mandi for a joint PhD programme and to share scientific-technical network between two Institutions. The initiative will expand new avenues for collaboration on sharing of graduate programs in terms of teaching and learning and to speed up research collaboration for the joint PhD program. The Institutes will also jointly organise R&D seminars, workshops, webinars, conferences, continuing education programmes. Additionaly, they will also promote the

exchange of students, PhD, postdoctoral scholars and faculty for teaching/training programmes. An MoU was signed by Prof. Rajeev Ahuja, Director, IIT Ropar and Prof. Laxmidhar Behera, Director, IIT Mandi.

• IIT ROPAR JOINED HANDS WITH DAYANAND MEDICAL COLLEGE AND HOSPITAL (DMCH) LUDHIANA

IIT Ropar and DMCH Ludhiana joined hands to explore clinical trials of health technologies

and translational clinical research, data sharing for clinical and engineering research, creation of joint educational and research programs with both clinical and engineering aspects. This collaboration will also involve partnership in innovation and entrepreneurship driven opportunities and resources, in collaborative consulting and research projects, and last but not the least, sharing of scientific-technical network and infrastructure under the umbrella of this MoU. The faculty members of both institutes will be working on



conducting research using each other's laboratories and other facilities and they will be collaborating for research work and writing relevant research papers. The MoU was signed by Prof. Rajeev Ahuja, Director IIT Ropar and Dr. Gurpreet Wander, Chairman R&D, DMCH, Ludhiana.

MoU SIGNING WITH BIKAL TECH



IIT Ropar has entered into a MoU with BIKAL TECH, a UK-based technology company, at the Punjab Investor Summit, 2023. The cooperation between both, aims at establishing a high performance computing data center for joint research and product development in 5G and AI, for security and law-enforcement applications in collaboration with the state's agencies.

BIKAL TECH is based in Coventry, UK and has a joint venture in Sharjah, where it is setting up a high-performance water cooled data centre. The company

works with universities and other smaller firms (both hardware and software) to develop and transfer tech from established research.

The MoU was executed by Prof. Rajeev Ahuja, Director IIT Ropar and Mr. Raj Sandhu, CEO, BIKAL, in the august presence of Dr. Inderbir Singh Nijjar, Punjab Cabinet Minister for Local Govt, Parliamentary Affairs, Conservation of Land & Water, Administrative Reforms and Shri J. M. Balamurugan (IAS), Principal Secretary, Defence Services Welfare and Principal Secretary, NRI Affairs.

MoU SIGNING WITH UNIVERSITY OF OULU, FINLAND

IIT Ropar has entered into an MoU with University of Oulu, Finland on 23 Jan 2023. MoU was signed by Prof. C.C. Reddy, Dean, International Relations, IIT Ropar and Dr. Mirja Illikainen, Dean, University of Oulu, Finland. The Joint research activities include Physical simulation, Medelling and characterization, Design, Processing, and advanced characterization.

• MoU SIGNING WITH ICMR-CENTRE FOR INNOVATION AND BIO DESIGN (CIBIOD)

IIT Ropar-TBIF signed an MoU with ICMR-CENTRE FOR INNOVATION AND BIO DESIGN (CIBioD), a Healthcare Innovation Hub and Start-up Incubator established by ICMR at PGIMER Chandigarh that aims to promote innovation in medical devices and instruments by creating a conducive ecosystem with the involvement of multiple premier technology institutes in the region in collaboration with the Postgraduate Institute of Medical Education and Research.



• राजभाषा गतिविधियां



संस्थान की प्रमुख राजभाषा उपलब्धियां आई.आई.टी. रोपड़ राजभाषा शील्ड से पुरस्कृत

नराकास रुपनगर की अर्धवार्षिक बैठक तथा राजभाषा शोल्ड वितरणसमारोह

नगर राजभाषा कार्यान्वयन समिति रुपनगर की 9वीं अर्धवार्षिक बैठक दिनांक 25 मई, 2022 को भारतीय प्रौद्योगिकी संस्थान के सम्मेलन कक्ष में संपन्न हुई। इस बैठक में नराकास रुपनगर के अंतर्गत आनेवाले सभी सदस्य कार्यालयों द्वारा किए गए राजभाषा संबंधी कार्यों का मूल्यांकन किया गया।



यह बैठक भारतीय प्रौद्योगिकी संस्थान रोपड़ के निदेशक प्रो. राजीव आह्जा

जी की कार्यकारी अध्यक्षता में संपन्न हुई तथा इस बैठक में यूको बैंक, चण्डीगढ़ के अंचल प्रबंधक श्री मनमीत एस व्यास, एनएफएल के मुख्य महाप्रबंधक श्री. एस. के. श्रीवास्तव, नाइलिट चण्डीगढ़ के कार्यकारी निदेशक श्री सुभांशु तिवारी तथा श्री अमलशेखर करणसेठ प्रभारी (राजभाषा) प्रधान कार्यालय कोलकाता विशेष रुप से उपस्थित थे।

श्री मनमीत एस. व्यास, अंचल प्रबंधक, यूको बैंक ने बैठक में उपस्थित विभिन्न कार्यालयों के प्रमुख, हिंदी से जुड़े अधिकारी एवं कर्मचारियों का औपचारिक स्वागत किया। श्री एस. के. श्रीवास्तव, मुख्य महाप्रबंधक, एनएफएल ने इस अवसर पर सभी के समक्ष अपने विचार रखे।



अपने अध्यक्षीय संबोधन में भारतीय प्रौद्योगिकी संस्थान रोपड़ के निदेशक प्रो. राजीव आहूजा ने इस बात पर प्रसन्नता व्यक्त की कि नराकास रुपनगर निश्चित समयावधि में अपनी गतिविधियों एवं आयोजनों से अपने द्रुत विकास को चिन्हित कर रहा है। प्रो. राजीव आहूजा ने बैठक में उपस्थित सभी कार्यालयों के प्रमुखों एवं राजभाषा से जुड़े कर्मियों को अपने-अपने कार्यालयों में अधिक से अधिक कार्य राजभाषा हिंदी में करने की अपील की। इस अवसर पर भारतीय प्रौद्योगिकी संस्थान के कार्यवाहक कुलसचिव डॉ. दिनेश के.एस. ने भी अपने विचार व्यक्त किए।

इस बैठक में वित्त वर्ष 2021-22 में राजभाषा में श्रेष्ठ कार्य करने हेतु भारतीय प्रौद्योगिकी संस्थान रोपड़ को राजभाषा शील्ड प्रदान की गई।

शील्ड वितरण समारोह के दौरान वित्त वर्ष 2021-22 के दौरान नराकास रुपनगर की गतिविधियों में विशेष सहयोग प्रदान करते हेतु भारतीय प्रौद्योगिकी संस्थान के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे को प्रशस्ति पत्र प्रदान किया गया।



राजभाषा शील्ड प्राप्त करते हुए भा.प्रौ.सं. रोपड़ के निदेशक प्रो. राजीव आहूजा



प्रशस्ति पत्र प्राप्त करते हुए डॉ. गिरीश प्रमोदराव कठाणे हिंदी अनुवादक, भा.प्रौ.सं. रोपड़



हिंदी शिक्षण योजना द्वारा संचालित भाषा प्रशिक्षण परीक्षा में संस्थान-उपलब्धि

हिंदी शिक्षण योजना, नई दिल्ली द्वारा आयोजित भाषा प्रशिक्षण के जनवरी-मई 2022 सत्र की परीक्षा में संस्थान के सदस्यों द्वारा उत्तम प्रदर्शन किया गया। भाषा प्रशिक्षण की जनवरी-मई 2022 सत्र की माह मई 2022 में संपन्न प्राज्ञ, प्रवीण तथा पारंगत परीक्षा में पारंगत प्रशिक्षण में भारतीय प्रौद्योगिकी संस्थान के 08 सदस्य, प्राज्ञ परीक्षा में 01 सदस्य तथा प्रवीण परीक्षा में 01 सदस्य उत्तीर्ण हुए। भारतीय प्रौद्योगिकी संस्थान उत्तीर्ण सदस्यों का अभिनंदन करता है।



<mark>श्री पुनीत गोयल</mark>, उप कुलसचिव

पारंगत परीक्षा में उत्तीर्ण सदस्य



श्री मनोज कुमार, कनि. सहायक (लेखा)



श्री कौशल किशोर झा, वरिष्ठ सहायक



सुश्री अमृत कौर, वरिष्ठ सहायक



श्री अमित रावत, सहायक सुरक्षा अधिकारी



<mark>श्री अमोद कान्हेरे,</mark> अधीक्षक



श्री दलजीत सिंह सैनी, वरिष्ठ सहायक



श्री दिवाकर शर्मा, वरिष्ठ सहायक

हिंदी भाषा प्रशिक्षण की जनवरी-मई 2022 सत्र की पूरक परीक्षा माह नवंबर 2022 में संपन्न में उत्तीर्ण सदस्य



श्री सौरभ भाटिया, कनि. सहायक, भंडार एवं क्रय

प्रवीण परीक्षा में उत्तीर्ण सदस्य



सुश्री नबनीता चक्रबोर्ति, कनिष्ठ अधीक्षक

प्राज्ञ परीक्षा में उत्तीर्ण सदस्य



सुश्री मनिंदर पाल कौर, कनिष्ठ सहायक

हिंदी भाषा प्रशिक्षण (जुलाई 2022 से नवंबर 2022)

हिंदी शिक्षण योजना, नई दिल्ली द्वारा आयोजित हिंदी भाषा प्रशिक्षण (हिंदी पारंगत) पत्राचार प्रशिक्षण का जुलाई-नवंबर 2022 सत्र की माह नवंबर 2022 में संपन्न परीक्षा में संस्थान के निम्न तीन सदस्य उत्तीर्ण हुए।



सुश्री मनदीप कौर, कनि. सहायक, स्थापना अनुभाग



सुश्री साक्षी कपूर, कनि. सहायक, भंडार एवं क्रय अनुभाग



सुश्री पूनम रानी, कनि. अधीक्षक, स्थापना अनुभाग

🕨 हिंदी टाइपिंग प्रशिक्षण

63वां सत्र (फरवरी 2022 से जुलाई 2022)

केंद्रीय हिंदी प्रशिक्षण संस्थान, नई दिल्ली द्वारा आयोजित हिंदी शब्द संसाधन (हिंदी टाइपिंग) पत्राचार प्रशिक्षण का 63वां सत्र (फरवरी 2022 से जुलाई 2022) की माह जुलाई 2022 में संपन्न परीक्षा में संस्थान के निम्न तीन सदस्य उत्तीर्ण हुए।



सुश्री रुबल बत्ता, कनि. सहायक, डायरी एवं प्रेषण अनुभाग



<mark>श्री आशीष गौड़,</mark> कनि. सहायक, भंडार एवं क्रय अनुभाग



श्री सुमित राणा, कनि. सहायक, स्थापना अनुभाग

61वां सत्र (फरवरी 2021 से जुलाई 2021) की पूरक परीक्षा माह जुलाई 2022 में संपन्न में उत्तीर्ण सदस्य



सुश्री शीतल भोला

हिंदी टाइपिंग के 64वें सत्र (अगस्त 2022-जनवरी 2023) के पंजीकृत सदस्यों हेतु 4 दिवसीय आंतरिक प्रशिक्षण कार्यक्रम का आयोजन

भारतीय प्रौद्योगिकी संस्थान रोपड़ के 10 सदस्य केंद्रीय हिंदी प्रशिक्षण संस्थान, नई दिल्ली द्वारा आयोजित किए जा रहे हिंदी शब्द संसाधन (हिंदी टाइपिंग) प्रशिक्षण कार्यक्रम में 64वें सत्र हेतु पंजीकृत किए गए। इस प्रशिक्षण कार्यक्रम की अवधि 01 अगस्त 2022 से जनवरी 2023 तक है तथा इसकी परीक्षा माह जनवरी 2023 में प्रस्तावित है।

इस सत्र की परीक्षा को केंद्र में रखकर संस्थान के पंजीकृत सदस्यों की तैयारी को बेहतर बनाने के उद्देश्य से हिंदी प्रकोष्ठ ने दिनांक 09, 10, 14 और 15 नवंबर 2022 को 04 दिनों के आंतरिक प्रशिक्षण कार्यक्रम का आयोजन किया।

इस प्रशिक्षण कार्यक्रम में प्रशिक्षक के रूप में श्री अरविंद कुमार, सहायक निदेशक, हिंदी टंकण एवं आशुलिपि प्रशिक्षण केंद्र, हिंदी शिक्षण योजना, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार, चण्डीगढ़ केंद्र को आमंत्रित किया गया था।

दिनांक 09 नवंबर 2022 को संपन्न आंतरिक प्रशिक्षण कार्यक्रम के प्रथम सत्र में प्रशिक्षक महोदय ने प्रशिक्षणार्थियों को हिंदी कुंजीपटल का परिचय एवं इसकी व्यावहारिकता , दिनांक 10 नवंबर 2022 के द्वितीय सत्र में मुख्य रुप से व्याकरणिक चिन्हों का अभ्यास, गति अभ्यास आदि, दिनांक 14 नवंबर 2022 के सत्र में सारणी बनाना तथा सारणी बनाते हुए ध्यान रखे जाने वाले बिंदु, विभिन्न पत्रों का टंकण आदि तथा दिनांक 15 नवंबर 2022 को हस्तलेख पर मार्गदर्शन करते हुए विभिन्न प्रूफ शोधन चिन्हों की पहचान तथा चारों सत्रों का पुनरावलोकन किया।



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इस आंतरिक प्रशिक्षण कार्यक्रम के चतुर्थ एवं अंतिम सत्र में संस्थान के हिंदी अधिकारी श्री लगवीश कुमार ने श्री अरविंद कुमार, सहायक निदेशक का धन्यवाद ज्ञापित किया और सभी प्रशिक्षणार्थियों को परीक्षा में उत्तम अंकों से उत्तीर्ण होने हेतु शुभकामनाएं दी।



प्रशिक्षक महोदय का पत्र टाइपिंग का अभ्यास कराते हुए

प्रशिक्षक महोदय सारणी लेखन/टाइपिंग का अभ्यास कराते हुए

अंत में, सभी प्रशिक्षणार्थियों ने इस 4 दिवसीय प्रशिक्षण कार्यक्रम के संबंध में अपने विचारों को अभिव्यक्त किया और सभी ने श्री अरविंद कुमार, सहायक निदेशक महोदय का बहुत ही सरलता के साथ हिंदी टाइपिंग के विविध पक्षों पर मार्गदर्शन एवं अभ्यास कराने हेतु धन्यवाद किया।

) भा.प्रौ.सं. रोपड़ में हिंदी कार्यशाला का आयोजन (दिनांक 16 जून 2022)

भारतीय प्रौद्योगिकी संस्थान रोपड़ के हिंदी प्रकोष्ठ ने दिनांक 16 जून, 2022 को आभासीय रूप में हिंदी कार्यशाला का आयोजन संपन्न किया। राजभाषा विभाग, गृह मंत्रालय भारत सरकार के दिशा-निर्देशों के अनुपालन में तथा दिनांक 25 मई 2022 को संपन्न नराकास रुपनगर की बैठक में लिए गए निर्णय के अनुवर्ती इस कार्यशाला का आयोजन किया गया।

यह कार्यशाला हिंदी में आई टी टूल्स के अनुप्रयोग विषय पर आयोजित की गई जिसमें विषय विशेषज्ञ के रुप में सीएसआईआर-उत्तर पूर्व विज्ञान तथा प्रौद्योगिकी संस्थान (निस्ट) के हिंदी अधिकारी एवं नराकास जोरहाट, असम के सदस्य सचिव श्री अजय कुमार को आमंत्रित किया गया था। इस अवसर पर नराकास रुपनगर के



अध्यक्ष श्री अमिष नाथ झा, सदस्य सचिव डॉ. हेमलता के साथ भारतीय प्रौद्योगिकी संस्थान रोपड़ के हिंदी अधिकारी श्री लगवीश कुमार विशेष रुप से उपस्थित थे। इस कार्यशाला में भारतीय प्रौद्योगिकी संस्थान रोपड़ के कर्मचारियों तथा नराकास रुपनगर के सदस्य कार्यालयों ने सहभागिता ली।



आमंत्रित विषय विशेषज्ञ महोदय ने कार्यालय में कार्य करते हुए हिंदी में आनेवाली समस्याओं विशेष रुप से तकनीकी समस्याओं और बाधाओं को सभी के साझा किया तथा इन समस्याओं के समाधान की दिशा में राजभाषा विभाग द्वारा बनाएं गए विभिन सॉफ्टवेयर की जानकारी दी। श्री अजय कुमार जी ने इन सॉफ्टवेयर को किस प्रकार उपयोग में लाया जा सकता है इस पर भी अपने विचार रखें।



इस अवसर पर आमंत्रित वक्ता महोदय तथा उपस्थितों का औपचारिक स्वागत श्री अमिष नाथ झा, अध्यक्ष, नराकास रुपनगर ने किया विशेष टिप्पणी तथा धन्यवाद ज्ञापन डॉ. हेमलता, सदस्य सचिव, नराकास रुपनगर तथा कार्यक्रम का संचालन भा.प्रौ.सं. रोपड़ के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे ने किया।

भा.प्रौ.सं. रोपड़ में हिंदी कार्यशाला का आयोजन (दिनांक 12 सितंबर 2022)

राजभाषा विभाग, गृह मंत्रालय, भारत सरकार के दिशा-निर्देशों के अनुपालन में हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड़ ने जुलाई-सितंबर 2022 तिमाही के दौरान हिंदी कार्यशाला का आयोजन संपन्न किया। संस्थान का हिंदी प्रकोष्ठ प्रति तिमाही एक कार्यशाला का आयोजन संपन्न करता आ रहा है। इसी क्रम में, दिनांक 12 सितंबर 2022 को आनलाइन माध्यम से हिंदी कार्यशाला का आयोजन किया गया। इस कार्यशाला का उद्देश्य संस्थान सदस्यों को हिंदी भाषा, वर्णमाला तथा व्याकरण संबंधि महत्वपूर्ण बिंदुओं पर मार्गदर्शित करना रहा है। अतः इस विषय पर संस्थान सदस्यों का मार्गदर्शन करने हेतु श्री चरणजीत वर्मा, सहायक निदेशक, हिंदी शब्द संसाधन/हिंदी टंकण, हिंदी शिक्षण योजना, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार, नई दिल्ली को विशेष रुप से आमंत्रित किया गया था। इस कार्यशाला में संस्थान के कर्मचारियों ने बढ़-चढ़ कर अपनी सहभागिता दर्ज की।



अपने मार्गदर्शन पर वक्तव्य में श्री चरणजीत वर्मा, सहायक निदेशक ने हिंदी वर्णमाला, इसकी वर्तनी में स्वाभाविक रुप से होनेवाली त्रृटियां एवं अशुद्धियां पर सभी को मार्गदर्शित किया।



श्री चरणजीत वर्मा जी ने हिंदी भाषा के व्याकरण पर चर्चा करते हुए हिंदी भाषा के उत्थान एवं विकास तथा इसके उत्तरोत्तर प्रयोग की दिशा में राजभाषा विभाग, गृह मंत्रालय द्वारा बनाए गए विभिन्न सॉफ्टवेयर की विस्तृत जानकारी भी दी।

इस कार्यशाला के अंतिम चरण में, संस्थान के हिंदी अधिकारी एवं संयुक्त कुलसचिव श्री लगवीश कुमार ने औपचारिक धन्यवाद ज्ञापित करते हुए श्री चरणजीत वर्मा जी का धन्यवाद ज्ञापित किया तथा सभी उपस्थितों को भी धन्यवाद किया। श्री लगवीश कुमार ने अपने विचार साझा करते हुए श्री चरणजीत वर्मा जी को अपना मार्गदर्शन इसी प्रकार संस्थान सदस्यों को प्रदान करने की अभिलाषा व्यक्त की। इस कार्यशाला का संचालन डॉ. गिरीश प्रमोदराव कठाणे, हिंदी अनुवादक ने किया।

भा.प्रौ.सं. रोपड़ में हिंदी कार्यशाला का आयोजन (दिनांक 06 दिसंबर 2022)

राजभाषा विभाग, गृह मंत्रालय, भारत सरकार के दिशा-निर्देशों के अनुपालन में हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड़ ने अक्टूबर-दिसंबर 2022 तिमाही के दौरान हिंदी कार्यशाला का आयोजन संपन्न किया। संस्थान का हिंदी प्रकोष्ठ प्रति तिमाही एक कार्यशाला का आयोजन संपन्न करता आ रहा है। इसी क्रम में, दिनांक 06 दिसंबर 2022 को आनलाइन माध्यम से हिंदी कार्यशाला का आयोजन किया गया। इस कार्यशाला का उद्देश्य संस्थान सदस्यों को हिंदी कंप्यूटिंग के विभिन्न आयामों से परिचित करना था। अतः इस विषय पर संस्थान सदस्यों का मार्गदर्शन करने हेतु श्री नरेन्द्र कुमार प्रसाद, उप निदेशक एवं मुख्य सूचना सुरक्षा अधिकारी, केंद्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार, नई दिल्ली को विशेष रुप से आमंत्रित किया गया था। इस कार्यशाला में संस्थान के कर्मचारियों ने बढ़-चढ़ कर अपनी सहभागिता दर्ज की।



इस कार्यशाला के आरंभिक चरण में, संस्थान के हिंदी अधिकारी एवं संयुक्त कुलसचिव श्री लगवीश कुमार ने औपचारिक स्वागत करते हुए श्री नरेन्द्र कुमार प्रसाद जी का भारतीय प्रौद्योगिकी संस्थान की ओर से स्वागत एवं अभिवादन किया।

अपने मार्गदर्शन पर वक्तव्य में श्री नरेन्द्र कुमार प्रसाद, उप निदेशक ने फॉन्ट कर्न्वटर, विभिन्न फोन्ट, वॉइस टाइपिंग आदि कई बिंदुओं पर सभी को मार्गदर्शित किया।



फोन्ट कर्न्वटर पर मार्गदर्शन करते हुए

वॉइस टाइपिंग पर जानकारी देते हुए

श्री नरेन्द्र कुमार प्रसाद जी ने फोन्ट कर्न्वटर से सत्र का आरंभ करते हुए सभी के साथ विभिन्न हिंदी फोन्ट यथा रेमिंगटन, इनस्क्रीप्ट, फोनेटिक आदि का परिचय देते हुए वॉइस टाइपिंग किस प्रकार कार्य करता है इसका डेमो विस्तार के साथ समझाया।

तत्पश्चात, कंठस्थ सॉफ्टवेयर के संबंध में भी जानकारी साझा करते हुए इसके भविष्यिक लाभों को भी चिन्हित किया। आमंत्रित वक्ता महोदय ने अनुवाद करते हुए दोनों भाषाओं पर समान अधिकार का महत्व पर सभी के साथ अपने विचार साझा किए। साथ ही, लिप्यांतरण और अनुवाद के अंतर को भी बहुत ही सरलता से स्पष्ट करते हुए यह भी बताया कि हिंदी कंप्यूटर की डिफोल्ट लैंग्वेज हो सकती है।



इस कार्यशाला के अंतिम चरण में, संस्थान के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे ने औपचारिक धन्यवाद ज्ञापित करते हुए श्री नरेन्द्र कुमार प्रसाद जी का धन्यवाद ज्ञापित किया तथा सभी उपस्थितों को भी धन्यवाद किया। डॉ. गिरीश ने अपने विचार साझा करते हुए श्री नरेन्द्र कुमार प्रसाद जी को अपना मार्गदर्शन इसी प्रकार संस्थान सदस्यों को प्रदान करने की अभिलाषा व्यक्त की। इस कार्यशाला का संचालन डॉ. गिरीश प्रमोदराव कठाणे, हिंदी अनुवादक ने किया।

भा.प्रौ.सं. रोपड़ में हिंदी कार्यशाला का आयोजन (दिनांक 17 मार्च 2023)

राजभाषा विभाग, गृह मंत्रालय, भारत सरकार के दिशा-निर्देशों के अनुपालन में हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड ने जनवरी-मार्च 2023 तिमाही के दौरान हिंदी कार्यशाला का आयोजन संपन्न किया। संस्थान का हिंदी प्रकोष्ठ प्रति तिमाही एक कार्यशाला का आयोजन संपन्न करता आ रहा है। इसी क्रम में, दिनांक 17 मार्च 2023 को आनलाइन माध्यम से हिंदी कार्यशाला का आयोजन किया गया। इस कार्यशाला का उद्देश्य संस्थान सदस्यों को तकनीक के साथ हिंदी में कार्य करने में निपुण बनाना था।

उपर्युक्त उद्देश्य की पूर्ति हेतु संस्थान सदस्यो का मार्गदर्शन करने हेतु श्री धमेंद्र कुमार, सहायक निदेशक, केंद्रीय हिंदी प्रशिक्षण संस्थान, राजभाषा विभाग, गृह मंत्रालय, भारत सरकार, नई दिल्ली को विशेष रुप से आमंत्रित किया गया था। श्री धमेंद्र कुमार, सहायक निदेशक ने कार्यालयीन कामकाज करते समय

"अंकों का अपनी भाषा में अनुवाद कैसे करें" इस विषय पर विस्तार से मार्गदर्शन किया। इस कार्यशाला में संस्थान के कर्मचारियों ने बढ़-चढ़ कर अपनी सहभागिता दर्ज की।

उक्त कार्यशाला में भारतीय प्रौद्योगिकी संस्थान रोपड़ के कर्मचारियों के साथ-साथ नगर राजभाषा कार्यान्वयन समिति रुपनगर के सदस्य कार्यालयों/बैंको के इच्छुक सदस्य भी जुड़े।

इस कार्यशाला के आरंभिक चरण में, संस्थान के हिंदी अनुवादक ने औपचारिक स्वागत करते हुए श्री धमेंद्र कुमार जी का भारतीय प्रौद्योगिकी संस्थान की ओर से स्वागत एवं अभिवादन किया। साथ ही, नराकास रुपनगर के सदस्य सचिव श्री प्रदीप चतुर्वेदी जी का भी हार्दिक स्वागत किया।

अपने मार्गदर्शन पर वक्तव्य में श्री धमेंद्र कुमार, सहायक निदेशक ने सभी के साथ कार्यशाला के विषय पर चर्चा की।

सॉफ्टवेयर के माध्यम से अंकों के अनुवाद का निष्पादन दिखाते हुए

श्री धमेंद्र कुमार जी ने अपनी भाषा में अंको के अनुवाद हेतु सॉफ्टवेयर के डाउनलोड करने की प्रक्रिया से आरंभ करते हुए इसके प्रयोग

द्वारा निष्पादन तक को विस्तार के साथ समझाया। साथ ही, सभी से इसका अभ्यास भी करवाया गया। इस कार्यशाला के अंतिम चरण में, संस्थान के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे ने नराकास रुपनगर के सदस्य सचिव श्री

प्रदीप चतुर्वेदी जी को इस अवसर पर संक्षिप्त मार्गदर्शनपरक संबोधन हेतु आमंत्रित किया।

श्री प्रदीप चतुर्वेदी जी ने दैनंदिन कार्यालयीन कामकाज की आवश्यकताओं, समस्याओं पर इस प्रकार की कार्यशाला करने हेतु तथा इस कार्यशाला में नराकास रुपनगर को आमंत्रित करने हेतु भारतीय प्रौद्योगिकी संस्थान रोपड़ का धन्यवाद किया। डॉ. गिरीश कठाणे द्वारा आमंत्रित वक्ता महोदय तथा उपस्थितों का धन्यवाद ज्ञापन के साथ कार्यशाला समाप्त हुई।









हिंदी पखवाड़ा 2022 का आयोजन

भारतीय प्रौद्योगिकी संस्थान रोपड़ ने हिंदी दिवस के उपलक्ष्य पर 15 दिवसीय हिंदी पखवाड़ा 2022 का आयोजन सफलतापूर्वक संपन्न किया। यह पखवाड़ा 14 सितंबर 2022 से 28 सितंबर 2022 तक आयोजित किया गया था। इस पखवाड़ा के दौरान संस्थान के विद्यार्थियों के लिए कुल 06 प्रतियोगिताएं, संस्थान के संकाय सदस्य एवं कर्मचारियों के लिए कुल 09 प्रतियोगिताएं, सुरक्षा/सफाइ/परिचारकों के लिए 01 प्रतियोगिता तथा संस्थान सदस्यों के बच्चों एवं परिवारजनों के लिए 01 प्रतियोगिता आयोजित की गई थी।

हिंदी पखवाड़ा 2022 का उद्घाटन समारोह दिनांक 14 सितंबर 2022 को मुख्य अतिथि डॉ. तारो सिंदिक (साहित्य अकादेमी युवा पुरस्कार से पुरस्कृत), अरुणाचल प्रदेश, भारत तथा संस्थान के निदेशक प्रोफेसर राजीव आहूजा जी की गरिमामयी उपस्थिति में संपन्न हुआ।



इस अवसर पर सर्वप्रथम प्रो. नवीन कुमार ने माननीय मंत्री महोदय, शिक्षा, कौशल और उद्यमशीलता, भारत सरकार के संदेश का वाचन किया।

इस अवसर पर अधिष्ठाता (संकाय मामले एवं प्रशासन) प्रो. मनोरंजन मिश्रा ने हिंदी प्रकोष्ठ की गतिविधियों पर संक्षिप्त जानकारी प्रस्तुत करते हुए सभी को इस बात से अवगत कराया कि संस्थान को राजभाषा हिंदी में श्रेष्ठ कार्य करने हेतु नराकास, रुपनगर की वित्तीय वर्ष 2019-20, 2020-21 तथा 2021-22 के लिए द्वितीय राजभाषा शील्ड हेतु चयनित किया गया है। इसके लिए प्रो. मिश्रा ने हिंदी प्रकोष्ठ के कार्यों की सराहना एवं प्रशंसा की।



प्रो. मनोरंजन मिश्रा हिंदी पखवाड़ा का संक्षिप्त परिचय देते हुए

हिंदी पखवाड़ा उद्घाटन समारोह के मुख्य अतिथि डॉ. तारो सिंदिक ने अपने हिंदी भाषा के विकास तथा इसके उत्तरोत्तर प्रयोग की दिशा में अपने विचार व्यक्त किए। साथ ही, अरुणाचल प्रदेश के साथ साथ- पूर्वोत्तर राज्यों में हिंदी के विकास पर भी प्रकाश डाला।



मुख्य अतिथि डॉ. तारो सिंदिक विचार व्यक्त करते हुए

हिंदी पखवाड़ा 2022 का शुभारंभ संस्थान के माननीय निदेशक प्रो. राजीव आहूजा के संबोधन से हुआ। इस अवसर पर प्रो. आहूजा महोदय ने सर्वप्रथम डॉ. सिंदिक जी का संस्थान सदस्यों की ओर से स्वागत एवं अभिवादन किया। अपने विचारों को साझा करते हुए प्रो. आहुजा जी ने राष्ट्रीय तथा अंतर्राष्ट्रीय स्तर पर हिंदी के महत्व पर प्रकाश डालते हुए संस्थान के सभी सदस्यों से हिंदी में अधिक से अधिक कार्य करने की अपील की।

इस पखवाड़ा के उद्घाटन समारोह के बाद अगले 15 दिनों तक विभिन्न श्रेणियो में विभिन्न प्रतियोगिताओं का दौर चलता रहा जिसमें संस्थान के विद्यार्थियों, संकाय सदस्यों एवं कर्मचारियों ने न केवल अपनी उत्साहजनक सहभागिता दिखाई अपितु अपने कलागुणों को भी सभी के समक्ष रखा जो इस पखवाड़े के आयोजन का मुख्य उद्देश्य था।

इस पखवाड़ा का समापन समारोह दिनांक 29 सितंबर 2022 को संपन्न हुआ जिसमें विजेताओं को संस्थान के माननीय निदेशक महोदय द्वारा पुरस्कार प्रदान किए गए। इस अवसर पर प्रो. राजीव आहूजा ने सभी विजेताओं का अभिनंदन किया।



हिंदी पखवाड़ा 2022 के समापन समारोह की मुख्य अतिथि श्रीमती इंदिरा दांगी जी ने इस अवसर पर बड़े ही रोचक ढंग से हिंदी भाषा के विकास पर प्रकाश डाला तथा सभी से अपील की कि वे बोलचाल की भाषा के रुप में अपनी-अपनी मातृभाषा में अधिकाधिक प्रयोग को सुनिश्चित करें।

डॉ. दिनेश के. एस, कार्यवाहक कुलसचिव ने इस अवसर पर सभी का धन्यवाद ज्ञापित किया। अपने धन्यवाद ज्ञापन में कुलसचिव महोदय ने संस्थान की विभिन्न हिंदी गतिविधियों एवं उत्तरोत्तर प्रगति की सराहना एवं प्रशंसा की।





प्रो. राजीव आहूजा, निदेशक, भा.प्रौ.सं. रोपड़ हिंदी पखवाड़ा समापन समारोह को संबोधित करते हुए

समारोह की मुख्य अतिथि श्रीमती इंदिरा दांगी विचार व्यक्त करते हुए



डॉ. अभिषेक तिवारी, (संकाय प्रभारी हिंदी) औपचारिक स्वागत भाषण करते हुए



डॉ. दिनेश के. एस., कार्यवाहक कुलसचिव धन्यवाद ज्ञापित करते हए



संस्थान के कर्मचारी पुरस्कार लेते हुए

हिंदी पखवाड़ा समापन समारोह के कुछ क्षण



संस्थान के विद्यार्थी पुरस्कार लेते हुए



संस्थान के सफाई/सुरक्षा/बागबानी कर्मचारी पुरस्कार लेते हुए



माननीय निदेशक महोदय द्वारा पुरस्कार प्राप्त करते हुए

🗩 भा.प्रौ.सं. रोपड़ में मातृभाषा दिवस का आयोजन

भाषा प्रभाग, उच्चतर शिक्षा विभाग, शिक्षा मंत्रालय, भारत सरकार द्वारा प्राप्त दिशा-निर्देशों के अनुपालन में भारतीय प्रौद्योगिकी संस्थान रोपड़, रुपनगर, पंजाब में दिनांक 21 फरवरी, 2023 को मातृभाषा दिवस का आयोजन किया गया।

संस्थान के हिंदी प्रकोष्ठ ने इस अवसर पर संस्थान के संकाय सदस्यों एवं कर्मचारिगणों हेतु मातृभाषा में कविता एवं गीत गायन प्रतियोगिता का आयोजन किया। इस अवसर पर संस्थान के संकाय सदस्यों एवं कर्मचारिगणों ने बढ़-चढ़ कर हिस्सा लिया।

उक्त प्रतियोगिता में सभी प्रतिभागियों ने अपनी मातृभाषा में कविता पाठ एवं गीत गायन किया वहीं कुछ प्रतिभागियों अपने द्वारा स्वरचित एवं स्वरबद्ध कविता का पाठ कर मातृभाषा दिवस के अवसर पर अपनी प्रतिभा को सभी के सम्मुख रखा। सभी प्रतिभागियों ने अपनी-अपनी मातृभाषा में प्रस्तुति से मातृभाषा दिवस की सार्थकता को सिद्ध किया।

इस अवसर पर संकाय/कर्मचारियों के लिए आयोजित प्रतियोगिता के मूल्यांकन हेतु डॉ. इंद्रमनी धादा, डॉ. स्वाति ए. पटेल, डॉ. परविंदर सिंह, डॉ. कलाइ सेल्वी, डॉ. प्रिंस कुमार सिंह विशेष रूप से आमंत्रित थें वहीं विद्यार्थियों के लिए आयोजित प्रतियोगिता हेतु डॉ. इंद्रमनी धादा, डॉ. स्वाति ए. पटेल, डॉ. प्रिंस कुमार सिंह, डॉ. कलाइ सेल्वी, डॉ. पुतुल हलदार, डॉ. राजीव कुमार को आमंत्रित किया गया था।

विद्यार्थियों में श्री गणेश मुन्नर को प्रथम पुरस्कार, श्री अमित शाक्य को द्वितीय पुरस्कार, श्री आयुष प्रताप को तृतीय पुरस्कार तथा प्रोत्साहन पुरस्कार हेतु श्री आदित्य, सुश्री शिवानी वर्ष्णिय, सुश्री कीर्ति सक्सेना, तथा शंकर को पुरस्कार प्रदान किए गए।



परीक्षक पैनल से पुरस्कार प्राप्त करते हुए विजेता विद्यार्थी

विद्यार्थियों के साथ-साथ संस्थान के संकाय सदस्यों / कर्मचारियों के लिए आयोजित मातृभाषा में गीत गायन एवं कविता पाठ प्रतियोगिता में संस्थान के कर्मचारियों एवं संकाय सदस्यों ने बढ़-चढ़ कर हिस्सा लिया।

सभी ने अपनी अपनी मातृभाषा में गीत एवं कविता की प्रस्तुति से स्व मातृभाषा के प्रति अपने प्रेम को न केवल व्यक्त किया अपितु अपने भाषायी गौरव को सभी के सम्मुख रखने का प्रयास भी किया।

परीक्षक पैनल द्वारा संकाय/कर्मचारियों के लिए आयोजित प्रतियोगिता में सुश्री गुरप्रीत कौर (चिकित्सा केंद्र) और श्री संदीप सिकंदर (रखरखाव) को संयुक्त रुप से प्रथम पुरस्कार, कमलजीत (अनुसंधान एवं विकास अनुभाग) को द्वितीय पुरस्कार, डॉ. तरविंदर सिंह हांडा (केंद्रीय पुस्तकालय) को तृतीय पुरस्कार, डॉ. हिमांशु त्यागी (सह प्राध्यापक, यांत्रिक अभियांत्रिकी विभाग) और डॉ. हरप्रीत कौर (केंद्रीय (पुस्तकालय) को प्रोत्साहन पुरस्कार हेतु चयनित किया गया।

विद्यार्थियों एवं कर्मचारियों के लिए आयोजित दोनों प्रतियोगिता के विजेताओं को पठनीय एवं संग्रहणीय हिंदी साहित्य की पुस्तकें पुरस्कार स्वरुप प्रदान की गई।



परीक्षक पैनल से पुरस्कार प्राप्त करते हुए विजेता संकाय/कर्मचारी

भा.प्रौ.सं. रोपड़ में स्वतंत्रता दिवस के उपलक्ष्य में देशभक्ति गीत गायन प्रतियोगिता का आयोजन

हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड़ ने प्रतिवर्ष की तरह इस वर्ष भी स्वतंत्रता दिवस के उपलक्ष्य में संस्थान सदस्यों के लिए देशभक्ति गीत गायन प्रतियोगिता का आयोजन किया। यह प्रतियोगिता संस्थान के विद्यार्थी और कर्मचारी ऐसी दो श्रेणियों में पुरस्कार राशि के साथ आयोजित की गई।

इस अवसर पर संस्थान सदस्यों द्वारा अच्छी सहभागिता देखी गई। विद्यार्थियों तथा कर्मचारी सदस्यों ने देशभक्तिपरक गीतों की प्रस्तुति से न केवल अपने कलागुणों को सभी के समक्ष रखा बल्कि पूरा वातावरण देशभक्ति के रंग में रंग दिया।



इस अवसर पर प्रतियोगिता के मूल्यांकन हेतु परीक्षक मंडल के रुप में डॉ. अभिषेक तिवारी, संकाय प्रभारी हिंदी और डॉ. सम दर्शी, सहायक प्राध्यापक, विद्युत अभियांत्रिकी विभाग को आमंत्रित किया गया था।

कार्यक्रम के अंतिम चरण में, दोनों परीक्षकों ने सभी प्रतिभागियों द्वारा दी गई प्रस्तुति की प्रशंसा एवं सराहना की।

विद्यार्थी श्रेणी में प्रमथ पुरस्कार सुश्री अपूर्वा शेखर (मानविकी एवं सामाजिक विज्ञान), द्वितीय पुरस्कार श्री सत्यम शर्मा (भौतिक विभाग), तृतीय पुरस्कार श्री अभिषेक कुमार (भौतिक विभाग), प्रोत्साहन पुरस्कार संयुक्त रुप से श्री शुभम (सिविल अभि. विभाग) और सुश्री आकर्षि रॉय (विद्युत अभि. विभाग) तथा प्रोत्साहन पुरस्कार श्री ईशांत सिहाग (कंप्यूटर विज्ञान एवं अभि. विभाग) को प्रोत्साहन पुरस्कार प्रदान किया गया।

कर्मचारी श्रेणी में श्री तरविंदर सिंह हांडा (केंद्रीय पुस्तकालय) को प्रथम पुरस्कार और श्री देवेंद्र कुमार (विद्युत अभि. विभाग) को द्वितीय पुरस्कार हेतु चयनित किया गया। इस प्रतियोगिता का संचालन संस्थान के हिंदी अनुवादक डॉ. गिरीश प्रमोदराव कठाणे ने किया।

भा.प्रौ.सं. रोपड़ में गणतंत्र दिवस के उपलक्ष्य में देशभक्ति गीत गायन प्रतियोगिता का आयोजन

74वें गणतंत्र दिवस के उपलक्ष्य पर भा.प्रौ.सं. रोपड़ के हिंदी प्रकोष्ठ द्वारा संस्थान के विद्यार्थियों तथा संकाय सदस्य एवं कर्मचारिगणों के लिए देशभक्ति गीत गायन एवं कविता पाठ प्रतियोगिता का आयोजन किया गया।



दिनांक 24 जनवरी 2023 को संस्थान के विद्यार्थियों के लिए आयोजित की गई इस प्रतियोगिता में संस्थान के विभिन्न विभागों के विद्यार्थियों / शोधार्थियों ने सहभागिता ली वहीं दिनांक 25.01.2023 को संस्थान के कर्मचारियों ने इस प्रतियोगिता में अपने देशभक्तिपरक गीतों से पूरा वातावरण देशभक्तिमय कर दिया।

दोनों दिन प्रतियोगिता का शुभारंभ हिंदी प्रकोष्ठ के संकाय प्रभारी डॉ. अभिषेक तिवारी द्वारा सभी को संबोधित करने के साथ हुआ।

दिनांक 24 जनवरी 2023 को आयोजित प्रतियोगिता में संस्थान के विभिन्न विभागों के

विद्यार्थियों ने अपने देशभक्ति गीतों से पूरा वातावरण गणतंत्र दिवस की पूर्व संध्या पर देशभक्ति के रंग में रंग दिया। कुछ प्रतिभागियों ने स्वरचित तो कुछ ने अन्यों की कविताओं एवं गीतों की प्रस्तुति से देश के प्रति अपनी निस्वार्थ भावनाओं को सभी के समक्ष बड़े ही गर्व के साथ रखा।



प्रतियोगिता में अपनी प्रस्तुति देते हुए संस्थान के विद्यार्थीगण

इस अवसर पर संस्थान के यांत्रिक अभियांत्रिकी विभाग के सह प्राध्यापक डॉ. हिमांशु त्यागी, विद्युत अभियांत्रिकी विभाग के सहायक प्राध्यापक डॉ. सम दर्शी तथा यांत्रिक अभियांत्रिकी विभाग के सहायक प्राध्यापक डॉ. चंद्रकांत कुमार निराला परीक्षक के रुप में विशेष रुप से आमंत्रित थे।



परीक्षक पैनल के रुप में डॉ. सम दर्शी, डॉ हिमांशु त्यागी तथा डॉ. चंद्रकांत निराला (बाई ओर से)

प्रतियोगिता के अंतिम चरण में, प्रतियोगिता के परीक्षक पैनल के सदस्यों ने सभी प्रतिभागियों के प्रस्तुति पर विशेष टिप्पणी के साथ सभी का उत्सावर्धन किया। साथ ही, गायन की गुणवत्ता, शब्दों का उच्चारण तथा प्रस्तुति की शैली आदि मानकों पर मूल्यांकन के साथ परीक्षक पैनल ने विजेताओं के नामों की घोषणा की।

इस प्रतियोगिता में रासायनिक अभियांत्रिकी विभाग की छात्रा सुश्री चाहत को प्रथम पुरस्कार, गणित विभाग के छात्र श्री जयसन थॉमस को द्वितीय पुरस्कार, विद्युत अभियांत्रिकी विभाग की छात्रा सुश्री अदिती सैनी को तृतीय पुरस्कार वहीं कंप्यूटर विज्ञान एवं अभियांत्रिकी विभाग की छात्रा सुश्री मनप्रीत कौर और धातुकी एवं पदार्थ अभियांत्रिकी विभाग के छात्र श्री आयुष प्रताप दोनों को प्रोत्साहन पुरस्कार हेतु चयनित किया गया।

दिनांक 25 जनवरी 2023 को आयोजित प्रतियोगित में संस्थान के विभिन्न विभागों / अनुभाग/प्रकोष्ठ के कर्मचारियों ने अपने देशभक्ति गीतों की प्रस्तुति से समा बांध दिया। संस्थान के कर्मचारी वर्ग हेतु आयोजित प्रतियोगिता में संस्थान के यांत्रिक अभियांत्रिकी विभाग के सह प्राध्यापक डॉ. अनुपम अग्रवाल, यांत्रिक अभियांत्रिकी विभाग के प्रोफेसर प्रो. नवीन कुमार तथा रसायन विज्ञान विभाग के प्रोफेसर प्रो. नरिंदर सिंह परीक्षक पैनल के सदस्य के रुप में उपस्थित थे।

डॉ. तरविंदर सिंह हांडा (पुस्तकालय सूचना अधिकारी, केंद्रीय पुस्तकालय) को प्रथम पुरस्कार, श्रीमती प्रीतेंदर कौर (जनसंपर्क अधिकारी) को द्वितीय पुरस्कार, श्री रविंद्र कुमार (अनुसंधान एवं विकास अनुभाग) को तृतीय पुरस्कार हेतु चयनित किया गया वहीं कार्य एवं संपदा अनुभाग के श्री अभिनव राज (कनिष्ठ अभियंता (विद्युत)) और यांत्रिक अभियांत्रिकी विभाग के सह प्राध्यापक डॉ. हिमांशु त्यागी को प्रोत्साहन पुरस्कार प्रदान किया गया।

दिनांक 24 जनवरी तथा 25 जनवरी को आयोजित प्रतियोगिताओं के विजेताओं को प्रतियोगिता की समाप्ति पर परीक्षक पैनल द्वारा संस्थान के निदेशक प्रो. राजीव आहूजा ने दिनांक 26 जनवरी 2023 को संपन्न गणतंत्र विजेताओं के नामों की घोषणा की गई। दिवस समारोह में पुरस्कार प्रदान किए गए।





निदेशक, भा.प्रौ.सं. रोपड़ द्वारा पुरस्कार प्राप्त करते हुए अधिकारी/कर्मचारी



निदेशक, भा.प्रौ.सं. रोपड़ द्वारा पुरस्कार प्राप्त करते हुए विद्यार्थी

नगर राजभाषा कार्यान्वयन समिति रुपनगर की गतिविधियों में भा.प्रौ.सं. रोपड़

भा.प्रौ.सं. रोपड़ में नराकास रुपनगर की अर्धवार्षिक बैठक का आयोजन

नराकास रुपनगर की अर्धवार्षिक बैठक का आयोजन भारतीय प्रौद्योगिकी संस्थान रोपड़ में संपन्न हुआ। इस बैठक में आई.आई.टी. रोपड़ के निदेशक प्रोफेसर राजीव आहूजा विशेष आमंत्रित के रुप में निमंत्रित थे। वहीं बैठक में पर्यवेक्षक के रुप में श्री कुमार पाल शर्मा, उप निदेशक (कार्यान्वयन), राजभाषा विभाग, गृह मंत्रालय, भारत सरकार, नई दिल्ली और श्री मनमीत एस व्यास, उप महाप्रबंधक एवं अंचल प्रबंधक, यूको बैंक, चण्डीगढ़ तथा नराकास रुपनगर के अध्यक्ष श्री अमिष नाथ झा विशेष रुप से उपस्थित थे।

बैठक में पर्यवेक्षक के रुप में श्री कुमार पाल शर्मा, उप निदेशक (कार्यान्वयन), राजभाषा विभाग, गृह मंत्रालय, भारत सरकार, नई दिल्ली ने नराकास रुपनगर के अंतर्गत आने वाले सभी संस्थानों/कार्यालयों/बैंकों की अर्धवार्षिक रिपोर्ट की समीक्षा की तथा आवश्यक स्थानों को इंगित करते हुए हिंदी में कार्य के अपने प्रतिशत को किस प्रकार बढ़ाया जा सकता है इसपर सभी नराकास रुपनगर के सदस्यों का मार्गदर्शन किया।

इस अवसर पर आई.आई.टी. रोपड़ के निदेशक प्रोफेसर राजीव आहूजा जी ने श्री कुमार पाल शर्मा जी का स्वागत किया तथा प्रोफेसर आहूजा जी ने उपस्थित सदस्यों को संबोधित करते हुए अपने अपने कार्यालयों में हिंदी के प्रचार-प्रसार को बढ़ावा देने हेतु आवश्यक कदम उठाने की अपील की। प्रोफेसर राजीव आहूजा जी ने आई.आई.टी रोपड़ में राजभाषा तथा हिंदी के प्रति सदस्यों के रुझानों को ध्यान में रखते हुए की गई पहलों की भी विस्तृत जानकारी सभी नराकास सदस्यों को दी।



होली के पावन अवसर पर नराकास रुपनगर के सदस्य कार्यालयों के लिए हिंदी गीत गायन प्रतियोगिता

दिनांक 17 अक्टूबर 2022 को आई.आई.टी. रोपड़ में आयोजित नराकास रुपनगर की संपन्न अर्धवार्षिक बैठक में लिए गए निर्णय के अनुपालन में, भारतीय प्रौद्योगिकी संस्थान रोपड़ ने नगर राजभाषा कार्यान्वयन समिति रुपनगर के संयुक्त तत्वावधान में दिनांक 06 मार्च 2023 को आनलाइन माध्यम से हिंदी गीत गायन प्रतियोगिता का आयोजन किया। यह प्रतियोगिता नराकास रुपनगर के अंतर्गत आनेवाले सभी सदस्य कार्यालयों के सदस्यों के लिए आयोजित की गई थी।

इस प्रतियोगिता में नराकास रुपनगर के अध्यक्ष श्री अमिष नाथ झा और नराकास रुपनगर के सदस्य सचिव प्रदीप चतुर्वेदी परीक्षक पैनल के रुप में उपस्थित थे। प्रतियोगिता के आरंभ में श्री अमिष नाथ झा (अध्यक्ष, नराकास) और श्री प्रदीप चतुर्वेदी (सदस्य सचिव) ने अपने संबोधन से सभी प्रतिभागियों का उत्साहवर्धन किया।



इस अवसर पर विशेष रुप से भा.प्रौ.सं. रोपड़ के संकाय प्रभारी हिंदी डॉ. अभिषेक तिवारी ने सभी सदस्यों का औपचारिक स्वागत किया तथा अपने रोचक संबोधन से कार्यक्रम की सफल शुरुवात की।



डॉ. अभिषेक तिवारी, संकाय प्रभारी (हिंदी) औपचारिक स्वागत करते हुए

इस प्रतियोगिता में **यूनियन बैंक आफ इंडिया रोपड़ शाखा से** श्री अशोक सबलोक, प्रबंधक (प्रबंधक), श्रीमती लवलीन नागर (प्रबंधक) के साथ-साथ **क्षेत्रीय कार्यालय, लुधियाना से** श्री अंबुज तिवारी, श्री राजेश्वर राठौड़, तथा श्री होरचम ने अपनी स्वैच्छिक प्रस्तुति दी। **जवाहर नवोदय विद्यालय संधुआं, रुपनगर से** श्रीमती ज्योति रानी (प्रशिक्षित स्नातक शिक्षिका), **यूको बैंक से** श्री अजय कुमार शर्मा (प्रबंधक), श्री एस एन पासवान (हेड कैशियर), **एन एफ एल, नंगल इकाई से** श्री मनोज कुमार सिंह (प्रबंधक), श्री चंद्रप्रमोद (वरिष्ठ इंजिनियरिंग सहायक), श्री संजीव कुरालिया (सहा. अधिकारी), श्रीमती मीरा देवी (सहायक प्रबंधक), श्री कुलदीप सरोवा, **नाइलेट रोपड़ से** श्रीमती रेनू वासनन (वैज्ञानिक डी), डॉ. सुनिता चिब (वैज्ञानिक डी), श्री रमिंदर सिंह (वैज्ञानिक डी) तथा **भारतीय प्रौद्योगिकी संस्थान रोपड़ से** डॉ. तरविंदर सिंह हांडा (पुस्तकालय सूचना अधिकारी), श्री विपिन कुमार (लेखा अधिकारी) ने सहभागिता ली।



प्रतिभागीगण प्रस्तुति देते हुए

कार्यक्रम को समाप्ति की ओर ले जाते हुए एन.एफ.एल नंगल इकाई की राजभाषा अधिकारी श्रीमती सीमा कौशल ने परीक्षक पैनल तथा सभी प्रतिभागियों का अपनी सहभागिता से इस प्रतियोगिता को सफल बनाने हेतु औपचारिक धन्यवाद ज्ञापित किया। इस कार्यक्रम का संचालन डॉ. गिरीश प्रमोदराव कठाणे (हिंदी अनुवादक, भा.प्रौ.सं. रोपड़) ने किया।

राजभाषा ज्ञान प्रतियोगिता में संस्थान के सदस्यों की सहभागिता

यूको बैंक द्वारा नगर राजभाषा कार्यान्वयन समिति रुपनगर के सभी सदस्य कार्यालयों के आयोजित राजभाषा ज्ञान प्रतियोगिता में भा.प्रौ.सं. रोपड़ के तीन सदस्यों ने सहभागिता सुनिश्चित की।

यह प्रतियोगिता दिनांक 12 जनवरी 2023 को आनलाइन माध्यम से आयोजित की गई जिसमें सुश्री पूजा पाण्डेय, सुश्री समिता सैनी तथा श्री देवेन्द्र कुमार ने सहभागिता ली।

एन.एफ.एल. नंगल इकाई द्वारा आयोजित हिंदी संगोष्ठी में संस्थान सदस्यों की सहभागिता

एन.एफ.एल. नंगल इकाओई द्वारा नराकास रुपनगर के सदस्य कार्यालयों के लिए दिनांक 20 जनवरी 2023 को वर्तमान शताब्दी में हिंदी का व्यवहारिक प्रयोग विषय पर हिंदी संगोष्ठी का आयोजन किया गया।

भा.प्रौ.सं. रोपड़ की ओर से श्री विजय कुमार (अधीक्षक, भंडार एवं क्रय अनुभाग) और श्री सौरभ भाटिया (कनि. सहायक, भंडार एवं क्रय अनुभाग) ने सहभागिता ली। साथ ही संस्थान के हिंदी अनुवादक डॉ. गिरीश कठाणे ने भी इस संगोष्ठी में अपनी उपस्थिति दर्ज की।

भारतीय स्टैट बैंक/राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान द्वारा आयोजित तकनीकी कार्यक्रम में भा.प्रौ.सं. रोपड़ की सहभागिता

भारतीय स्टैट बैंक/राष्ट्रीय इलेक्ट्रॉनिकी एवं सूचना प्रौद्योगिकी संस्थान द्वारा दिनांक 28 फरवरी 2023 को कंप्यूटर/मोबाइल पर राजभाषा हिंदी/पंजाबी और अंग्रेजी से हिंदी/पंजाबी और विलोमतः विषय पर तकनीकी कार्यक्रम का आयोजन किया गया।



भारतीय प्रौद्योगिकी संस्थान रोपड़ की ओर से श्री गुरदीप सिंह (कनि. अधीक्षक, विद्यार्थी मामले) और सुश्री जसप्रीत कौर (कनि. सहायक, गणित विभाग) ने इस तकनीकी कार्यक्रम में सहभागिता लेकर इसका लाभ लिया।

श्रीमती अमृता प्रीतम हिंदी व्याख्यानमाला का आयोजन (दिनांक 5 जुलाई 2022)

श्रीमती अमृता प्रीतम हिंदी व्याख्यानमाला के अंतर्गत पंचम व्याख्यान संपन्न

हिंदी प्रकोष्ठ, भा.प्रौ.सं. रोपड़ ने श्रीमती अमृता प्रीतम हिंदी व्याख्यानमाला के अंतर्गत दिनांक 5 जुलाई 2022 को आभासीय रूप में पंचम व्याख्यान का आयोजन किया। इस व्याख्यानमाला में आमंत्रित वक्ता के रूप में डॉ. भीमराव अंबेडकर महाविद्यालय, श्री गंगानगर, राजस्थान के संस्कृत विभाग क एसोसिएट प्रोफेसर एवं विभागप्रमुख डॉ. घनश्याम बैरवा जी को आमंत्रित किया गया था।

इस अवसर पर भारतीय प्रौद्योगिकी संस्थान रोपड़ के निदेशक प्रोफेसर राजीव आहूजा जी ने अपने विशेष संबोधन से इस कार्यक्रम की शोभा बढ़ाई। अपने व्याख्यान में आमंत्रित वक्ता डॉ. घनश्याम बैरवा ने संस्कृत के उद्भव एवं विकास पर बात की। अपने विचार को साझा करते हुए डॉ. बैरवा ने संस्कृत का अन्य भाषाओं से साथ जो सहसंबंध पर भी प्रकाश डाला। साथ ही, डॉ. बैरवा ने भारतीय इतिहास में संस्कृत के भाषायी एवं सांस्कृतिक योगदान के साथ-साथ आधुनिक काल में इसकी प्रांसगिकता पर विशेष रुप से अपने विचार साझा किए।



इस अवसर पर, अपने विशेष संबोधन में संस्थान के निदेशक प्रोफेसर राजीव आहूजा ने सर्वप्रथम डॉ. बैरवा का धन्यवाद ज्ञापित किया कि उन्होंने संस्कृत की प्राचीन और प्रांसगिकता पर संस्थान सदस्यों का मार्गदर्शन किया। अपने विचारों को साझा करते हुए प्रोफेसर आहूजा ने कंप्यूटर संबंधित कार्यों विशेष रुप से कृत्रिम बुद्धिमत्ता में संस्कृत भाषा की महती भूमिका पर अपने विचार व्यक्त किए। साथ ही, सभी से अपील की कि हमें सभी भारतीय भाषाओं के साथ-साथ संस्कृत जो कि सभी भाषाओं की जननी है उसके प्रयोग को बढ़ाने की दिशा में अपना योगदान देना चाहिए।



इस व्याख्यानमाला का संचालन डॉ. अभिषेक तिवारी, संकाय प्रभारी हिंदी ने किया। अपने सूत्र- संचालन के दौरान डॉ. अभिषेक तिवारी ने कहा कि आनेवाले भविष्य में संस्कृत केवल एक कुलीन भाषा ही न रहे अपितु हम सभी इस भाषा में संगीत का आस्वाद ले, फिल्मे देख सकें।

इस कार्यक्रम का धन्यवाद ज्ञापन संस्थान के वरिष्ठ लेखापरीक्षा अधिकारी श्री बी. बी. करवल ने किया। आमंत्रित वक्ता, संस्थान के निदेशक तथा उपस्थितों का धन्यवाद ज्ञापन करते हुए इस बात का उल्लेख किया संस्थान के निदेशक प्रोफेसर राजीव आहूजा जी के नेतृत्व यह संस्थान संस्कृत, हिंदी, पंजाबी तथा सभी भारतीय भाषाओं के उत्थान को लेकर सजग है।

🕨 राजभाषा सम्मेलनों में संस्थान की सहभागिता



द्वितीय अखिल भारतीय राजभाषा सम्मेलन, सूरत, गुजरात

दिनांक 14-15 सितम्बर, 2022 को गुजरात राज्य के सूरत में माननीय गृह एवं सहकारिता मंत्री श्री अमित शाह जी की अध्यक्षता में संपन्न हिंदी दिवस तथा द्वितीय अखिल भारतीय राजभाषा सम्मेलन में डॉ. अभिषेक तिवारी, संकाय प्रभारी हिंदी, भा.प्रौ.सं. रोपड़ ने सहभागिता ली।

संयुक्त क्षेत्रीय राजभाषा सम्मेलन, अमृतसर, पंजाब

दिनांक 03 नवंबर, 2022 को पंजाब राज्य के अमृतसर में माननीय गृह राज्य मंत्री श्री अजय कुमार मिश्रा जी की अध्यक्षता में संपन्न एक दिवसीय संयुक्त क्षेत्रीय राजभाषा सम्मेलन में प्रोफेसर नवीन कुमार, यांत्रिक अभियांत्रिकी विभाग, भा.प्रौ.सं. रोपड़ ने सहभागिता ली।



सम्मेलन के दौरान नराकास रुपनगर राजभाषा शील्ड से पुरस्कृत

वर्ष 2021-22 "ख" क्षेत्र में नराकास वर्ग में नराकास रुपनगर को प्रथम क्षेत्रीय राजभाषा पुरस्कार प्राप्त हुआ।











DEPARTMENT OF BIOMEDICAL ENGINEERING

Programs offered	:	M.Tech. and PhD	
No. of Students	:	M.Tech. : 23	
	:	PhD : 44	
Head of the Department	:	Dr. Rajesh Kumar	
No. of faculty members	:	Core Faculty - 7	
	:	Associate Faculty - 7	
No. of staff members	:	2	
		Technical Staff : 1	
		Administrative Staff : 1	
Thrust Area	:	Healthcare, Medical Devices, Biomaterials and	
	Tissue, Engineering, Biomedical- Photonics,		
		Cancer, Diagnostics, Immunology	
No. of Publications	:	54	


signal processing

CORE FACULTY



DR. ASHISH K SAHANI Assistant Professor Ph.D. (Indian Institute of Technology Madras) *Diagnostic and therapeutic ultrasound, Biomedical instrumentation, and Medical*



DR. DURBA PAL Assistant Professor Ph.D. (Visva Bharti University, Santiniketan) *Tissue engineering and Regenerative Medicine, Cell based Therapeutics in disease biology.*



DR. RAJESH KUMAR Assistant Professor Ph.D.(Norwegian University of Science and Technology Norway) Biomedical-Photonics, Bioimaging, Microscopy and Spectroscopy.



DR. BODHISATWA DAS

Assistant Professor Ph.D (IIT Kharagpur) Research Area: Biomaterials, Tissue Engineering, Nanomedicine, In Vitro Organ Models]



DR. ATHARVA POUNDARIK

Assistant Professor Ph.D (Rensselaer Polytechnic Institute, USA) (Joint with Dept. of Metallurgical and Materials Engg.) 3D- Bioprinting, Medical Devices- Design and Development, Orthobiologics, Wound Healing.

PROF. JAVED N. AGREWALA Professor

Ph.D. (Agra University, Agra) Immunology of Infectious Diseases, Vaccines, and Gut Microbiome.



DR. SRIVATSAVA NAIDU

Assistant Professor Ph.D. (Justus-Liebig University,Giessen, Germany) Therapeutic targeting of basal transcriptional machinery; Noncoding RNA as cancer therapeutics.

ASSOCIATE FACULTY



DR. DEEPTI R BATHULA Assistant Professor Computer Science & Engineering Ph.D. (Yale University, USA) *Medical Image Processing and Analyses; Pattern recognition; Machine Learning and Computer Vision*



DR. NARINDER SINGH

Assistant Professor Chemistry Ph.D. (Guru Nanak Dev University, Amritsar) Nano-particles, calix [4] arenes, Characterization, chemosensor development



DR. PUNEET GOYAL

Assistant Professor Computer Science Ph.D (Purdue University USA) Image Processing/Computer Vision, Deep Learning, Machine Learning, Security Analytics, Healthcare Apps and Assistive Technologies



DR. YASHVEER SINGH

Associate Professor Chemistry Ph.D. (University of Allahabad) *Biomaterials, Drug Delivery and Antibacterial Gels Biomaterials ARCH FACILITIES*



DR. KAILASH CHANDRA JENA

Assistant Professor Physics Ph.D. (Indian Institute of Technology Madras) Interfacial water structure, protein folding soft matter interfaces, and colloids and model membrane systems



DR. NAVIN KUMAR

Associate Professor Mechanical Engineering Ph.D. (Indian Institute of Technology Delhi) *Biomaterials, Biological and Biomaterial and tripodal Frameworks for Biomechanics, Mechanics of Nanomaterials, Finite Element Modeling (FEM), Biomedical Engineering, Biomedical Instrumentation, and Bioimplants*

DR. RAMJEE REPAKA

Associate Professor Mechanical Engineering Ph.D. (Indian Institute of Technology Kharagpur) Heat Transfer; Thermal Engineering



No. of Labs

PG	:	5
Research	:	7

Teaching Labs (Post-graduate Students):

Name of the lab	Faculty In-charge of Teaching Lab	Name of the Equipment
Advanced Biology Teaching Lab	Dr. Srivatsava Naidu	Clariostar Plate Reader, Merck Water Purification System, Nitrogen Cylinder for cryopreservation, Chemidoc Imaging System, LIECA Florescent Microscope, Fully Automated Autoclave, Refrigerated Centrifuges and freezers, Ice-flaking machine, Tissue Culture Room and Microbiology room

Physiology Teaching Lab	Dr. Ashish Sahani Dr. Durba Pal	UHK-TA Human Physiology Teaching Kit, Fab X 3-D Printer, Human Skeleton Model for teaching, Models of human organs, Emotive Epoc 14 Channel ECG, Spirometry, Stethoscope, Zeiss Axioscope Upright microscope, Trinocular Microscopes, Refrigerator, -20 freezer
Medical Devices and Instrumentation Teaching Lab	Dr. Ashish Sahani	445 nm Blue Light Burning Power Beam Laser Pointer, Keysight EDUX1002G Oscilloscope, Soldering Station, Bench Drill Machine, Dremel 3000-15 130 watt multi toolkit, Bosch GST 700 Plastic Jigsaw Blue, Ophthalmology unit, keratometer
Biomechanics	Dr. Atharva Poundarik	Workstation, Software for analysis of biomechanical parameters, Weight and Height measurement system
Medical Imaging and Biophotonics Teaching Lab	Dr. Rajesh Kumar	Ultrasonic machine, DopplerFlow, CT Scan experimental system, Terranova (MRI); NIRSspectrometer tool, Ruby crystal fluorescence lifetime experimental kit, Light source catheterization experimental kit, Fiber optics measurement probe, fluorescence measurement experimental kit

RESEARCH LABS:

Name of the lab	Principal Investigator/ Head of the Research Lab	Name of the Equipments
Immunology Lab	Prof. Javed N. Agrewala	Real Time PCR, Chemidoc Imaging System CO2 incubator, -20 and -80 C freezers, Biosafety Cabinet, Cooling Centrifuges, Electroporater, Microscope
Non Coding RNA's Lab	Dr. Srivatsava Naidu	Homogenizer Tissue Lyser, Flow Cytometer, Thermal Cycler, Quant Studio, Ultrasonic Platform, Vortex Mixer, Mini gel Tank, Biosafety Cabinet, Vacusip Aspiration System, Low temperature refrigerators and freezers, CO2 incubator with shaker, Mini gel Tank, Electrophoresis and Blotting System, Stable Temperature utility Water Baths, Microscope.
Tissue Engineering and Regenerative Medicine Laboratory	Dr. Durba Pal	CO 2 incubator, LEICA Cryotome, 5702 Refrigerated centrifuge, LEICA Fluorescent Microscope DMI8, Water bath, Biosafety cabinet, BD Accuri C6 Plus Flow Cytometer, PCR verittiThermo fisher Multiskan Go Spectrophotometer, - 20 and -80 C freezers and centrifuges.
Medical Devices Lab	Dr. Ashish Sahani	Palmsens 4, NI USB 6001, Desktop Workstation, Raspberry Pi-Board Module, Oscilloscope, Arduino Development Board, LOBOT 6 DOF RC Robot Arm Gripper, DIY 5DOF Robot Arm Five Fingers Metal Mechanical Paw, Emotiv Kits, Thermal Camera IR, DSLR Camera Canon 80 D, Menikin for heart and upper body, NI Labview kit, Embrace Wrist watch for medical R & D, i-works kit.
Biomedical- Photonics Lab	Dr. Rajesh Kumar	Advanced Raman spectrometer, Plant spectrometer, Fluorescence spectrometer, NIR spectrometer, Microscopy based Imaging Tool, Laser powermeter, Optics & Photonics Components.
Advanced Biomaterials Manufacturing Lab	Dr. Atharva Poundarik	3D Bio-printer, Tangential Flow Filtration System, Lyophilizer, Elisa Plate Reader, Polymer synthesis setup
Biomaterials Lab	Dr Bodhisatwa Das	Electrospinning (PICO Instruments Chennai), Phase Contrast Microscope (Lawrence Mayo)



- 1. **Prof. Javed N. Agrewala** received Senior Scientist Oration Award by the Indian Immunology Society, 2022
- 2. **Prof. Javed N. Agrewala** received Distinction Fellow Award by the Academy of Microbiological Sciences, 2022

AWARDS AND HONOURS 2022-23 (STUDENT)

- 1. **Ms. Leena Arora:** Awarded Ph.D. for her research work on Exploring the cellular plasticity and hypoxia mediated crosstalk in lung and breast tumors.
- 2. **Mr. Debarun Patra:** Recipient of Keystone Symposia Future of Science Fund scholarship to present his research work in the upcoming Keystone Conference on Hypoxia: From Basic Mechanisms to Emerging Therapies, May 28 May 31, 2023, in INEC Killarney Convention Centre in Killarney, Co. Kerry, Ireland.
- 3. **Mr. Soumyajit Roy:** Recipient of 'Best Poster Award' Tissue reprogramming with advanced materials: A new era in Regenerative medicine" at International Conference on Smart Materials for Sustainable Technology -II (SMST-II, 2022) organized jointly by IIT Bombay and IIT BHU Varanasi, held at IIT Bombay from 13-16th October 2022.
- 4. **Mr. Soumyajit Roy:** Recipient of 'Best Poster Award' "Adaptive cellular reprogramming at pathophysiological condition" at International Conference on Biomaterials, Regenerative Medicine And Devices (BIO-Remedi 2022) held on Dec 15th -18th2022 organized by IIT Guwahati.
- 5. **Mr. Jonaid Ahmed Malik:** Best poster presentation at the Annual Conference of Pharmacology and Related Research Area. a cash award of Rs 50, 000, certificate and medal.
- 6. **Mr. Sheetanshu Saproo:** European Molecular Biology Laboratory (EMBO) travel award for attending international conference on Ribosome synthesis held at Engelberg, Switzerland.
- 7. Ms. Mansi Sharma: PhD student has been selected for PMRF 2023.

INVITED LECTURES BY FACULTY

Name of the Faculty Lecture Department Institute Date	 Dr. Durba Pal Adaptive cellular reprogramming at pathophysiological condition International Conference on Biomaterials, Regenerative Medicine and Devices (BIO-Remedi 2022) IIT Guwahati 15th-18th December 2022
Name of the Faculty	 Dr. Durba Pal Tissue reprogramming with advanced materials: A new era in
Lecture	Regenerative medicine
Department	: International Conference on Smart Materials for Sustainable Technology -II (SMST-II, 2022)
Institute	: IIT Bombay
Date	: 13th - 16th October 2022

Name of the Faculty Lecture Department Institute Date	 Dr. Ashish Sahani Essentials of Entrepreneurship. MME IIT Ropar March, 2023
Name of the Faculty Lecture Department Institute Date	 Dr. Ashish Sahani Developing Health Technologies and Translating to Startups Department of Electronics IIIT Una September, 2022
Name of the Faculty Lecture Department Institute Date	 Dr. Ashish Sahani Translational Product Development in Digital Health. Department of Electronics IIIT Una January, 2023
Name of the Faculty Lecture Department Institute Date	 Dr. Ashish Sahani Developing Health Technologies and Translating into Startups Avionics IIST, Trivandrum July, 2022
Name of the Faculty Lecture Department Institute	 Prof. Javed N Agrewala Is India ready to meet the CEPI 100 days vaccine challenge Institute Level Translational Health Science and Technology Institute (THSTI)
Name of the Faculty Lecture	 Prof. Javed N Agrewala Targeting dendritic cells with Mycobacterium tuberculosis epitope encapsulated in nanoparticles expressing TLR-2 ligand protects against TB Institute Level (INST)
Department Institute	 Institute Level (INST) INST, Institute of Nano Science & Technology, Mohali
Name of the Faculty Lecture	 Prof. Javed N Agrewala Radical changes in the vaccination strategies to eliminate Mycobacterium tuberculosis from the TB- endemic regions
Department Institute	 Department of Immunopathology Postgraduate Institute of Medical Education and Research (PGIMER), Chandigarh
Name of the Faculty Lecture	 Prof. Javed N Agrewala Induction of tolerance in the dendritic cells by Mycobacterium tuberculosis: a possible mechanism of evading immune system at the conference on Infections, Vaccines and Immuno-Innovations for Human Health
Department Institute	: Institute Level : BHU, Varanasi

Name of the Faculty Lecture Department Institute	 Prof. Javed N Agrewala Mycobacterium tuberculosis exploits MPT64 to generate myeloid- derived suppressor cells to evade the immune system, International Conference on Consortium of Universal Research Erudition HLA and Immunogenetics Madurai Kamaraj University, Madurai
Name of the Faculty Lecture	 Prof. Javed N Agrewala Elusion strategies of Mycobacterium tuberculosis and its counteraction by the immune system
Department Institute	Department of BiotechnolgyMaharshi Dayanand University, Rohtak, Haryana
Name of the Faculty Lecture	 Prof. Javed N Agrewala Targeting Dendritic Cells by Promiscuous Peptide of 16 kDa antigen of Mycobacterium tuberculosis to induce Long Lasting Protection
Department Institute	Department of BiotechnolgyDAV College, Chandigarh
Name of the Faculty Lecture Department Institute Date	 Dr. Rajesh Kumar Biophotonics Tools for Tissue Imaging and Diagnostics IIT Bombay Chapter Photonics and Lasers-Academia Industry Meet (PLAIM),IIT Bombay Chapter, Bombay Exhibition Center, Mumbai. 7th-9th Dec. 2022
Name of the Faculty Lecture Department Institute	 Dr. Bodhisatwa Das Carbon nanostructure based multimodal imaging and cell tracking for regenerative medicine Institute Level IIT Guwahati

C LECTURES BY VISITING EXPERTS

Sr. No.	Name of the experts with affiliation	Торіс	Date
1	Prof. Jaswant Singh, Chair of Biomedical Engineering, University of Saskatchewan, Canada.	Interdisciplinary discussion	30-03-2022
2	Mr. Abhishek Kirti, Co-founder & COO, Dresma Inc, CA, USA.	Advance Application of Artificial Intelligence and Entrepreneurship Opportunities.	03-09-2022
3	Prof. Narendra M. Dixit - Chair, Centre for Biosystems Science and Engineering, Indian Institute of Science (IISc), Bangalore.	A dynamical systems view of infectious diseases: HIV, COVID-19 and more	12-12-2022
4	Prof. Balakrishnan Prithiviraj, Dalhousie University, Canada.	Interdisciplinary discussion	14.02.2023
5	Dr Vikas Bansal, Group Leader, German Centre for Neurodegenerative Diseases, Tubingen, Germany	The Foundational data initiative for Parkinson's disease (FOUNDIN- PD): enabling efficienttranslation from genetic maps to mechanism	17.03.2023



Sr. No.	Name of the Student	Country	Detail of visit with date
1	Sheetanshu Saproo	Switzerland	Conference Visit, 12th triennial Conference & 3rd EMBO Workshop on Ribosome Synthesis Date: 17th – 21st August, 2022.
2	Leena Arora	UK	Visiting Research Student, 15th April to 15th August, 2022, University of Southampton
3	Ravinder Kumar	UK	Conference Visit, IEEE EMBC (Engineering in medicine and Biology Society) 11th July to 15th July, 2022
4	Mr. Adarsha Narayan Mallick	UK	Conference Visit, IEEE EMBC (Engineering in medicine and Biology Society) 11th July to 15th July, 2022
5	Anwesha Mukherjee	South Korea	Conference visit, TERMIS-AP : 07/10/22-12/10/22



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

S.No.	Faculty Name	Project Name	Funding Agency	Amount	Status
1.	Dr. Durba Pal	Antisense oligonucleotide- loaded, 3D printed, double-layered, and multifunctional wound healing matrix to target angiogenesis in chronic diabetic wounds	Department of Biotechnology (DBT), New Delhi, INDIA		01.06.2021 – 31.05.2024 Ongoing
2.	Dr. Durba Pal	Understanding the role of adipose tissue remodelling in exercise induced insulin sensitivity	Department of Biotechnology (DBT), New Delhi, INDIA		06.07.2018 – 05.07.2022 Completed
3.	Dr. Rajesh Kumar	Development of a handheld instrument for in-situ identification of "Indian Yellow Dragon	SERB-DST, Govt. of India		Completed
4.	Dr. Rajesh Kumar	Accurate Optical Sensing for Efficient Fertilizer Use and Increased Yield in SmallFarms	Massachusetts Institute of Technology (MIT), USA		Ongoing
5.	Dr. Rajesh Kumar	3D bioprinted engineered-tissue model for analysis of osteoarthritic disorders in human using unconventional imaging tools	DBT, Govt. of India		Ongoing

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6.	Prof. Javed N Agrewala	Enhancement of the immunogenicity and protective efficacy of lipopeptide vaccine against Mycobacterium tuberculosis using peptidomimetics and conjugation withisoniazid	DST-SERB	61.52 Lacs	Completed 2023
7.		Generation of promiscuous peptides entrapped nanoparticles displaying TLR-2 ligand to impart protective immunity against Mycobacterium tuberculosis	DST-SERB	70.00 Lacs	Completed 2023
8.		Immunotherapeutic and prophylactic remedy against heroin dependency	MHRD	50.00 Lacs	Continued
9.		A lipidated bi-epitope vaccine to elicit protective CD4 T cell and CD8 T cell immunity against Mycobacterium tuberculosis	DST-JC Bose	90.00 Lacs	Continued
10.		Co-administration of rapamycin with MOG peptide and restricting the development of experimental autoimmune encephalomyelitis by skewing Th17 cells to Tregs			
11.	Dr. Bodhisatwa Das	Dual release of anti- inflammatory molecules from core- shell nanofibers for chronic wound healing	SERB-SRG		INR 2900000
12.	Dr. Dr Srivastava Naidu	Ramalingaswami fellowship	Department of Biotechnology, Govt. of India		Ongoing
13.		SPARC	MHRD		Ongoing

14.		Identification and functional characterization of circular RNAs originating from genes encoding RNA Polymerase I transcriptional machinery - a novel molecular basis of cancer".	SERB – CRG		Ongoing
15	Dr. Atharva Poundrik	Processing of waste placental tissue from maternity wards into regenerative tissue grafts for non-healing wounds and other clinical applications'	DST	42 Lacs	ongoing
16		Development of a low-cost, 3D-printable osteoadhesive with versatile applications in orthopaedic surgery'	SERB SRG	30 Lacs	Ongoing



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DEPARTMENT OF CHEMICAL ENGINEERING

Programs offered	:	B.Tech., M.Tech. & PhD
No. of Students	:	B.Tech. : 89
		M.Tech. : 14
		PhD : 47
Head of the Department	:	Dr. Vishwajeet Mehandia
No. of faculty members	:	16
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
		6. Biophysics and Biomedical Engineering
		7. Advanced Colloids and Interfacial Engineering
		8. Process Systems Engineering and Data Science
		9. Molecular Modeling and Simulation
		10. Waste Management and Recycling
		11. Nanotechnology and Nanomaterials
No. of Publications	:	31





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, Multiscale modeling , Soft Matter Engineering*

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. KISHANT KUMAR

Assistant Professor Ph.D. (IIT Guwahati) Gas Storage and Separation; Waste Management: Molecular Dynamics & Monte Carlo Simulations: Phase Calculations and Ab Initio Calculation, Hydrogen Generation, Storage and Transportation, Porous Materials

DR. JAYARAM VALLURU

Assistant Professor Ph.D. (IIT Bombay) Bayesian State & Parameter Estimation. Machine Learning, Soft-Sensor. Data Reconciliation, Fault Detection, Model Predictive Control, Real-time Optimization



DR. SANTOSH KUMAR MEENA

Assistant Professor Ph.D. (Johannes Gutenburg University of Mainz, Germany) Nanotechnology and Nanomaterials, Surfaces and interfaces, Catalysis, Metalorganic frameworks, Biominerals (Crystallization of inorganic materials), Molecular Dynamics simulations; Modeling and simulations. Process development



DR. VISHWAJEET MEHANDIA Assistant Professor PhD(IISc, Bangalore) Transport Phenomena and Thermodynamics.

Multi-scale modeling, Soft Matter Engineering



The department is actively engaged in various activities to foster strong relationships among students, faculty members, and prospective incoming students both within and outside the institute. These activities include online presentations, expert lectures, and personal interactions through different programs throughout the year. In each semester, the department conducts lab tours and interviews to recruit high-quality PhD students from the country. However, this recruitment initiative is not limited to PhD students only; the department also aims to attract prospective faculty members with diverse research backgrounds. Recently, three new faculty members were hired, specializing in process modeling and simulations, molecular dynamics simulations, nanotechnology, and nanomaterials. Additionally, the department is currently working on recruiting potential faculty members in areas such as advanced materials for energy, health, and waste management applications, systems and computational biology, and process control and optimization.

The department also engages in activities of national importance. For instance, some faculty members and students recently participated in the successful completion of the G20 summit in Amritsar, which was jointly organized by the Punjab government and the Government of India. The department has gained significant national recognition for its research activities, particularly in securing multi-crore research funding for developing cutting-edge technologies focused on wastewater treatment and defense applications. The department's research activities are also reflected in the increasing number and quality of research publications in prestigious journals. To further enhance its research facilities, the department has submitted a multi-core FIST research grant to the Department of Science and Technology (DST).

Regarding academic activities, the institute has recently approved a proposal to increase the undergraduate strength in the department from 25 to 35 students. Similar efforts are underway to increase the number of master's students. The department is also actively organizing workshops to enhance its visibility and reputation both nationally and internationally. For instance, a recent workshop focused on open-source codes for multiscale modeling, spanning from the molecular to continuum scales. Moreover, faculty members and students regularly visit various national and international institutes, research labs, and conferences to present their work, establish collaborations, and showcase the department's presence.



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
	PG	:	02 (Instrumentation lab)
	Research	:	12
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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, Inverted light microscope, Fluorescent Microscope, Langmuir Blodgett attached with microscope (LBXD), Dip Coater, Optical Tensiometer, Centrifuge, homogenizer.
Multiphase Flow, Catalysis & Sustainable Energy Research Lab	Dr. Tarak Mondal & Dr. Neelkhant Nirmalkar	Fixed Bed Reactor , Gas Chromatography , Rotary Evaporator Muffle Furnace , Centrifuge , Hot air Oven, Multi parameter Kit ,Nano Bubble Generator.

DRF Facilities	Dr. Neelkhant Nirmalkar, Dr. Swati A. Patel, and Dr. Tarak Mondal	Nanoparticle Tracking Analysis, Zeta Sizer, Force Tensiometer , Master Sizer, Viscometer.
DRF Facilities	Dr. Tarak Mondal	Gas Chromatography Mass Spectrometry, Thermogravimetric Analyzer, Fourier Transform Infrar ed.
Complex Fluid Lab	Dr. Vishwajeet Mehandia	Rheometer, High Speed Monochromatic Camera.
Computational Fluid Dynamics	Dr. Neelkhant Nirmalkar	Workstations
DST-TIH water technology lab	Dr. Neelkhant 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 Kumar (Mechanical Dept.)	Centrifuge , Fluorescent Microscope , Cell Culture Lab.
Multiscale Modelling Lab	Dr. Himasnhu Paliwal & Dr. Navin Gopinathan	Workstations.
Applied Polymers and Nanomaterials Laboratory	Dr. Sarang P. Gumfekar	Lyophilizer, Hot air oven, Electrospinner, Crossflow membrane testing module, Probe and bath sonicator
Granular and Colloids Lab	Dr. Saikat Roy	High Performance Computing Servers, High speed cameras, DSLR cameras
Process Systems Engineering Lab	Dr. Asad Sahir	Workstations
Molecular Modelling, and Simulation Lab	Dr. Kishant Kumar	Workstations
Waste Management Research Lab	Dr. Kishant Kumar	Ultraviolet Visible Spectroscopy and Electrochemical Workstation



AWARDS AND HONOURS 2022-23 (FACULTY)

- Dr. Jayaram Valluru, along with team of 8 Undergraduate Students of Chemical Engineering Dept., Vaidehi Patidar, Sarbjot Singh, Nandana S, Rahul Goyal, Uttam Saroj, Nimje Ishan, Avi Garg and Vansh Gupta have received Chanakya Fellowship for a period of 10 months from TIH-IOT IIT Bombay Chanakya Fellowship Programme to work on Industrial Problems.
- Dr. Asad Sahir was recognized by a "Honorable Mention" for the Best Faculty Advisor for Solar Decathlon 2021-22 Challenge. His Team Tejasvi IIT Ropar comprising 14 students was awarded the Best Community Shelter Design Award by Honorable MoS (I/C)- Science and Technology, Gol and Secretary, DST, Gol in July 2022.
- 3. SWE WE Local 2022 Engaged Advocate Award to **Dr. Asad Sahir** (The Engaged Advocate Award honors individuals who contributed to the advancement or acceptance of women in engineering: 12 awardees globally in a year across academia and corporate)

4. In 2022, Dr. Asad Sahir was invited to serve as a Technical Advisor for the Center for Study of Science, Technology and Policy (CSTEP) in Bengaluru for a project on decarbonization of petrochemicals, and to serve as a member of the Technical Committee for the upcoming Alliance for an Energy Efficient Economy (AEEE) Conference Energise 2023.

AWARDS AND HONOURS 2022-23 (STUDENT)

- 1. **Mr. Chandra Shekhar** received SERB Travel grant of Rs. 2 Lakhs for attending the international conference in Greece.
- 2. **Mr. Piyush Pratap Singh** won First prize (Cash Prize Rs. 21,000) in the competition on Innovative Ideas on the theme of 'Energy Conservation & Energy Efficiency' organized by Punjab Energy Development Agency, Chandigarh (SDA-Punjab) in association with Bureau of Energy Efficiency, Ministry of Power, Govt. of India. (March, 2023)
- 3. **Ms. Kalyani Agarwal** won first prize in Technology Day, 2022 held at IIT Ropar under Phd/Postdoc category for the prototype based on Nanobubble Technology.
- 4. **Ms. Sukriti Sharma** was awarded the Best Oral Presentation Sustainable Energy at the International Conference on Enabling Transition towards a Sustainable Future held by the Department of Chemical Engineering, IIT Roorkee in September 2022.
- 5. **Ms. Anam Afaq, Ms. Aakriti Sharma, Ms. Nazreen VM , Ms. Aditi Singh, Ms. Sukriti Sharma, Ms. Bhawna Chauhan and Mr. Vijay Vaishampayan** were selected to serve as Liaison Officers for the foreign delegates attending the Ministry of Education, Gol G20 2nd Educational Working Group (2nd EWG) in March 2023.
- 6. **Ms. Sukriti Sharma** was invited as one of the six delegates for the US Embassy in India's Diplomacy Simulation organized at the American Center, New Delhi in September 2022.
- 7. **Ms. Sukriti Sharma** was selected as a participant for the 2022 Harvard College Project For Asian & International Relations (HPAIR) in New Delhi.
- 8. **Ms. Bhawna Chauhan** is a part of the top ten teams worldwide for the Office Building Category which have been selected for U.S. Department of Energy Solar Decathlon (https://www.solardecathlon.gov/event/2023-design-challenge-teams.html)
- 9. Sunny Oberoi Best M.Tech. Thesis Award (First prize) to **Mr. Faheem Hamid**.
- 10. **Ms. Richa Ranjan** was awarded "Best Poster Presentation" for presenting her research work at the 4th National Conference on Advances in Chemical Engineering and Science organized by the Department of Chemical Engineering, IISER Bhopal, India.

INVITED LECTURES BY FACULTY

Name of the Faculty: Dr. Saikat Roy

Lecture : "Numerical investigation of the response of granular matter under high-speed impact"

Institute: CompFlu-2022 (Complex Fluids Symposium), IIT Kharagpur Date: 19th December 2022 Name of the Faculty: Dr. Tarak Mondal Lecture: Biofuels – World scenario & Indian perspective Institute: Vel Tech High Tech Engineering College Date: 5th December, 2022

Name of the Faculty: Dr Manigandan

Lecture: Colloids and Interfaces: Recent Advancement as stabilizer in Pickering emulsion Institute: Rajalakshmi Engineering College, Chennai Date: 9th November 2022

Name of the Faculty: Dr. Tarak Mondal

Lecture: Green Hydrogen production from renewable sources Institute: SVJN Faculty Development Program Date: 17th September, 2022

Name of the Faculty: Dr. Asad Sahir

Lectures : "Operation of Thermal Power Plants:Combustion and Carbon Capture perspectives" Institute: SVJN Faculty Development Program Date: 20th February, 2023

Name of the Faculty: Dr. Asad Sahir

Lectures : "Pivotal role of students to serve as building blocks for educational institutions champion the National Education Policy 2020: A Perspective" and "Making the most of student life in a University" Institute: B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai

Date: 28th - 29th October, 2022

Name of the Faculty: Dr. Asad Sahir

Lectures : "Practical Introduction to Energy Assessment" Institute: The World Bank and 'Shoktikonna' (Bangladesh's first-ever women leadership cohort in the renewable energy sector) Date: 30th June to 1st July 2022

Name of the Faculty: Dr. Asad Sahir

Lectures : "Careers in STEM and Engineering (Outreach Lecture)" Institute: Baba Banda Singh Bahadur Engineering College Armed Forces Preparatory Academy Date: 20th December, 2022

Name of the Faculty: Dr. Navin Gopinathan

Lectures : "Structural characterisation of carbon deposited catalysts using gas adsorption" Institute: Government Engineering College, Thrissur Date: 1st December, 2022

Name of the Faculty: Dr. Navin Gopinathan

Lectures : "Structural characterisation of porous materials using NMR methods" Institute: Government Engineering College, Thrissur Date: December 02, 2022

Name of the Faculty: Dr. Kishant Kumar

Lecture: Challenges and Future Scope in Hydrogen Storage Institute: SVJN Faculty Development Program Date: 20th September, 2022

DLECTURES BY VISITING EXPERTS

Sr. No.	Name of the experts with affiliation	Торіс	Date
1	Dr. Shashank Srivastava (Hindustan Zinc Limited)	Industrial Presentation: Advanced Process Control Applications in Process Industries	January 14, 2023

2	Kiran Raviprakash (Software Engineer II (Advanced Control Products) at Honeywell, Honeywell)	Industrial Presentation: Advanced Process Control Applications in Process Industries	January 30, 2023
3	Dr. Bhagyesh Patil, Staff Engineer (Algorithms, Optimization & Controls), John Deere	Applications of Statistics in Industry	February 3, 2023
4	Dr. Sreyoshi Bhaduri- Research Scientist - II Amazon	Applications of statistical methods and data science in industry	February 8, 2023
5	Dr. Muralidhara Anandamurthy - Academic Program, JMP	Design of Experiments	March 13, 2023 and March 20, 2023
6	Dr. Shirish Paripatyadar -Shell Global - Houston and IIT Bombay Chemical Engineering Alumnus	Leadership and Mentoring in Chemical Engineering (Interaction with Undergraduates and Post Graduates)	November 9, 2022
7	Mr. Sidhant Kumar, Indian Institute of Management Calcutta and IIT Ropar Chemical Engineering Alumnus	Careers in Management	November 13, 2022
8	Dr. Minerva Martinez, Ex-ASPENTECH	Modeling and Optimization of Crude Oil Distillation System	June 19, 2022 (Virtual)
9	Ms. Sayanima Kisku, Manager (Reservoir) ONGC	Careers in Reservoir Engineering	July 17, 2022 (Virtual)
10	Sana Choyakh, Wing Studio	Internship Opportunities in the Middle East	September 2, 2022 (Virtual)
11	Jayanta Roy, Independent Consultant	Food and Beverage Industry Opportunities	September 27, 2022 (Virtual)
12	Devinder Singh, Ex-ExxonMobil	Opportunities in the pipeline industry	October 4, 2022
13	Vivek Vitankar, Fluid Dimensions	Insights on Computational Fluid Dynamics	October 11, 2022 (Virtual)
14	Ankur Napa, AB InBev	Application of AI in beverage science	October 18, 2022 (Virtual)
15	Mahesh Murthy, RMCoE	Overview of risk management in process industries	April 21, 2022
16	Rahul Raman, Kaypear Engineering LLP	Explosion Models	April 22, 2022
17	Mahesh Murthy, RMCoE	Hazard and Operability Studies (HAZOP)	April 28, 2022
18	Rahul Raman, Kaypear Engineering	Relief Systems	April 29, 2022

VISITS ABROAD BY THE FACULTY

Sr. No.	Name of the faculty member	Country	Detail of visit with date
1	Dr. Neelkanth Nirmalkar	Germany	International Conference on Nanobubbles, Nanodroplets and their applications 2022 (18th -21st September 2022)



VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1.	Ms. Sukriti Sharma	Saudi Arabia	February 4-9, 2023 for presenting research at the 44th IAEE International Conference organized by The King Abdullah Petroleum Studies and Research Center (KAPSARC) and Saudi Association for Energy Economics (SAEE)
2.	Mr. Mohamed Mazhar Laljee	Canada and UAE	Between June-December 2022 to pursue a MITACS Internship in Canada and an Internship with Khalifa University, UAE
3.	Ms. Kalyani Agarwal	Germany	International Conference on Nanobubbles, Nanodroplets and their applications 2022 (18th -21st September 2022)
4.	Ms. Priya Koundle	Germany	International Conference on Nanobubbles, Nanodroplets and their applications 2022 (18th -21st September 2022)
5.	Mr. Harsh Sharma	Germany	International Conference on Nanobubbles, Nanodroplets and their applications 2022 (18th -21st September 2022)
6.	Mr. Nilanjan Dutta	Germany	International Conference on Nanobubbles, Nanodroplets and their applications 2022 (18th -21st September 2022)



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Sr. No.	Title	Cost in Lakhs	Start Date	End date	Agency
1	Spatial stress correlations in strong colloidal gel and its connection to yielding/plasticity PI: Dr. Saikat Roy	33	12-11-2020	11-11-2022	SERB- SRG
2	Building nano-capsules using water-in-water nano- emulsions (aqueous two- phase systems) stabilized by the self-assembly of oppositely charged biopolymer-based nanoparticles PI: Dr Manigandan Co-PI: Dr Vishwajeet Mehandia and Dr Rajagopal Vellingiri	35.4	10-02-2023	09-02-2026	SERB- CRG
3	A new process for the production of 2- methylfuran, a 2nd generation biofuel, from biomass-derived furfural via vapor phase catalytic transfer hydrogenation	43.7	10-02-2023	09-02-2026	SERB- EEQ

4	Kotak-IIT Madras Save Energy Mission (KISEM) Faculty Advisory Council: Dr. Navin Kumar, Dr. C.C. Reddy, Dr. Vishwajeet Mehandia, Dr. Kalaiselvi, Dr. Tarak Mondal, Dr. Navaneeth K.M.	369	26.04.2022	25.04.2027	IIT M adras
5	Best from waste - Processing orthopaedic waste from hospitals into affordable, high-quality orthobiologics for regenerative applications (Dr. Vishwajeet Mehandia)	75.38	18-12-2019	18-12-2022	IMPRINT
6	Linear and non-linear bulk rheology of cell monolayer (Dr. Vishwajeet Mehandia)	31.57	24-12-2020	24-12-2023	SERB-CRG
7	Characterization report of physical and chemical properties of vegetable oils (Dr. Vishwajeet Mehandia)	4.55	26-10-2022	07-11-2022	Shri Ganesh Edible Pvt. Ltd.
8	Building nano-capsules using water-in-water emulsion droplets (aqueous two-phase systems) stabilized by the self-assembly of oppositely charged biopolymer-based nanoparticles	35.48	03-02-2023	03-02-2026	SERB- CRG
9	Ceramic coating for automotive (Dr. Vishwajeet Mehandia)	20.04	25-01-2022	25-01-2027	SBL Specialty Coatings Pvt. Ltd.
10	Green Solvents for Recycling Cathodes of Spent Li-Ion Batteries;	25.80	20-01-2021	20-10-2023	SERB- EEQ
11	A breakthrough revolution in crystallization technology by nanobubbles as nuclei agents (Dr. Neelkanth Nirmalkar)	26.03	26-01-2023	25-01-2026	CRG



DEPARTMENT OF CHEMISTRY

Programs offered	:	M.Sc. & Ph.D.
No. of Students	:	M.Sc. : 44
		Ph.D. : 104
Head of the Department	:	Dr. C. N. Tharamani
No. of faculty members	:	15
No. of staff members	:	5
		Technical Staff : 4
		Administrative Staff : 1
Thrust Area	:	Sustainable Energy, Materials, and Drug Design
No. of Publications	:	115





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



DR. ASLAM SHAIKH Assistant professor CSIR-NCL, Pune Synthetic Organic 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

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*



No. of Labs

UG :	2
PG :	3
Research :	21

AWARDS AND HONOURS 2022-23 (FACULTY)

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- **Dr. Tharamani** is featured as Leading International Women Scientist in material science by Royal Society of Chemistry March 2023
- Dr. Tharamani conferred with CRSI Bronze Medal 2023 from Chemical Research Society of India
- Dr. Tharamani nominated Member of Screening Committee, SERB Power Grant, Department of Science and Technology, Govt. of India (2023-2026)
- Dr. Tharamani awarded Alexander von Humboldt Renewed Research Stay Fellowship (June 2022 July 2022)
- **Dr. Tharamani** admitted as Fellow of Royal Society of Chemistry 2022 (Invited under Leaders in the field scheme as an emerging Talent in India)
- **Dr. Tharamani** nominated Member of the Editorial Board in Journal 'Electrocatalysis', Springer Nature (2022-2024).
- Dr. Indranil Chatterjee: awarded with Thieme Chemistry Journal Award 2022.

AWARDS AND HONOURS 2022-23 (STUDENTS)

- **Ms. Diksha Sharma**, Ph.D. Scholar Received Springer oral presentation award (2nd prize) in International conference of polymers for advanced technology organized by Asian polymer association at Goa, 23rd to 25th February 2023.
- **Ms. Ranbir Kaur,** Ph.D. Scholar, received Best Poster award during Prof. Ram Chand Paul National Symposium on Sustainable Development in Chemical Sciences organized by Panjab University, Chandigarh, 21st to 22nd February 2023
- **Ms. Kamalpreet Kaur,** Ph.D. Scholar, received Best Poster award during Prof. Ram Chand Paul National Symposium on Sustainable Development in Chemical Sciences organized by Panjab University, Chandigarh, 21st to 22nd February 2023
- Ms. Latakshi Sharma, M.Sc. Student received vice chancellor gold medal award 2023 in BSC Chemistry during the convocation ceremony this year on 22 February 2023.
- Mr. Manish Kumar, Ph.D. Scholar Received Oral Presentation (Received Best Oral Award) during International Conference on "Green Energy & Sustainable Environmental Practices" (GESEP-2023, organized by Department of Chemistry, University of Jaipur, India and Royal Society of Chemistry London & Green Chemistry Network Centre, New Delhi, India, 30th to 31st January 2023
- Ms. Akansha Chaturvedi, Divyani Gupta and Dr. Tharamani C.N. got First prize (cash prize of Rs. 1.25 lakhs) in Energy Hackathon Contest organized by IIT Madras, January 2023

- Ms. Kalpana Garg, Mr. Mukesh Kumar and Dr. Tharamani C.N. got Second got a prize (cash prize of Rs. 50,000) in Energy Hackathon Contest organized by IIT Madras, January 2023
- Mr. Priyank Kumar Sharma, Ph.D. scholar, received the Best poster award during the 2nd National Conference on contemporary facets in organic synthesis CFOS-2022 organized by IIT Roorkee, 1st to 4th December 2022
- Ms. Neha Thakur, Ph.D. Scholar received the Best thesis award in Science during Convocation 2022.
- Mr. Debarshi Saha, Ph.D. Scholar received the best poster award in Frontiers in Chemical Sciences (FICS)-2022 held in IIT Guwahati in December 2022.
- Mr. Vishal Kumar, Ph.D. Scholar, Received Best Poster award during TCB (Theoretical Chemistry and Biology) Symposium, 15 October 2022
- Mr. Mukesh Kumar and Dr. Tharamani C.N, got a cash prize of Rs. 1 lac in Tata Steel's flagship open innovation event MaterialNEXT 3.0 organized by Tata Steel, June 2022
- Ms. Divyani Gupta, Ph.D. Scholar got 2nd prize in chemCatCon2.0 organized by IIT Gandhinagar, 14th to16th May 2022
- Mr. Priyank Kumar Sharma, Ph.D. scholar, received Best poster award during Recent advances in inorganic and medicinal chemistry (RABMC-2022) organized by NIPER Mohali, 19th November 2022.
- Mr. Biprajit Paul, Ph.D. scholar, received Best poster award during Recent advances in inorganic and medicinal chemistry (RABMC-2022) organized by NIPER Mohali, 19th November 2022.
- Mr. Saurav Chatterjee: Ph.D. scholar, received Best poster award during Recent advances in inorganic and medicinal chemistry (RABMC-2022) organized by NIPER Mohali, 19th November 2022.
- Mr. Saurav Chatterjee: Ph.D. scholar, received Best poster award during Indian Peptide Symposium (IPS-2023) organized by Indian Peptide Society, 23rd to 25th February 2022.
- Mr. Arnab Chowdhury: Ph.D. scholar, secured 3rd position of best poster award during NIPER Pharmacon 2022 organized by INIPER, 10th to 12th November 2022.



Dr. Anupam Bandyopadhyay

- Delivered an invited talk on Rapid and highly productive disulphide-driven macrocyclization enables synthesis of cyclic peptide drugs in solid-phase in the national seminar RACS-2023 organized by Dr. Harisingh Gour University, Sagar, Madhya Pradesh, 16th to 17th March 2023.
- Delivered lecture in ChemFest 2023 on Precedence of biorthogonal reactions in understanding biological systems at IIT Ropar on 9th March 2023.
- Invited speaker in Indian Peptide Conference 2023, 23rd to 25th February 2023 and delivered lecture on Smart boronopeptides for selective recognition of sialylglycan.
- Delivered lecture on "Joining two molecules orthogonally by a Click" for Lecture series on Nobel Prize 2022 invited by the Dept. of Chemistry, Sir P T Sarvajanik College of Science. 21st January, 2023.
- Invited speaker by Society for Promotion of Science & Technology in India (SPSTI), "Joining two molecules orthogonally by a Click" (5th lecture series on Nobel Prize in Chemistry - 2022).

- Attended NIPER Pharmacon 22 International Symposium, organized by NIPER Mohali, 10-12th November 2022.
- Delivered an invited lecture on Rapid and highly efficient disulphide-driven macrocyclization in solid-phase assists in learning peptide drug epimers' activity in the CRIKC symposium "Recent Advances in Bioorganic and Medicinal Chemistry" organized by NIPER, Mohali. 19th November 2022.

Dr. C.M. Nagaraja

- Delivered an invited talk in the Indo-French workshop on clean and sustainable energy technology- INFINITE organized by CSIR- CIMFR, NPL- New Delhi, 21-24 Feb 2023
- Delivered an invited talk in the "Frontiers in chemical science (FICS-2022)" International conference, organized by IIT Guwahati, 2-4 Dec 2022
- Delivered a talk in the Faculty Research Symposium (FRS) for Collaboration between IIT Ropar and IIT Mandi on 17-18th September, 2022.
- Delivered a talk at the 8th International Conference on Metal-Organic Frameworks and Open Framework Compounds held at International Congress Center Dresden, Germany on 5th September 2022.
- Invited as external expert for the evaluation of Ph.D. Thesis of Ms. M. E. DMello, Poornaprajna Institute of Scientific Research, Bengaluru 6 June 2022
- Delivered an invited talk in the Inorganic and Physical Chemistry (IPC)-Day 2022, organized by IPC department, IISc Bangalore, 7th April 2022.
- Invited to be a core member of CO2India network Jan 2023.

Dr. C.N. Tharamani

- Delivered an Invited talk at Thematic Conference on "Clean Energy for Greener Future" a Science20 Subtheme meeting of G20, Hotel Polo Towers, Agartala, 3-4 April 2023.
- Delivered an invited talk at "GCoE-ACE symposium entitled "Emerging Technologies for Sustainable Energy Production" organized by IIT Dharwad on 24th March 2023.
- Delivered an invited talk at "International Conference On Nanomaterials for Electro-Catalysis Technology (I-CONECT 2023)", organized by the Department of Chemistry, IIT Delhi on 20-22 March 2023.
- Delivered an invited talk at "ChemFest-2023" organized by IIT Ropar on 09th March 2023.
- Delivered an invited talk at "Emergent Materials for Energy and Environment (EMEE-2023)" organized by IIT Roorkee on 04-5th March 2023.
- Attended the SERB-power grant screening committee meeting committee as a committee member held on 21-22nd Feb. 2023, at Jamia University, Delhi.
- Delivered an invited CRSI Bronze Medal lecture at CRSI Symposium organized by CRSI at JNU, New Delhi from 03-5th Feb 2023.
- Served as a jury for judging the poster session at the CRSI Symposium organized by CRSI at JNU, New Delhi from 03-5th Feb 2023.
- Delivered a Keynote talk at the international conference on Energy conversion and storage organized by IIT Madras from 18-20th Jan 2023.
- Served as a jury for judging the oral talks at the international conference on Energy conversion and storage organized by IIT Madras from 18-20th Jan 2023
- Delivered an invited talk at International Conference, CONIAPS-2022 held at Vijayanagara Sri Krishnadevaraya University, Ballari from Dec 21-23, 2022.
- Attended the SERB-Inorganic and Physical Chemistry PAC meeting for monitoring the progress of PI's ongoing project as SERB-PAC committee member held on 13-15th Dec. 2022, at BHU.

- Delivered an invited talk at Electrochemical Society of India-IIT Madras webinar series on Nov 26 2022 organized by IIT Madras.
- Attended 'Women's leadership Conclave' held on 26-27th Nov. 2022 organized by PG Academy of Leadership IIT Kharagpur.
- Delivered an invited talk at the Department of Chemistry at IISER Tirupati as part of scientific activity by eminent scientists on 18th Nov. 2022.
- Delivered an invited talk at 'Conference on Advances in Catalysis for Energy and Environment (CACEE-2022) held on 31st Oct-04th Nov. 2022, organized by TIFR Mumbai.
- Attended CO2 India Network 1st Annual Meet on 03rd Nov. 2022 as a core member, TIFR Mumbai.
- Visited IIT Delhi for R & D fair and research work and profession development, IIT Delhi, 15-17 Oct 2022
- Attended Review meeting regarding FIST Project, JNCSAR, Bangalore, 29-30 Sep 2022
- Delivered an expert talk on the theme "Battery Storage & green hydrogen" at FDP workshop organized by IIT Ropar from 12th-19th Sep 2022.
- Delivered an expert talk on the theme "Energy Harvesting & Storage Materials & Devices" at SDC/Faculty Development Program organized by Applied Science Department of National Institute of Technical Teachers Training and Research Chandigarh on 14th Sep 2022.
- Delivered an expert talk on the theme "Nanosensors and Devices" at SDC/Faculty Development Program organized by Applied Science Department of National Institute of Technical Teachers Training and Research Chandigarh on 25th Aug 2022.
- Delivered an invited talk at Technical University of Berlin, Germany, on 28th July 2022 at the UniSysCat Lecture series (Prestigious lecture series, this is one among 2 clusters in Germany)
- Delivered a talk at Technical University of Graz, Austria, at the 8th Regional Symposium on Electrochemistry of South-East Europe (RSE-SEE 8).
- Delivered an invited talk at Max Plank Institute for Energy Conversion, Mulheium, Germany on 5th July 2022.
- Delivered an invited talk at Technical University of Ilumenau, Ilumenua, Germany on 30th June 2022.
- Delivered an invited talk at "Emerging Trends in Science and Technology held on 10-11 June 2022" organized by PEC Chandigarh
- As an PhD Thesis viva-voce examiner at INST Mohali on 04th June 2022
- Delivered a Plenary talk at ChemCatCon 2.0 on May 14-15, 2022 organized by IIT Gandhinagar.
- Delivered an invited talk at NIT Srinagar on 22nd April 2022.

Dr. Debaprasad Mandal

- Delivered an invited talk on International Conference on Emergent Materials for Energy and Environment (EMEE-2023) IIT Roorkee 04-05 March, 2023.
- Delivered an invited talk in 'IPS Science Talk' program & Inauguration of Internship program for UG/PG Chemical science students, on 25/03/2023, organized by Indian Photobiology Society Kolkata
- Delivered an invited talk in International Conference on "POLYMERS FOR ADVANCED TECHNOLOGY" at Asian Polymer Association (APA) 2023, GOA, 22-24 Feb 2023
- Attended 30th CRSI-NSC Conference, JNU- New Delhi, 3 Feb 2023
- act as Scientist incharge of "Environmental chemistry section" in the 59th Annual Convention of Chemists and InternationalConference on Recent Trends in Chemical Sciences an Annual programme of Indian Chemical Society at IIT Dhanbad. 16-18 December, 2022.

- Delivered an invited talk in Faculty Development Programme: Refresher Course in Nanoscience, Nano-technology and Applications, at UGC-Human Resource Development Centre, The University of Burdwan. 01.12.2022 to 14.12.2022
- Delivered an invited talk on International Conference on Emerging material for sustainable Development (EMSD-2022), CSIR-CSIO chandigarh, 10 Oct 2022.
- Delivered an invited talk on 'Exploring Molecules, Materials and Bio-materials for Sustainable Society' 8-10th September, 2022, SERB sponsored International Symposium at Midnapore College (Autonomous), Midnapore West Bengal.

Dr. Manoj Kumar Pandey

- Delivered an invited talk on 3rd India-Japan NMR Workshop, Hokkaido University Japan Conference Hall, 27-28 Feb 2023
- Attended Meeting regarding Research collaboration with Dr. Ramesh Ramachandram, experiment at ultrafast MAS conditions, IISER Mohali, 2 June 2022

Dr. Narinder Singh

- Attended Meeting regarding inspection duty for affiliation of institute session 2023-24, Pathankot, 13 & 15 march 2023
- Delivered an invited talk on the day of National Science Day Celebration, DAV College, Chandigarh, 28 feb 2023
- Delivered an invited talk on CRACS-2023 on "International Conference on Recent Advance in Chemistry ", Punjabi University, Patiala, 24 feb 2023
- Delivered an invited talk on Professor Ram Chand Paul National Symposium on "Sustainable development in Chemical Science", Dept. of Chemistry, Punjab University, Chandigarh, 21-22 Feb 2023
- Delivered an invited talk on National conference entitled on Innovations in chemical & Environmental science", Khalsa college, Garhdiwala, 17 Feb 2023
- Delivered an invited talk on 26th Punjab Science Congress on Environment, Food Security & health with reference to climate change, Shri Guru Granth sahib world Uni., Fatehgarh Sahib, 8 Feb 2023
- Delivered an invited talk on RC Environment Studies, Punjab University, Chandigarh, 18 Nov 2022
- Delivered an invited talk on"Analytical Techniques in Chemical, physical & Biological Science, University of Kashmir, Hazratbal, Srinagar, J&K, 9-11 Nov 2022
- Invited as external expert for conducting the State of the ART of Ms. Diksha, PEC Chandigarh, 14 Oct 2022
- Invited as external expert for Ph.D. Thesis defence of Mrs. Neha, INST Mohali, 30 Sep 2022
- Meeting of Site Appraisal Committee, office of director of factories, Mohali, 29 Aug 2022
- Examiner for the Ph.D. viva voce examination of Ms. Shallu gupta, PEC chandigarh, 18 Aug 2022
- Site Appraisal committee meeting, Director of factories, Punjab, Model Welfare, Mohali, 25
 July 2022
- Attended meeting regarding "3 MLD Effluent refractory management & TDS reduction system at CETP, Baddi, New Shimla, HP, 22 july 2022
- Attended meeting regarding "Integrated Solid waste management System", MC building, Chandigarh, 6 May 2022
- Attended board of Studies meeting, GSSDGS Khalsa college, Patiala, 28 April 2022
- Delivered an invited talk on "Analytical Techniques", Mata Gujri College, Fatehgarh Sahib, 19 April 2022

Site Appraisal committee meeting, Director of factories, Punjab, Model Welfare, Mohali, 7
 April 2022

Dr. Prabal Banerjee

- Delivered an invited talk at Workshop on " Organo and Electroctalysis for Sustainaable Synthesis (OECSS-22), IIT Bhubaneswar, 22-23 Dec 2022
- Attended SERB-SUPRA PAC Meeting, IISER Pune, 21 Dec 2022
- Delivered an invited talk on Frontiers in chemical science (FICS-2022), IIT Guwahati, 3-5
 Dec 2022
- Invited for Chairing a session in International conference-Designing catalysts on Computer (DCC22), IACS Kolkata, 2-3 Dec 2022
- Invited as external expert for NIPER Students Research Symposium (NSRS-2022), NIPER Mohali, 27 Jul 2022
- Examiner for the JRF to SRF exam of Mr. Arun Kumar Solanki, INST Mohali, 19 Jan 2022

Dr. Rajendra Srivastava

- Delivered an invited talk during conference of " Emergent Materials for Energy and Environment (EMEE- 2023), IIT Roorkee, 4-5 Mar 2023
- Invited as external expert for the evaluation of Ph.D. Thesis of Mr. Deepak Kumar Chauhan, INST Mohali, 14 Feb 2023
- Invited as external expert for the selection for the post of Assistant professor in Department of applied Sciences, Punjab Engineering College, Chandigarh, 27-28 Jan 2023
- Invited as external expert for the evaluation of viva Voce examination of Ms. Jyoti Gahtori, CSIR-IIP Dehradun, 22 Dec 2022
- Invited as external expert for the evaluation of viva Voce examination of Ms. Abhilasha Chauhan, IIT Roorkee, 14 Nov 2022
- Invited for Chairing a session in International conference in advanced materials, Metallurgy & Manufacturing (ICAMMM) 2022, PEC chandigarh, 01 Nov 2022
- Invited as external expert for the M.Tech viva Voce examination of Mr. Satyam Doley, Punjab Engineering College, Chandigarh, 21 July 2022
- Delivered an Invited Talk in Chemical Sciences Symposium, IIT Mandi, 23-24 May 2022

Dr. Soumyajit Das

• Delivered an Invited talk at the 2nd National Conference on Contemporary Facets in Organic Synthesis CFOS-2022 during 1-4 Dec 2022, organized by IIT Roorkee on the occasion of 175 Years of IIT Roorkee, in partnership with Royal Society of Chemistry.

Dr. T.J. Dhilip Kumar

- Delivered an invited talk on Chandrayan-3 data analysis workshop at ISSDC-Bylalu, ISRO Workshop, Bengaluru, 28-29 March 2023
- Invited as external expert for Ph.D. Thesis defense of Mr. Jayakrushna Sahoo, University of Hyderabad, 24 Feb 2023
- Invited as external expert at national symposium "Sustainable Development in Chemical Sciences" "Electronic level study of New Doped 2D Graphene and Graphyne Lattices Functionlized for Alkali Ion Batteries, PU, Chandigarh, 21-22 Feb 2023
- Delivered an invited lecture at Molecular Materials & Functions Conference, IIT Madras, 5-7
 Dec 2022
- Delivered an invited lecture at "Electronic level study of New Doped 2D Graphene and Graphyne Lattices Functionlized for Energy Applications during INST SSR Workshop, INST Mohali, 3 Nov 2022

- Delivered an invited talk on Theoretical Chemistry and Biology Symposium, NIPER Mohali, 15 Oct 2022
- Delivered an invited talk on DAE-BRNS Symposium on Current Trends in Theoretical Chemistry (CCTC-2022), BARC Mumbai, 22-24 Sep 2022
- Delivered an invited Lecture during Faculty Development Program, Punjab University, Chandigarh, 20 Sep 2022
- Invited as external expert for the upgradation of JRF to SRF of Ms. Harshita Seksaria and Mr. Nilajkantha Tripathy, INST Mohali, 10 Aug 2022

Dr. Yashveer Singh

- Served as an external expert for PhD thesis defense seminar of Mr. Sreyan Ghosh, NCU, JNCASR, 31 January 2023
- Invited as an external member for the selection committee for the post of JTS (Bioscience & Bioengineering), IIT Jammu, Jammu, 27-28 Nov 2022
- Invited talk on Biomaterials for drug delivery and wound healing applications, STC/FDP on Recent Progresses in Biomaterials and their Applications, Department of Biotechnology, Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, 10-14 October 2022
- Served as a Reviewer, Prime Minister Research Fellow (PMRF) applications, Biomedical Engineering, Biological Sciences, and Agriculture Sciences, 6 October 2022
- Invited talk on Hydrogels/gels for drug delivery and antibacterial applications, DST-STUTI-Recent Approaches and Techniques in Drug Design and Drug Discovery, Organized by the Institute of Chemical Technology, Mumbai and Shoolini University, Solan, Himachal Pradesh, 22-28 August 2022
- Served as an external expert for the thesis defense seminar of Mr. Chaudhari Dasharathbhai Ramsibhai, Ph.D. scholar, NIPER Mohali, 08 Aug 2022
- § Biomaterials for drug delivery and antibacterial applications, Online Faculty Development Program on Advanced Characterization Techniques (ACT-2022), Department of Chemistry, Chandigarh University, Mohali and Indian Chemical Society, Kolkata, 25-30 July 2022
- Keynote lecture on Gels/Hydrogels for wound healing applications, International e-Conference on Biopolymers (Bioforum - 2022), Asian Polymer Association, New Delhi, 14-16 July 2022
- Served as the Chair for Session 13: Nanomaterial and Nanocomposites, International e-Conference on Biopolymers (APA Bioforum – 2022), Asian Polymer Society, New Delhi, 14-16 July 2022
- Guest lecture on Nanomaterials for diagnostics and therapy, Online Refresher Course in Nanoscience and Nanotechnology, Department of Applied Science, National Institute of Technical Teachers Training and Research, Chandigarh, 21 June 2022
- Guest lecture on Antibacterial nanomaterials, Online Refresher Course in Nanoscience and Nanotechnology, Department of Applied Science, National Institute of Technical Teachers Training and Research, Chandigarh, 20 June 2022
- Served as an expert for the Interview for Research Associate Position, Institute of Nano Science and Technology, Mohali, 20 May 2022
- Guest lecture on Polymeric materials in controlled drug delivery and implantable therapeutic systems, PE-620: Drug Delivery Part I - Controlled Drug Delivery course, MS, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, March-May 2022

Dr. Indranil Chatterjee

- Delivered an invited lecture in a "Two days Workshop Program for College Faculties" under SERB-SSR Scheme held on March 3-4, 2023 at Department of Chemistry, Indira Gandhi National Tribal University, Amarkantak, MP-484887
- Delivered an invited talk at Workshop on" Organo and Electroctalysis for Sustainaable Synthesis (OECSS-22), IIT Bhubaneswar, 22-23 Dec 2022
- Delivered an Invited talk at the 2nd National Conference on Contemporary Facets in Organic Synthesis CFOS-2022 during 1-4 Dec 2022, organized by IIT Roorkee on the occasion of 175 Years of IIT Roorkee, in partnership with Royal Society of Chemistry.
- Delivered a selected talk in NIPER Pharmacon 22 International Symposium, organized by NIPER Mohali, 10-12 Nov 2022.
- Delivered an Invited Talk in FORCE-IICS 2022, Agra, 28-31 July 2022
- Delivered an Invited Talk in Chemical Sciences Symposium, IIT Mandi, 23-24 May 2022

Dr. Sudipta Kumar Sinha

- Organized and presented invited talk in the discussion meeting on Tipping Points in Complex Systems ICTS-TIFR, Bangalore, 19-30 September, 2022
- Delevered an invited talk at the "Protein-DNA interactions, from biophysics to cell biology", which will be held at The David Lopatie Conference Centre, Weizmann Institute of Science, on October 18-20, 2022.
- Delivered an invited talk talk on The Functional Responses of Protein-DNA Interactions on 3-4 Nov, 2022, at Dept. of Physics, IIEST, Shibpur

Dr. Manoj Kumar Pandey

- Invited to attend and evaluate poster presentations in Theoretical Chemistry and Biology Symposium organized collectively by IISER, NIPER Mohali and IIT Ropar at NIPER Mohali on 15th Oct 2022.
- Delivered an invited lecture on "A general perspective on Nuclear Magnetic Resonance Spectroscopy" DST-STUTI sponsored Hand-on-Training Program on Analytical Techniques for Environmental Monitoring Remediation at IIT Ropar on 27th Sep 2022.

Sr. No.	Name of the experts with affiliation	Торіс	Date
1	Prof. Bernhard Blumich, RWTH Aachen, Germany	NMR Spectroscopy	09.03.2023
2	Prof. Ajaib SIngh Brar, Former Vice Chancellor, GNDU	Guest Lecture	09.03.2023
3	Dr. PRABEER BARPANDA, IISc Bangalore	Development of Mn-based versatile cathode materials	16.01.2023
4	Dr. Debendra K. Mohapatra, IICT Hyderabad	TANDEM ISOMERIZATION FOLLOWED BY C-O/C-C BOND FORMING REACTION: TOTAL SYNTHESIS OF COMPLEX NATURAL PRODUCTS.	28.11.2022
5	Dr. Yusuke Nishiyama, RIKEN, Yokohama, Japan	"Understanding structures at the atomic level: Introduction and application of solid-state NMR"	23.11.2022
6	Prof. Saumitra Sengupta, IACS, Kolkata.	Cysteine modification using arenediazonium salts	21.09.2022
7	Dr. Asit Baran Panda, NML Jamshedpur	Development of Synthetic Strategies for Inorganic Nano-structured Materials	24.08.2022

) LECTURES BY VISITING EXPERTS

VISITS ABROAD BY THE FACULTY

Sr. No.	Name of the faculty member	Country	Detail of visit with date
1	Dr. Manoj Kumar Pandey	Japan	Invited talk on 3rd India-Japan NMR Workshop, 27-28 Feb 2023
2	Dr. Tharamani C.N	Germany	Research Work, 7 June 2022- 6 August 2022
3	Dr. C. M. Nagaraja	Germany	To attend and deliver talk in the 8th International Conference on Metal-Organic Frameworks and Open Framework Compounds held at International Congress Center Dresden, Germany on 4- 7th September 2022.



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VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Ms. Divyani Gupta	London, United Kingdom	Faraday discussion conference at RSC Burlington House (25.03.2023 to 31.03.2023)
2	Ms. Sukhjot Kaur	Germany	Internship (01.10.2022 to 31.11.2022)
3	Mr. Pankaj Gautam	Weizmann Institute of Technology Israel	To attend the Conference entitled Protein-DNA Interactions: from Biophysics to Cell Biology. From 18-20 October 2022.
4	Mr. Moumita Halder	Bordeaux, France	To attend 32nd annual conference of European Society for Biomaterials (ESB 2022) (04.09.2022 to 09.09.2022)
5	Mr. Gulshan Singh	Germany	To attend 8th international conference on metal organic frameworks and open framework to count. (02.09.2022 to 09.09.2022)
6	Mr. Rajesh Das	Dresden, Germany	Poster presented at MOF-2022 International Conference (02.09.2022)
7	Mr. Sourav Roy	Lisbon, Portugal	To attend the 22nd Tetrahedron Symposium from 28th June- 1st July 2022.



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Sr. No.	Funding Agency	Name of Faculty Member	Title of Project	Total Sanctioned Amount	Project Status
1	DST	Department of Chemistry	DST (FIST Program)	1.65	Running
2	SERB	Dr. C M Nagaraja	Development of Porous Metal- Organic Frameworks (MOFs) for Catalytic Conversion of Carbon dioxide to Fine chemicals	0.53	Running
3	SERB	Dr. Indranil Chatterjee	Photo- Organocatalytic C- F Bond Activation; Asymmetric Synthesis of Difluorobenzylated Compounds	0.25	Running
4	SERB-DST	Dr.Tharamani C Nagaiah	Advanced materials towards electrocatalytic oxygen evolution reaction for sustainable energy conversion	0.58	Completed
5	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
6	CSIR	Dr. Rajendra Srivastava	Synthesis and Catalytic Applications of Magnetic and Non- Magnetic Spinels Based Multi- Functional Catalysts	0.06	Running
7	CSIR	Dr. Avijit Goswami	Synthesis of 2- heteroatom sudstituted pyridines via transition metal catalyzed cycloaddition reactions: An approach to biologically active molecules	0.14	Running

8	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	0.56	Running
9	SERB-CRG	Dr. Prabal Banerjee	Asymmetric organocatalytic activation of cyclopropane carbaldehydes towards the construction of enantioenriched annulated products	0.50	Running
10	DST-AGRI	Dr. Narinder Singh	Fabrication of Handheld Device for On-site Application: Pesticide Monitoring in Environment and Agriculture Products	0.58	Running
11	DAE	Dr. Indranil Chatterjee	Development of a urea derivative conpound (D27) as a potential drug against SARS-CoV- 2	0.33	Running
12	DST-SEED	Dr. Narinder Singh	Fabrication and training for contamination free food packing	0.29	Running
13	SERB-CRG	Dr. Rajendra Srivastava	Unique mild processes based on catalytic transfer hydrogenolysis/hyd rogenation and photocatalysis for lignin valorization: Eliminating the use of high temperatures and non-renewable H2	0.47	Running
14	SERB-CRG	Dr. T J Dhilip Kumar	Ultracold Molecules and Controlled Chemistry by Machine Learning	0.28	Running
15	SERB	Dr. Nagaraj Anbu under the mentorship of Dr. C.M Nagaraja	Development of porous metal- organic frameworks as heterogeneous solid catalysts for chemical fixation of CO ₂ into high-value chemicals	0.20	Running

16	SERB-MTR	Dr. Sudipta Kumar Sinha	On the General Phenomenon of Dynamic Disorder of Complex Enzymatic Network?	0.07	Running
17	DST-HPC Applications, National Supercompu ting 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
18	CSIR	Dr. Indranil Chatterjee	Divergent Synthesis of Fused Polycycle and Spirocyclic Framework by Merging Photoredox and Organocatalysis: A Rapid Technique to Obtain Molecular Complexity	0.07	Running
19	CSIR	Dr. Debaprasad Mandal	Design of Rapid and Tough High Performance Self- Healing Polymers	0.15	Running
20	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Synthesis of Ganiralix Related Impurities	0.04	Complete
21	CSIR	Dr. T J Dhilip Kumar	AB INITIO STUDY OF METAL ANCHORED GRAPHYNE AND GRAPHDIYNE FRAMEWORK MATERIALS FOR ENERGY STORAGE	0.03	Running
22	DBT	Dr. Yashveer Singh (PI) and Dr. Durba Pal (Co-PI)	Antisense oligonucleotide- loaded, 3D printed, double-layered, and multifunctional wound healing matrix to target angiogenesis in chronic diabetic wounds	0.38	Running
23	India-Taiwan S&T Cooperation Programme (DST/GITA and MOST)	Dr. Yashveer Singh (co-Pl) and Prof. H-C. Lin (co-Pl, NCTU, Taiwan	Extracellular matrix- mimicking, nanofibrous peptide gel-based scaffolds for wound healing	0.34	Sanction Order Received

24	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Synthesis of Exenatide and Technology Transfer	0.05	Complete
25	SERB	Dr. Vijay Kant, Lovely Professional University, Jalandhar, Mentor Prof. Narinder Singh	Teachers Associateship For Research Excellence (TARE)	0.10	Running
26	SERB-TARE	Dr. Mohit Kapoor, Chitkara University, Chandigarh Mentor Dr. Prabal Banerjee	Development and Synthesis of Antiviral Toolkit Using Nickel Catalyzed Sustainable C-H Functionalization	0.10	Running
27	Mission Tandrust Punjab	Dr. Narinder Singh (PI) and Dr. Gagandeep Singh (Young Scientist, IIT Ropar (Co-PI)	Water Analysis and Purification of Saline Ground Water of South- West Areas of Punjab State	0.18	Running
28	SERB-RJF Ramanujan Fellowship	Dr. Monika Gupta	Molecular Engineering of Azobenzene- derived Liquid Crystalline Systems for Robust and Tunable Solid-State Solar Thermal Fuels	1.19	Running
29	SERB-NPDF	Dr. Revathi A.	Development of multifunctional coating on Ti- based alloy to promote osseointegration and treat implant- related infections	0.20	Running
30	Industrial Consultancy	Dr. Rajendra Srivastava	Characterization and Engineering/Outso urcing of Synthesization of Adsorbents (Existing or Oterwise) According to and for the Requirement of BRY-AIR (Asia) Pvt. Ltd.	0.14	Complete

31	Industrial Consultancy	Dr. Narinder Singh	Guidelines, Protocols & Technical Know- How for the prepration of Formulations from given materials	0.09	Complete
32	Industrial Consultancy	Dr. Indramani Dhada PI, Dr Narinder Singh and Dr. Suman Kumar (Co-PI)	Preparation of DPR and RFP for Upgradation, Operation and Maintenance of Garbage Processing Plant at Chandigarh	0.38	Running
33	Industrial	Dr. Indranil	Synthesis of 5'	0.06	Complete
34	Consultancy Industrial Consultancy	chatterjee Dr. Narinder Singh	Noraristeromycin Evaluation of CETP Processing Parameter to Upgrade the Plant for Treatment of Wastwater from Pharmaceutical and Personal Care Products	0.16	Complete
35	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Ganirelix Impurities Analysis Report	0.07	Running
36	DRDO-CARS	Dr. Debaprasad Mandal (PI)	Synthesis of Functional Epoxy and other Precursors/Monom ers and their Self- healing Polymers	0.86	Running
36	BRNS	Dr. Anupam Bandyopadhyay	Development of peptide based infection imaging agents and deciphering interaction mechanisms of novel peptides with model cell membranes	0.45	Running
37	Industrial Consultancy	Dr. Narinder Singh	Design and Guidelines of Metallic and/or Alloy Nanoparticles for various Types of Formulation	0.17	Running
38	DST-SPG	Dr. Tharamani Chikka Nagaiah	Functional materials for the recovery of chlorine from industrial waste hydrochloric acid by electrocatalysis	0.60	Running

39	Industrial Consultancy	Dr. Narinder Singh	Design the strategy for the water purification using advanced oxidation process	0.12	Running
40	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Synthesis of Lanreotide Impurities and Characterization	0.29	Running
41	Industrial Consultancy	Dr. Tharamani Chikka Nagaiah	Tata Steel Material NEXT 2022	0.01	Complete
42	SERB-N-PDF	Dr. Vijay S. Sapner, Mentor Prof. Rajendra Srivastava	Electrochemical Biomass Conversion on Graphene Based Electrode for Energy Applications	0.20	Running
43	Industrial Consultancy	Dr. Anupam Bandyopadhyay	Consultany of Ganirelix Impurity Synthesis and Lanreotide Impurities Analysis Report	0.42	Running
44	SERB-NPDF	Dr. Nilima Priyadarsini Mishra, Mentor Dr. Prabal Banerjee	Electrochemical Generation of Ketyl Radicals Via Cathodic Reduction and Their Further Functionalization	0.19	Running
45	SERB	Dr. Sudipta Kumar Sinha	Understanding p53 Tumor Suppressor Signalling Pathway and Cancer Progression	0.21	Running
46	DST/GITA (Indian- Taiwan Programme of Cooperation in S&T	Dr. Yashveer Singh	Extracellular matrix- mimicking, nanofibrous peptide gel-based scaffolds for wound healing	0.34	GNR
47	SERB-SCP	Dr. Tharamani C Nagaiah	Self powered flexible and wearable devices driven by triboelectric nanogenerator integrated with solid-state supercapacitor for biomedical applications	0.27	Running
48	SERB-CRG	Dr. Avijit Goswami	Synthesis and Applications of C- CF ₃ and N-CF ₃ Containing Compounds	0.19	Running
49	SERB-CRG	Dr. Indranil Chatterjee	Polarity Reversal Photoredox Catalysis: Asymmetric C-H Amination using Dualphoto- Organocatalysis	0.41	Running
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50	SERB-CRG	Dr. Prabal Banerkee	Lewis Acid Catalyzed Atroposelective synthesis of Biaryl Derivatives via Intramolecular Dearomative Cyclization/Rearom atization of 3- Ethoxy Cyclobutanone	0.40	Running
51	SERB-CRG	Dr. Anupam Bandyopadhyay	Engineering TRAIL mimicking peptide to cluster DR5 efficiently: cancer treatment perspective	0.62	Running
52	Industrial Consultancy	Dr. Narinder Singh	Evaluation of Processing Parameters of Wire Drawing Industries and Development of Lab Scale Strategy for Waste Water Treatment	0.08	Running
53	DST-SERB	Dr. Sudipta Kumar Sinha	ECRA	.27	Completed
54	DST-SERB	Dr. Sudipta Kumar Sinha	MATRICS	0.07	Running
55	DST-SERB	Dr. Sudipta Kumar Sinha	CRG	.22	Running
56	SERB (CRG)	Dr. Soumyajit Das	Heteroatom doped as-indacene-based polycyclic antiaromatic hydrocarbons	39,59,963 INR	Running





DEPARTMENT OF CIVIL ENGINEERING

Programs offered	:	B.Tech, M.Tech & P.hD		
No. of Students	:	230		
		B.Tech. : 128		
		M.Tech. : 38		
		PhD : 62		
Head of the Department	:	Dr. Sagar Rohidas Chavan		
No. of faculty members	:	15		
No. of staff members	:	04		
		Technical Staff : 02		
		Administrative Staff : 02		
Thrust Area	:	Structural Engineering		
		Geotechnical Engineering		
		Water Resources Engineering		
		Geomatics		
		Transportation Engineering		
		Environmental Engineering		
No. of Publications	:	49		





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



Dr. Ickkshaanshu Sonker Assistant Professor PhD IIT Roorkee Subsurface modeling, Soil-Water-Plant interaction



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 Areas: Structural Earthquake Engineering, Seismic Design





Dr. Muthulingam.S

Assistant Professor PhD, IIT Madras Structural Fire Engineering, Structural Robustness, Blast load analysis

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 Structural 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

PhD, IIT Roorkee

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Dr. Reet Kamal Tiwari

Assistant Professor PhD, IIT Roorkee Remote Sensing applications in Natural resources mapping and Monitoring, Disaster Studies



Dr. Resmi Sebastian Assistant Professor PhD, Indian Institute of Science, Bangalore Geotechnical Engineering, Rock Mechanics, Seismic wave propagation, crack propagation monitoring



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 Water Resources Engineering, Groundwater flow and transport, Hydrogeology



No. of Labs

UG	:	08
PG	:	01
Research	:	02



UG/ PG LABS

S.No.	Name of the lab :
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- 1 Structural Analysis Lab
- 2 Concrete Technology & Workshop
- 3 Geotechnical Engineering Lab
- 4 Geomatics lab
- Hydraulics Engineering Lab 5
- 6 Computer Added Design Lab
- 7 Transportation Engineering Lab
- 8 **Environment Engineering Lab**

Research Lab	:	Soil Water Plant Lab
Name of the lab	:	Soil Water Plant Lab
Name of the Head of the Research lab	:	Dr. Ratan Sarmah
Name of the Equipment	:	Soil column plant growth setup, Weighing type lysimeter, Tilting flume 15 meter, Automatic Weather station

DETAILS OF THE EQUIPMENTS

S. No.	Name of Equipment
1	Tilting flume 15 meter
2	Total station
3	Gnss receiver r10 dgps
4	3d topographic laser scanner
5	UAV
6	Trimble handheld tdc 100
7	Ion chromatography
8	Rainfall & amp; run off simulator
9	Water hammer & amp; surge tank
10	Remotely operated equipped eco-sounder boat
11	Inclined drainage & amp; seepage tank
12	Pressure plate apparatus
13	Guleph permeameter
14	Automatic servo hydraulic controlled flexural testing machine
15	Automatic servo hydraulic compression testing machine
16	NDT equipment
17	Salt spray chamber
18	Accelerated corrosion setup
19	Hydraulic cyclic triaxial apparatus
20	Resonant column apparatus
21	Plate load test apparatus
22	Split shear plates
23	Orp meter
24	Spirometer
25	Black carbon detector
26	Portable voc monitor
27	Table top centrifuge
28	Automatic mechanical compactor
29	Consolidation apparatus (heavy)
30	Constant head permeability apparatus
31	Large scale direct shear
32	Resistivity meter
33	Water level indicator apparatus - piezometer
34	Soil salinity set up with four lysimeter

35	Digital ctm (2000 kn cap.)
36	Ultrasonic pulse velocity
37	Single beam uv-v spectrophotometer
38	Auto titrator for cement analysis
39	Calorimeter for cement analysis
40	Accelerated corrosion setup
41	Corrosion analysis system
42	Elevated temperature test setup for rc specimens
43	Accelerated carbonation chamber
44	Microscopic analysis setup
45	Closed chamber concrete curing and monitoring setup
46	Hydraulic jack and load cell
47	Rebar bending machine
48	Profile grinder
49	Hydraulic actuator
50	Rebar Locator
51	Data Acquisition and Processing systems
52	Hight precision load cell (500 kn cap.)
53	Bar Bending Machine
54	Reaction Frame 50 Ton cap.
55	Micro balance (6 digit)
56	Automatic Triaxial Testing Apparatus



AWARDS AND HONOURS 2022-23 (FACULTY)

Dr. Putul Haldar

- 1. Received "ISET Jai Krishna Award" (2022) for the best paper entitled "Comparative Assessment of Seismic Fragility of RC Frame Buildings Designed for Older and Revised Indian Standards" published in Paper No. 534, Vol. 54, No. 1, March 2017 ISET publications for the block year 2017-2022.
- 2. Received "Best Paper Award" for the research paper "Effect of Seismic Design Provisions of Indian Standards on Seismic Response of URM Infilled RC Step-Back Building on Hill" by Zimmy Singh Naorem and Putul Haldar (2023) in International Conference on Vibration Problems, 05 - 09 February 2023 at Doha – Qatar.
- 3. Received "Best Paper Award" for the research paper "Effect of Seismic Design Provisions of Indian Standards on Seismic Response of URM Infilled RC Step-Back Building on Hill" by Zimmy Singh Naorem and Putul Haldar (2023) in International Conference on Vibration Problems, 05 - 09 February 2023 at Doha – Qatar.
- 4. Invited to deliver online expert lecture on "Effect of Infill with Opening on Seismic Performance of RC Frame Buildings" (12th Oct. 2022), Organized by Indian Association of Structural Engineers (IAStructE)-IIIT Hydrabad Student's Chapter on 12/10/2022.
- Invited to deliver online expert lecture on "Modelling of Infill for Realistic Assessment of RC Frame Buildings" (24th Sep. 2022), in ATAL FDP 2022-23 on "Behaviour and Design of RC and Steel Structures" organized by Department of Applied Mechanics, VNIT Nagpur. 19th Sep. – 30th Sep. 2022

- 6. Invited to deliver expert lecture on "Modelling of Infill with Openings for Realistic Assessment of RC Frame Buildings" (28th July 2022), Organized by Department of Civil Engineering, SVNIT Surat on 28/07/2022.
- 7. Invited to deliver expert lecture online on "Analytical Assessment of URM Infilled RC Structures" (19th April 2022) in Online Faculty Development Programme (FDP) "A Disaster Management Framework using Internet of Things– Based Interconnected Devices" from 07th April to 20th April 2022 organised by Electronics & ICT Academy, NIT Warangal (Sponsored by Ministry of Electronics and Information Technology (MeitY), GOI in association with Department of Civil Engineering, Institute of Aeronautical Engineering, Hyderabad.

AWARDS AND HONOURS 2022-23 (STUDENT)

1. **Mr. Thallam Prashanth**, PhD Scholar under the supervision of Dr. Sayantan Ganguly has received the Best Paper Presentation Award at the International Conference on River Corridor Research and Management 2022 under the theme Fluvial Hydraulics and Hydrology. The conference was held in online mode and was organized by IIT Guwahati in association with IIT Jammu.



INVITED LECTURES BY FACULTY

Sr. No.	Name of the Faculty	Lecture	Department	Institute	Date
1	Dr. Ickkshaanshu Sonkar	Computer Applications in Water Resources Planning and Management	Civil Engineering	Jaypee University of Information Technology, Solan	15/07/2022
2	Dr. Reet Kamal Tiwari	R&D Renaissance Session, an awareness session for students for the Research and Development of Space Applications organized by Kalpana Chawla Center (KCC) in collaboration with IEEE Computer Society, Chandigarh University Student Chapter and Indian Society of Remote Sensing (ISRS).	Kalpana Chawla Center (KCC)	Chandigarh University	21/02/2023

VISITS ABROAD BY THE FACULTY

Sr. No.	Name of the faculty member	Country	Detail of visit with date
1.	Dr. Putul Haldar	Qatar	International Conference on Vibration Problems, 05 - 09 February 2023 at Doha – Qatar.
2.	Dr. Reet Kamal Tiwari	Sri Lanka	Chairing 2 session on Climate change and Disaster management at the conference 7th International Conference on Climate Change (ICCC 2023)



VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Mr. Manoj Kannan, Rajamanickam	Qatar	International Conference on Vibration Problems, 05 - 09 February 2023 at Doha – Qatar.
2	Mr. Zimmy Singh Naorem	Qatar	International Conference on Vibration Problems, 05 - 09 February 2023 at Doha – Qatar.
3	Mr. Onkar Mishra	Qatar	International Conference on Vibration Problems, 05 - 09 February 2023 at Doha – Qatar.
4	Ms. Shweta Mishra	Qatar	International Conference on Vibration Problems, 05 - 09 February 2023 at Doha – Qatar.



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Sr. No.	Name of Faculty	Name of the Research Project	Funding Agency	Status	Amount (Rs. Lakhs)
1.	Dr. Sagar Rohidas Chavan	Climate Change Impact Assessment of Rice and Wheat Cropping in Punjab: A Way Towards Sustainable Agricultural Practices	Mission Tandrust Punjab, Deptt. of Science, Technology & Environment, overnment of Punjab	Ongoing	8.40
2.	Dr. Ickkshaanshu Sonkar	Sustainable agricultural planning for small farm holders in the Bist Doab region of Punjab	MIT-JWAFS Lab, USA	Ongoing	13030 USD
3.	Dr. Ickkshaanshu Sonkar	Plant Water Uptake under Saline- sodic Condition: Effects and Remediation.	ISIRD, IIT Ropar	Ongoing	9.5
4.	Dr. Ickkshaanshu Sonkar	Climate Change Impact Assessment of Rice and Wheat Cropping in Punjab: A Way Towards Sustainable Agricultural Practices.	Govt. of Punjab	Ongoing	8.40
5.	Dr. Resmi Sebastian	Propagation and attenuation of shear waves inducing high strains in jointed rocks	Science and Engineering Research Board (SERB)	(extend ed for one year- Complet ed)	47.89

6.	Dr. Resmi Sebastian	Utilization of rice husk ash, bagasse ash and bottom ash as backfill materials for highway embankment	National Highway Authority of India (NHAI)	Ongoing	53.38
7.	Dr. Resmi Sebastian	Analysis of seismic data (seismographs and strong motion accelerographs) of NJHPS, Nathpa	Sutluj Jal Vidyut Nigam (SJVN) Ltd.	Ongoing	15.55
8.	Dr. Putul Haldar	External Co-PI of "Earthquake Hazard and Risk Reduction on the Indian Subcontinent" with Institutional Cooperation between India and Norway	NORSAR, Norway	Completed	113.00
9.	Dr. Putul Haldar	PI of "Seismic Performance of Shear Walled Reinforced Concrete Frame Structure on Rocking Foundation"	ISIRD grant of IIT Ropar	Completed	125.00
10.	Dr. Putul Haldar	PI from IIT Ropar of "Next Generation Earthquake Loss Estimation Tool for Hilly Regions" in collaboration with IIT Roorkee	DST IMPRINT II AND Risk Management Solutions India (RMSI)	Completed	68.00
11.	Dr. Putul Haldar	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)	DST IMPRINT II and ELT India	Completed	75.00
12.	Dr. Putul Haldar	Co-PI of "Compendium of Traditional Earthquake Resilient Construction for Knowledge Sharing and Disaster Risk Reduction: Promotion of Traditional Construction Practices" in collaboration with IIT Roorkee, and Assam Engineering College Guwahati	National Disaster Management Authority (NDMA), New Delhi	Completed	25.00
13.	Dr. Putul Haldar	Team member of "Guidelines for Performance-Based Seismic Design of Reinforced-Concrete Buildings" in collaboration with IIT Roorkee	National Disaster Management Authority and Bureau of Indian Standards	Completed	5.88
14.	Dr. Mitesh Surana	Revival of Climate cum Disaster Resilient Vernacular Housing Techniques of the North- Western Indian Himalayan Region: Documentation, Investigation, and Knowledge Dissemination"	MOEFCC, Govt. of India	Ongoing	37.66

15.	Dr. Mitesh Surana	Analysis of Seismic Data (Seismographs and Strong Motion Accelerographs) of NJHPS, Nathpa	SJVN, Himachal Pradesh	Ongoing	15.55
16.	Dr. Mitesh Surana	Compendium of Traditional Earthquake Resilient Construction for Knowledge Sharing and Disaster Risk Reduction: Promotion of Traditional Construction Practices	NDMA, New Delhi	Completed	25.00
17.	Dr. Reet Kamal Tiwari	Development of Low-Cost Artificial Intelligence System for Early Detection of Landslide	NRDMS Division and Landslide Research Scheme of DST	Ongoing	47
18.	Dr. Reet Kamal Tiwari	Mapping Agriculture and Yields Forecasting Over India Using High- Resolution Microwave Remote Sensing	MISTI Global Seed Funds Application	Ongoing	~15
19.	Dr. Reet Kamal Tiwari	Sustainable agricultural planning for small farm holders in the Bist Doab region of Punjab	MISTI Global Seed Funds Application with	Ongoing	13500 USD
20.	Dr. Reet Kamal Tiwari	Slope Monitoring and Landslide Hazard Quantification for Hilly Roads.	National Highway Authorities of India	Ongoing	78.32
21.	Dr. Reet Kamal Tiwari	Terrain Modelling and Its Application in Landslide Hazard/Risk Assessment	ISRO	Ongoing	28
22.	Dr. Reet Kamal Tiwari	Permafrost destabilization induced mass wasting vulnerable zones modelling in higher Himalayan regions (Bhagirathi-Alaknanda Valley) through Snow cover-climate-terrain interactive mechanism employing Deep Learning techniques	ISRO	Ongoing	39.20
23.	Dr. Muthulingam S.	Impact Of Climate Change And Chloride-Induced Corrosion Damage Risks Of Concrete Infrastructure Deterioration Along Coastal Regions Of India	SERB	Completed	33
24	Dr. Sayantan Ganguly	A feasibility study on aquifer storage of water by artificial recharge in and around Punjab region, India	SERB	Completed	32

PEER REVIEWED INTERNATIONAL CONFERENCES/SYMPOSIUMS

Dr. Sayantan Ganguly

- 1. Prashanth T, Ganguly S and Banerjee D. Mapping areas suitable for artificial recharge structures in the Ropar District of Punjab, India. European Geosciences Union (EGU) General Assembly. Vienna. Apr 2022.
- 2. Ganguly S and Ganguly S. Adsorption of Chromium (VI) by soil sediments in heterogeneous porous media: a case study in Rupnagar district of Punjab, India. European Geosciences Union (EGU) General Assembly. Vienna. Apr 2022.
- 3. Prashanth T, Ganguly S, Gummadi M. Prioritizing areas prone to critical soil erosion by using Multiple Criteria Decision Analysis and GIS techniques'. International Conference on River Corridor Research and Management. IIT Guwahati, India. May 30- June 1, 2022. (Best paper presentation award for Thallam Prashanth).
- 4. Goswami R, Das, R and Ganguly S. Economic and Feasibility Study of Biomass-Based Electric Power Generation. The 15th Regional Conference on Energy Engineering And The 13th International Conference on Thermofluids 2022. University of Gadjah Mada, Indonesia, Oct 2022.
- 5. Goswami R, Das, R and Ganguly S. Experimental Investigation on Electric Power Generation by Harvesting Biomass Waste-heat using Thermoelectric Array. The 3rd International Recent Trends in Engineering, Advanced Computing and Technology Conference 2022, Jeddah, Saudi Arabia. Nov 2022.
- 6. Ganguly S and Ganguly S. Removal of Hexavalent Chromium by using natural soilchitin-magnetite nanoparticles composite: A preliminary investigation. American Geophysical Union (AGU) Fall Meeting abstract. Chicago, 14th Dec 2022.
- 7. Prashanth T and Ganguly S, Dhote P.R. Perenniality Analysis of the Godavari River, India by Using River Perenniality Index. American Geophysical Union (AGU) Fall Meeting abstract. Chicago, 15th Dec 2022.
- 8. Banerjee D and Ganguly S. Forecasting future groundwater recharge in California State, USA using deep learning techniques. American Geophysical Union (AGU) Fall Meeting abstract. Chicago, 15th Dec 2022.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Programs offered	:	B.Tech., M.Tech. , PhD	
No. of Students	:	B.Tech. : 84	
	:	M.Tech. : 37	
	:	PhD : 17	
Head of the Department	:	Dr. Sudarshan Iyengar	
No. of faculty members	:	17	
No. of staff members	:	Technical Staff :	05
		Administrative Staff :	01
Thrust Area	:		

44

- Parallel and distributed computing
- Approximation algorithms
- Image processing and pattern recognition
- Computational geometry
- Computer Vision
- Cloud computing and software architecture
- Performance modeling
- Applied Deep Learning
- Machine learning and Artificial intelligence
- **No. of Publications**

- Network science
- Sensor networks
- Computer Architecture
- Social Computing
- Collective Intelligence
- Spatial Computing
- Game Theory and Mechanism Design
- Wireless Networking and Internet of Things
- Human Centered Computing





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. Basant Subba PhD:Indian Institute of Technology Guwahati, India Network Intrusion Detection Systems, Network Security, Game Theory, Machine Learning



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



Dr. Jagpreet Singh PhD:Indian Institute of Technology Ropar, India Parallel and Distributed Systems, Wireless Network, Energy Harvesting, High Performance Computing.





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













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. Shashi Shekhar Jha

PhD, IIT Guwahati, India Artificial Intelligence, Machine Learning, Multiagent Systems, Robotics, Bioinspired Algorithms

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

Dr. Sudarshan lyengar PhD, Indian Institute of Science, Bangalore Data Sciences, AI for Social Good, Collective Intelligence, Social Computing



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



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



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



ONGOING ACTIVITIES

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



4 UG labs, 10 Research Labs, Department server, HPC facility (central facility)

No. of Labs	:	UG	:	04
		PG	:	01
		Research	:	10



AWARDS AND HONORS 2022-23 (FACULTY)

S.No	Name	Details	
1	Dr. Abhinav Dhall	ACM Multimedia Mediate Challenge 2022	
2	Dr. Shweta Jain	Serving as PC for IJCAI 2023	
3	Dr. Abhinay Dhall	Program Co-Chair, 24th ACM International Conference on	
3 Dr. Abriinav Dhaii		Multimodal Interaction 2022	
1	Dr. Nitin Auluck	Workshop co-chair, 23rd IEEE/ACM International Symposium on	
4		Cluster, Cloud, and Internet Computing (CCGRID), 2023.	
5	Dr. Nitin Auluck	Publicity Chair, IEEE Edge 2023.	
6	Dr. Nitin Auluck	PC member, IEEE Cloud 2023.	
7	Dr. Shweta Jain	PC member, AAAI 2023	
8	Dr. Shweta Jain	PC member, UAI 2023	



AWARDS AND HONORS 2022-23 (STUDENT)

S.No	Name	Details
1	Mr. Gulshan Sharma	Student travel grant ACM ICMI 2022
		1. Awarded with IndoML Travel Grant for poster presentation at IndoML 2022 held at IIT Gandhinagar.
2	Mr. Shivam Gupta	2. Awarded with student scholarship to attend Asian Conference on Machine Learning (ACML) at ISB Hyderabad.
		 Presented work on Fair Clustering at Workshop on Economics and Computation, organized at Ashoka University.
3	Mr. Napendra Solanki	1. Awarded Microsoft Research Travel Grant of rs 120k to attend AAMAS 2023 (London, UK)
Ū		2. Awarded Google Research Travel Grant of usd 2300 to attend AAMAS 2023 (London, UK)
		1. Research Intern at Wadhwani AI (August 2022 - July 2023).
	Mr. Aroof Aimen	2 Free PhD Registration Award, ECML PKDD - July 2022.
4		3. Winner of Oral Presentation, Shaastra, IIT Madras - Jan 2022.
		4. Awarded Full Sponsorship for Amazon Research Days, Bangalore - Nov 2022.



INVITED LECTURES BY FACULTY

S.No	Name	Title	Department	Institute	Date (DD/MM/YYYY)
1	Dr. Shweta Jain	LDA, QDA, SVM.	RBCDSAI Summer School on DS/AI/ML (for women only)	PSG College of Technology, Coimbaotre	16th July 2022.



LECTURES BY VISITING EXPERTS

S. No.	Name of the visitors, designation and institute/organization	Purpos	Date
1	Dr. Shibu Raman, Cardiff University UK.	Gave a talk on liveable urbanism and discussed research collaboration.	21.07.2022
2	Dr. Indu Joshi, postdoctoral researcher at Inria Sophia Antipolis, France	Gave a talk on ''Generalizable and Explainable Deep Models''	18.07.2022
3	Dr. Vanishree Rao, PhD, Senior Cryptographer Intertrust Technologies	Gave a talk on ''Mina - A Blockchain in its True Sense''	25.07.2022
4	Dr. Sukrit Gupta, Research Fellow with Hasso Plattner Institute, Berlin.	Gave talks on 1. "Application of Deep Learning to Medical Imaging" 2. "Modelling functional activity for brain state identification"	05.08.2022

5	Dr. Ashish Mishra,Postdoctoral Researcher at Purdue University	Gave talks on 1. "Programming Languages Foundations and Type Systems" 2. "Specification-Guided Component-Based Synthesis from Effectful Libraries"	16.09.2022
6	Dr. Swapnil Dhamal, Researcher at Telecom Sudparis, France	Game Theoretic Aspects in Contemporary Applications such as Blockchain	16.11.2022

VISITS ABROAD BY THE FACULTY

5	Sr. No.	Name of the faculty member	Country	Detail of visit with date
	1	Dr. Viswanath Gunturi	France	WISE-2022 conference (1st November 2022 - 3rd November 2022)

VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Ms. Vidushi Agarwal	Canada	Feb 2022-July 2023
2	Mr. Aroof Aimen	France	19-23 Sep 2022

MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Sr. No.	Funding Agency	Name of Faculty Member	Title of Project	Fund (in Crores)
1	Yamaha Innovations	Dr. Abhinav Dhall	LIDAR based tree species identification	
2	KDDI Research Japan	Dr. Abhinav Dhall	Engagement AI	
3	MATRICS	Dr. Shweta Jain	Characterizing and Designing Combinatorial Multi- armed Bandit Mechanisms	6.6 Lakhs
4	CRG	Dr. Shweta Jain	Learning in the Presence of Strategic Agents	55 Lakhs
5	CRG	Dr. Shweta Jain	Achieving fairness in federated learning models	39.6 Lakhs
6	Microsoft	Dr. Viswanath Gunturi	Microsoft Academic Research Grant	



DEPARTMENT OF ELECTRICAL ENGINEERING

Programs offered	:	B. Tech, M. Tech and PhD		
No. of Students	:	B.Tech. : 329		
		M.Tech. : 68		
		PhD : 108		
Head of the Department	:	Dr. Subrahmanyam Murala		
No. of faculty members	:	24		
No. of staff members	:	10		
		Technical Staff : 07		
		Administrative Staff : 03		
Thrust Area	:	Power Engineering, Microelectronics and VLSI, Signal		
No. of Publications	:	136		





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, nonequilibrium 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*,

stability statics, synchrophasor technology & its applications, state estimation in power systems.



Go



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



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, Fault tolerant converters.



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. RAGHAV SHARMA INSPIRE Faculty

Indian Institute of Technology Delhi

Spintronic Devices for highfrequency neuromorphic and energy harvesting applications, Topological materials for high-frequency sensing and spin-charge conversion, sub-THz generation and detection, Nano-device fabrication and nanomaterials growth



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. Rohit Y. Sharma Associate Professor





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, Co-operative communication, Next generation wireless networks, Intelligent Transportation*

systems, Underwater communication



DR. SANTOSH KUMAR VIPPARTHI

Assistant professor Indian Institute of Technology Varanasi (IIT Varanasi), BHU Computer Vision, Deep Learning, Image Retrieval, Affective Computing, Expression Recognition, Arial Image Analysis, Face Recognition and Motion Detection.



DR. SATNESH SINGH

Ramanujan Faculty Fellow Indian Institute of Technology Delhi Robust control techniques, Control & synchronization of

Control & synchronization of dynamical systems, Observer/State estimation, Functional observer, Cyber physical systems





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.



abs	:	UG	:	11
		PG	:	09
		Research	:	16

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 & Dr. A. V Ravi Teja	
2	HV (UG+PG)	Prof. C.C. Reddy	 High Voltage AC Source 100 kV & 150 kV High Voltage DC Source 140 kV High Voltage Impulse Source 420 kV Partial Discharge Measurement System 100 kV Cascaded Transformers 100 kV Capacitance and Tan Delta Measuring System (12 kV) Oil purifier Cable testing system Leakage current measurement system

No. of Labs

3	Power Electronics (UG+ PG)	Dr. R Sekhar	DSOs, Transformers, Function generators, DSP boards, FPGA boards
4	Electric Drives Lab	Dr. A. V. Raviteja & Dr. Saifullah Payami	JMag Software, DSO
5	Analog + Digital (UG)	Dr. Devarshi Das & Dr. Pardeep Duhan	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	Prof. J.S. Sahambi	Embedded systems kits Zigbee kits Digital storage scopes Function generators
10	InfraRed Imaging Lab	Dr. K. Ramachandra Sekhar	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. Devarshi Das and Dr. Mahendra Sakare	Dell Power edge Rack Server: Intel Xeon Platinum 8160(2.10GHz/24- core/33MB/150W)
13	Electromagnetics Lab (UG)	Dr. Ashwani Sharma	PCB milling machine
14	Antenna/ MW Lab	Dr. Ashwani Sharma	Vector network analyzer, Anechoic chamber, chip binding machine, field measurement scara robotic setup
15	Computational Lab		
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. Pardeep Duhan, Dr. Abhishek Sharma	DC Probe Station, Keithley 4200
18	Nanoelectronic Lab	Dr. Rohit Y. Sharma, Dr. Devarshi Das and Dr. Mahendra Sakare	
19	Product Eng. Lab (For Loan)	Dr. Khusboo Rakha	
20	Computer Vision and Pattern Recognition Lab	Dr. S. Murala, Dr. Santosh Kumar Vipparthi	DGX Station Thermal Camera Quadcopter with thermal and visual camera

21	Dielectric Measurement Lab	Prof. C.C. Reddy	 Dielectric Spectroscopy Electrometer Pulsed Electro-acoustic System Solid Nano Dielectric Hydraulic Press Solid Nano dielectric Roll Mixer Solid Nano Dielectric High Speed Mixer Cable Extruder Thermal Imaging Camera Microscopes Needle plane treeing test system Water treeing test system
22	Communication Research Lab	Dr. Suman Kumar, Dr. Sam Darshi, Dr. Brijesh Kumbhani, Dr. Satyam Agarwal	 EXata Network Emulator Software NI USRP software defined radio
23	BEL Lab (UG)	Dr. Mahendra Sakare	DSO: Digital Storage Oscilloscope FG: Function Generator PS: Power supply
24	Basic Electrical Engineering Lab	Dr. Saifullah Payami, Dr. J kalaiselvi	
25	Control Eng. Lab	Dr. S. Roy	
26	Circuits and Devices Simulation Lab	Dr. Devarshi Das , Dr. Brajesh Rawat	
		Dr. Saifullah Payami	Electric Machines (UG) Ground Floor, Room no:101
		Prof. 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
	Power Engineering Labs	Dr. A.V. Raviteja & Dr. Saifullah Payami	Electric Drives Lab Room no:106 & 308
1		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)
		Prof. C.C. Reddy	Dielectric Measurement Lab Third Floor, Room no:406
		Dr. Saifullah Payami	Basic Electrical Engineering Lab Third Floor, Room no:409 & 408

		Prof. J.S. Sahambi	Embedded System Lab
	-		First Floor, Room no:206
		Dr. K. Ramachandra Sekhar	Infra Red Imaging Lab
			First Floor, Room no:207 Communication Engg.
			Lab (UG $+$ PG)
		Dr. Suman Kumar	Second Floor, Room
			no:301
	Signal Processing		Electromagnetics Lab
	and	Dr. Ashwani Sharma	(UG)
2	Communication		Second Floor, Room
	Labs		no:303 Antenna/ MW Lab
		Dr. Ashwani Sharma	Second Floor, Room
			no:304
		Dr. S. Murala	Computer Vision and
		Dr. Santosh Kumar Vipparthi	Pattern Recognition Lab
			Third Floor, Room no:404
		Dr. Suman Kumar, Dr. Sam Darshi, Dr.	Communication Research
		Brijesh Kumbhani, Dr. Satyam Aggarwal	Third Floor, Room no:407
		Dr. Devarshi Das, Dr. Pardeep Duhan	Analog + Digital (UG)
			First Floor, Room no:201
		Dr. Rohit Sharma, Dr. Devarshi Das, Dr.	Nanoelectronics Lab, 402
	Microelectropice	Mahendra Sakare	VLSI Design Lab
3	Microelectronics and VLSI Design Labs	Dr. Devarshi Das, Dr. Mahendra Sakare	Second Floor, Room
Ŭ		Dr. Devalori Dae, Dr. Marienara Cakare	no:302
			Nanoelectronic Device
		Dr. Brajesh Rawat	and Sensor lab
		Dr. Davidson Duban	Third Floor, Room no:401
		Dr. Pardeep Duhan, Dr. Abhishek Sharma	VLSI Characterization Lab Third Floor, Room no:403
			BEL Lab
		Dr. Mahendra Sakare	Third Floor, Room no: 313
		Dr. Dovorobi Doo	Circuits and Devices
		Dr. Devarshi Das, Dr. Brajesh Rawat	Simulation Lab
		-	Third Floor, Room no: 315
4	Institute general	Dr. Khusboo Rakha, Mechanical	Product Eng. Lab
	course UG lab	Department	Third Floor, Room no:403



AWARDS AND HONOURS 2022-23 (FACULTY)

S. No.	Name of the faculty	Award/ Achievement
1	Dr. Rohit Y. Sharma	Fellow of the Institution of Engineering and Technology (IET), UK
2	Dr. Rohit Y. Sharma	Visiting Professor/Visiting Senior Research Engineer at the 3D Systems Packaging Research Center, Georgia Institute of Technology, Atlanta, USA



AWARDS AND HONOURS 2022-23 (STUDENT)

S. No.	Name of the Student	Award/ Achievement
1	Mr. Pritam Choudhary	Secured All India Rank 9th in the 'UPSC Exams 2021'
2	Mr. Vedant Sati	Solar Decathlon India 2021 Winners for Community Resilience Shelter
3	Ms. Kanupriya Varshney	Selected as the 2022 WISC Scholarship Winners
4	Ms. Anjali Goel	Best Poster Award at 6th IEEE - ICEE 2022, organized by IISc Bangalore from 12-14th December 2022
5	Mr. Arhum Ahmed, Mr. Nishant Gupta, Mr. Dhawal Salwan, Mr. Sandeep Kumar, Mr. Manoj Bansal	Third prize in AAM Concepts – Innovation Challenge
6	Mr. Gautam Kumawat	Subhasis Nandi Memorial Student Travel Awards in 10th IEEE international Conference on Power Electronics, Drives and Energy Systems (PEDES 2022), MNIT Jaipur, Rajasthan India, 14th-17th December 2022.
7.	Mr. Ananth Bharadwaj	2nd prize in Poster Presentation at 1st EE-RSF Research Day, IIT Ropar
8.	Mr. Vivek Srivastava	Best Poster Presentation Award, EE SRF, IIT Ropar 2022
9.	Mr. Manoj Kumar	3rd prize in demonstration of WPT-enabled IoT node at 1st EE-RSF Day, IIT Ropar, 2022



INVITED LECTURES BY FACULTY

S. No.	Name of the Faculty	Lecture	Institute	Date
1	Dr. Brajesh Rawat	Session chair for 7th I2CT 2022 - Session Chair - Meeting Link - TRACK -A4	IEEE Conference. (Virtual)	April 08, 2022
2	Dr. Brijesh Kumbhani	Invited talk for the course on "Research Trends in Wireless Sensor Networks" title: Future Generations Sensor Networks, NITTTR Chandigarh	NITTTR Chandigarh	April 28, 2022
3	Dr. Brijesh Kumbhani	Talk on "mmWave Technology and Applications" in short term course from 25 April 2022 to 29 April 2022 on Latest Wireless and Communication Technologies, NITTTR, Chandigarh	NITTTR, Chandigarh	April 29, 2022
4	Dr. Brijesh Kumbhani	Invited talk on "Non- orthogonal multiple access" at short term course on " 5G and IOT"	NITTTR Chandigarh	Jul 18, 2022

5	Dr. Ashwani Sharma	Invited to deliver a talk on "An antenna design framework for the next generation of communication systems.	Punjabi University, Patiala	August 23, 2022
6	Dr. A. V. Ravi Teja	Invited talk on "Various turbines for wind power extraction" in STC on Smart Grid and Renewable Energy Sources	NITTTR Chandigarh (Online)	Septem ber 1, 2022
7	Dr. Sam Darshi	Invited as an Expert Speaker to deliver a talk in Workshop for lecture related to Vehicular Communications/Networks.	IIT Indore	July 14, 2022
8	Dr. S. Murala	Invited talk on "Computer Vision with Deep Learning"	NIT Hamirpur	Oct 18, 2022
9	Dr. Santosh Kumar Vipparthi	Invited Talk on "Change Detection and its Challanges using Deep Learning"	NIT Warangal	August, 2022
10	Dr. Santosh Kumar Vipparthi	Invited Talk on "Deep Learning and Its Applications"	NIT Warangal	Septem ber, 2022
11	Prof. J. S. Sahambi	Invited as an External Expert to conduct Final-Thesis viva- voce of M.E. students for M Tech Thesis in	NITTTR, Chandigarh	Novem ber 29, 2022
12	Prof. C. C. Reddy	Invited for Heritage Network General Assembly 2022 at IIT Madras	IIT Madras	Octobe r 20-21, 2022
13	Prof. C. C. Reddy	Invited for NBA expert to evaluate its UG/PG Engineering programs in Tier-1 format for grant of NBA accreditation.	Visvesvaray a National Instituteof Technology, Nagpur	Novem ber 4th – 6th, 2022
14	Prof. C. C. Reddy	Invited to evaluate its UG Engineering programs in Tier-1 format for grant of NBA accreditation.	Nandha Engineering College. Erode (Tamil Nadu)	Decem ber 9th – 11th, 2022
15	Dr. Satyam Agarwal	Invited for the presentation "IEEE 19th International Conference on Smart Communities: Improving Quality of Life Using ICT, IoT & AI" with the title, Machine learning driven signal demodulation at Kennesaw State University, Marietta, GA, USA.	Kennesaw State University, Marietta, GA, USA	Decem ber 19th – 21st, 2022
16	Dr. Brajesh Rawat	Invited talk on 2-D Material beyond MoS2: from physics to applications" for 6th IEEE International conference on Emerging electronics	IEEE Bangalore	Decem ber, 12- 14th, 2022
17	Dr. J. Kalaiselvi	Invited for Technical session chair of ONCON 2022 - IEEE Conference	IEEE Conference	Dec 9 - 11, 2022.

18	Dr. J. Kalaiselvi	Invited Talk in NITTR on STC on Power Electronics for Renewable Energy Applications	NITTR	Octobe r 30 - Novem ber 4 2022
19	Dr. Satyam Agarwal	Invited talk NITTTR on IoT in smart cities	NITTTR	Dec. 6, 2022
20	Dr. Sam Darshi	Invited talk in NIELIT, Ropar on Role of 5G in Digital Economy	NIELIT, Ropar	Dec. 20, 2022
21	Dr. A. V. Ravi Teja	Invited for Technical session chair of ONCON 2022 - IEEE Conference	IEEE Conference	Dec 9 - 11, 2022.
22	Dr. A. V. Ravi T eja	Invited Talk in NITTR on STC on Power Electronics for Renewable Energy Applications	NITTR	Novem ber 3, 2022
23	Dr. A. V. Ravi Teja	Invited Talk in NITTR on STC on Research Scope in Electric Vehicles	NITTR	Decem ber 6, 2022
24	Dr. A. V. Ravi Teja	Invited Talk in JNTU Kakinada on online workshop on Analysis and Simulation of Power Electronic Converters	JNTU Kakinada	Decem ber 19- 20, 2022
25	Dr. Devarshi Das	Technical Track Chair, Analog and Mixed Signal Design, VLSID 2023	Hyderabad	Januar y 8-12, 2023
26	Dr. Ashwani Sharma	Invited talk on "Recent Advancement on RF Antennas and Systems"	LNMIIT, Jaipur	3rd Januar y, 2023
27	Dr. Brajesh Rawat	Invited talk on "Design and Implementation of an Integrated Air Quality and Flue Gas Monitoring System"	C-DAC Mohali	14-03- 2023
28	Dr. Brajesh Rawat	Expert lecture on modeling and simulation of 2 D materials	NIT Uttrakhand	
29	Dr. Saifullah Payami	Invited for Technical Session Chair International conference on Power, Instrumentation, Energy & Control 2023 (PIECON 2023), AMU, Aligarh	Aligarh Muslim University	10-12 Februar y 2023.

LECTURES BY VISITING EXPERTS

Sr. No	Name of the experts with affiliation	Торіс	Date
1	Prof. Laxmidhar Behera, Director, IIT Mandi	1st EE-RSF Research Day	22nd April 2022
2	Prof. B.G. Fernandes, (Professor at IIT Bombay)	EE-RSF talk series	14th of May, 2022

3	 Mr. Ravishankar Shiroor, Co- founder and COO, Stellapps Technologies Mr. Krunal Kalbende, CEO, COJAG Dr. Arvind, Director Satellite Engineering, Astrome Technologies 	Workshop on Next Generation Wireless Networks	August 26th - 27th 2022
4	 Dr. Amritpal Singh, Director, Energinx India Pvt Ltd., Bangalore. Prof. Naran N Pindoriya, IIT Gandhinagar Dr. Yashasvi Bansal, IIT Kanpur 	Workshop on Efficient Energy Management System for Smart Residential Networks	September 2nd -3rd , 2022
5	Prof. Ashwin Ashok (Professor at Georgia State University)	EE-RSF Talk on Monitoring Solar Effect with CubeSats	October 18th, 2022

VISITS ABROAD BY THE FACULTY

Sr. No.	Name of the faculty member	Country	Detail of visit with date
1	Dr. Rohit Y. Sharma	USA	Visiting Professor/Visiting Senior Research Engineer at the 3D Systems Packaging Research Center, Georgia Institute of Technology, Atlanta, USA . On Sabbatical leave from 01.09.2022
2	Dr. Satyam Agarwal	France	Research visit at EURECOM, Sophia Antipolis, France held on dated 12 Dec – 16 Dec 2022
3	Dr. Satyam Agarwal	USA	Invited for presentation at IEEE HONET 2022 in Kennesaw State University, Marietta, GA, USA that held on dated 19 – 21 Dec 2022

VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Mr. Pratik Kalkal	Belgium	Presented papers at 48th Annual Conference of (IECON-22) held in Brussels from October 17-20, 2022
2	Ms. Bellamkonda Dwiza	Maldives	Presented paper at IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT) 2023 held in The Maldives National University from March 11-12, 2023
3	Mr. Balakrushna Sahu	UAE	Presented paper in Conference ISGT-ME 2023 held at Abu Dhabi (UAE) from 12-15 March 2023
4	Mr. Subal Beura	UAE	Presented paper in Conference ISGT-ME 2023 held at Abu Dhabi (UAE) from 12-15 March 2023
5	Mr. Madduluri Ananth Bharadwaj	Italy	Presented paper at European Conference on Antennas and Propagation (EuCAP) 2023 held in Florence (Italy) from 26.03.2023 to 31.03.2023

6	Mr. Vivek Kumar Srivastava	Italy	Presented paper at 17th European Conference on Antennas and Propagation held in Florence, Italy from 26-31 March 2023
7	Mr. Sundeep Kumar	Italy	Presented paper at 17th European Conference on Antennas and Propagation held in Florence, Italy from 26-31 March 2023



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Sr. No.	Funding Agency	Name of Faculty Member	Title of Project	Total Sanctioned Amount (in cr.)	Project Status
1	DST	Dr. Ranjana Sodhi	Enhancement of Power system monitoring and stability assessment using synchrophasor technology	0.17	Completed
2	DST	Prof. J.S. Sahambi	Smart phone based real time remote monitoring of cardiac patients from hospital CCU's	0.32	Completed
3	DST	Dr. Rohit Y. Sharma	Design and optimization of an ultra low-loss interconnect link on silicon interposer	0.22	Completed
4	DST	Prof. C. C. Reddy	Experimental Investigations on Breakdown Phenomenon In power Cable	0.55	Completed
5	DRDO- CARS	Dr. Rohit Y Sharma	Design verification and analysis of electronic impact cum time delay sensing module	-0.1	Completed
6	DRDO	Prof. C. C. Reddy	Design and Development of Compact Firing Circuit	0.09	Completed
7	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	Completed

8	CPRI	Prof. C. C. Reddy	Investigations on new nano- composite materials for electrical insulation	0.65	Completed
9	DeitY	Dr. Rohit Y Sharma	Special Manpower Development Programme for Chips to System Design	0.6	Completed
10	DeitY (Media Lab Asia)	Dr. Rohit Y Sharma	Visvesvaraya PhD Scheme for Electronics and IT	2.46	Running
11	Industrial Consultancy	Prof. C. C. Reddy	Evaluation of 11Kv Earthed HT Xlpe Cable Conductor Resistance and High Voltage Performance as per IS7098 part-II	0	Completed
12	India-UK Collabor ative Industrial R&D Program me-GITA	Dr. Rohit Y Sharma & Dr. Ekta Singla	A PATH: Affordable Preventative And Assistive Technology For Healthcare	0.15	Running
13	Industrial Consultancy	Dr. Rohit Y. Sharma	Bridging the Innovation Gap	0.03	Completed
14	Industrial Consultancy	Prof. C. C. Reddy	Transition Joint : Material, Interfacial and Design Investigations	0.05	Completed
15	DST	Department of Electrical Engineering	FIST Program	2.42	Running
16	Digital India Corporat ion (Formaly Media Lab Asia)	Dr. Rohit Y. Sharma	Award of Young Faculty Research Fellowship	0.37	Running
17	Industrial Consultancy	Dr. Rohit Y. Sharma	Technical Reviews of MCM layout & SI-PI analysis and guidance for Packageperforman ce optimization	0.01	Completed
18	SERB- DST	Dr. Suman Kumar	FFR based Non- orthogonal Spectrum Sharing among Licensed Operators	0.37	Running
19	Industrial Consultancy	Prof. C. C. Reddy	HT Cable Test	0.02	Completed

20	SERB	Dr. J. Kalaiselvi	Mitigation of common mode issues in SiC converter fed induction motor drive	0.33	Completed
21	DST- Inspire Faculty Award	Dr. Satyam Agarwal	Wireless Networking for Sustainable Rural Connectivity	0.7	Running
22	DRDO- TBRL- CARS	Prof. C. C. Reddy	Design and Development of Flux Compression Generator (FCG) Simulator	0.1	Running
23	SERB	Dr. Subrahmanyam Murala	Automatic Driver Assistance Technology: Fog Removal in Videos	0.28	Completed
24	SERB	Dr. Ashwani Sharma	Design and development of miniaturized cost- effective antennas for Internet of Things and 5G technology	-0.5	Completed
25	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	Completed
26	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
27	Industrial Consultancy	Dr. Suman Kumar	DESIGN AND DEVELOPMENT OF LOW-COST RFID SYSTEM	0.04	Completed
28	Industrial Consultancy	Dr. Subrahmanyam Murala	PISTON QUALITY DETECTION	0.02	Completed
29	Industrial Consultancy	Dr. Ashwani Sharma	Simulated Design of a Metal Mount Rfid Tag	0	Completed
30	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	Completed

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31	Indo- Taiwan Joint Research Centre	Dr. Rohit Y. Sharma	Indo-Taiwan Joint Research Centre on Artificial Intelligence and Machine Learning	2.16	Running
32	Indo- Canadian IMPACTS	Dr. Rohit Y. Sharma-PI, Dr. Mrinal Devarshi Das -Co-PI	Development of Portable Spine MEG Scanner for Real Time Spinal Functional Evaluation and Data Acquisition	0.27	GNR
33	Industrial Consultancy	Prof. C. C. Reddy	Surface Voltage Measurement and Simulation on Covered Conductor	0.02	Completed
34	SERB- CRG	Dr. A. V. Ravi Teja	Sensorless Control of Switched Reluctance Motor Drives for Electric Vehicle Applications	0.26	Running
35	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
36	Industrial Consultancy	Dr. Rohit Y Sharma	Design and development an Al- enabled hybrid Intrusion Detection, Prevention and Offensive System (IDPOS)	0.06	Closed
37	Industrial Consultancy	Prof. C. C. Reddy	Investigations on Transition joint dielectrics of three different Manufactures	0.17	Completed
38	Industrial Consultancy	Dr. K. Ramachandra Sekhar	Design and development of voltage regulators of fixed and variable type	0.01	Completed
39	Industrial Consultancy	Prof. C. C. Reddy	Investigating the effect of Simulated 25KV AC Power line transients on BEL Product	0.01	Completed
40	Industrial Consultancy	Prof. C. C. Reddy (Cl) Dr. Bibhu P Padhy and Dr. R. Sekhar (Co-Cl)	HV Test and Assessment of Coupling Capacitor of Stator Winding at 39.1kv DC and Tan Delta Assessment	0.01	Completed

41	Industrial Consultancy	Dr. K. Ramachandra Sekhar	Proposal on Design And Development of Smart Voltage Regulators of Fixed and Variable Type	0.01	Completed
42	Industrial Consultancy	Prof. C. C. Reddy	Greater Mohali Area Development Authority Document Vetting (Described in Scope of Project)	0.05	Completed
43	Industrial Consultancy	Dr. Saifullah Payami	Development and Integration of LED Driver for Airfield Lighting System	0.07	Completed
44	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 Room Temperature	0.24	Running
45	Industrial Consultancy	Prof. C. C. Reddy	Motorization of Main Gates, Sluice Gates and Regulator Gates of Sirhind Canal System at Ropar Headworks	0.25	Running
46	Industrial Consultancy	Dr.Subrahmany am Murala	Deep Image Matting	0.45	Completed
47	Industrial Consultancy	Dr. Rohit Y. Sharma (CI) Dr. Satyam Agarwal (Co-CI)	Artificial Intelligence and Data Science Upskilling	1.00	Running
48	Industrial Consultancy	Prof. C. C. Reddy	Investigations on HV Power Cable Technology	0.23	Running
49	Industrial Consultancy	Dr. Subrahmanyam Murala	Under Screen Camera Project	0.62	Completed
50	Industrial Consultancy	Dr. Brajesh Rawat	Impact on emission reduction through replacement of coal by Renewable Energy Source, Paddy Straw, for industrial application	0.28	Running
51	Industrial Consultancy	Prof. C. C. Reddy	Testing of HT Cables for High Voltage Performance	0.01	Completed

52	SERB- CRG	Dr. Satyam Agarwal (PI) and Dr. Sam Darshi	Enabling Distributed Beamforming via Machine Learning for Energy Efficient Communications	0.46	Running
53	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	Running
54	Central Power Research Institute (CPRI)	Dr. Bibhu Prasad	Study on Detection of False Data Injection (FDI) Attacks in Smart Grid Cyber-Physical Systems: A Machine Learning Approach	0.14	Running
55	Industrial Consultancy	Dr. Suman Kumar	Development of Lora end-node system for parking application	0.04	Completed
56	SERB- CVD	Dr. Devarshi Mrinal Das	Design and development of an IoT enabled Pulse- Oximeter system for integrating with oxygen concentrators	0.09	Running
57	SERB	Dr. Mahendra Sakare	Low power programmable multiple uncorrelated output PRBS generator integrated circuit	0.26	Running
58	SERB	Dr. Sam Darshi	Reliability Enhancement for Vehicle-2- Pedestrian (V2P) Communication Scenario using Peer Conscious Opportunistic Network Coded Cooperation	0.39	Running
59	MeitY	Dr. K. Ramachandra Sekhar	The AI Enabled Solar baed Multi- port High Gain Electric Vehicle AC Charging Station for Domestic and Commercial Use	0.66	Running

60	Industrial Consultancy	Dr. Indramani Dhada PI, Dr Narinder Singh and Dr. Suman Kumar (Co-PI)	Preparation of DPR and RFP for Upgradation, Operation and Maintenance of Garbage Processing Plant at Chandigarh	0.38	Running
61	SERB- CRG	Dr. Devarshi Mrinal Das	A Noise-Power-Area Optimised Instrumentation Amplifier for Sensing Applicationsrea	0.34	Running
62	Industrial Consultancy	Prof. C. C. Reddy	Understanding and Assessment of Stress Control Materials	0.07	Running
63	Industrial Consultancy	Prof. C. C. Reddy	Failure analysis of 220V cable joints	0.06	Running
64	Industrial Consultancy	Dr. Subrahmanyam Murala & Dr. Abhinav Dhall	Lidar data based tree Species classification	0.13	Running
65	SERB- TARE	Dr. Manjunath K under Dr. K. Ramachandra Sekhar	SERB National Post- Doctoral fellowship	0.1	Running
66	Industrial Consultancy	Dr. Saifullah Payami	Development of Switched Reluctance Motor (SRM) Drives for Actuators	0.27	Running
67	SERB-SP	Dr. Brajesh Rawat	sp/yo/2021/2509	0.5	GNR
68	SERB- CRG	Dr. Subrahmanyam Murala	Intelligent Transportation System: AI based Deep Learning Technology for Multi-Weather Video Restoration	0.43	Running
69	SERB- CRG	Prof. C. C. Reddy	Effect of Long Term Electrical Aging on Space Charge Accumulation under Step Stress and Polarity Reversals in HVDC Cable Insulation	0.44	Running

70	SERB- CRG	Dr. Ashwani Sharma	Switched multibeam antenna design and Quality-aware synthesis process for wireless coverage enhancement in drone assisted smart mobility application	0.33	Running
71	Industrial Consultancy	Dr. Subrahmanyam Murala (Cl) Dr. Santosh Kumar V (Cl)	Deep Learning based Solution for Electric Pole Restoration (Deblurring and Denoising)	0.25	Running
72	Industrial Consultancy	Dr. Subrahmanyam Murala (CI), Dr. Santosh Kumar V (CI) and Dr. Abhinav Dhall (CI)	Tool Development for Improvement in quality of images captured offshore	0.17	Running
73	IITG-TIH	Dr. Santosh Kumar Vipparthi	Autonomous Underwater Vehicle Assistance with video quality Enhancement and Restoration	0.1	Running
74	Industrial Consultancy	Prof. C. C. Reddy	Design Specifications for Motors for Baddi Lift Scheme at Kandi Canel Stage II	0.07	Running
75	SERB- EEQ	Dr. Santosh Kumar Vipparthi	iSelecT: Multifaceted comprehensive framework for Referred instance selection and segmentation in a visual data	0.41	Running
76	SERB- SCP	Dr. Brijesh Kumbhani (PI) and Dr.Satyam Agarwal, Dr.Sam Darshi and Prof. Jyotindra Singh Sahambi	Non-contact small form-factor neonatal apnea monitoring device	0.32	Running
77	ISRO	Dr. Sashi S. Jha (Pl) Dr. Satyam Agarwal	Distributed Beamforming and Beampattern Design using Drone Swarm Network	0.35	Running
78	MoES/PA MC/DOM	Dr. Santosh Kumar Vipparthi	Al based Technology for Underwater Varicoloured Video Restoration and Object Detection	0.45	Sanction Order not received

79	MoES/ DOM	Dr. Sam Darshi(PI), Dr. Brijesh Kumbhani, Dr. Satyam Agarwal, Dr. Satyajit Thakor (IIT Mandi)	Design of RSMA based Cooperative Vehicular Network for Deep Ocean Critical Missions	.59	Sanction Order not received
80	Indi- Taiwan Al Center, IIT Ropar	Dr. Sam Darshi (PI),Dr. Jan yi Pan (Taiwan), Dr. Satyam Agarwal, Dr. Brijesh Kumbhani	Reliability and Lifetime Improvement in Next Generation Vehicular Communication Networks using IoT and Al/Machine Learning Based Coded Cooperation.	.06	
81	DST- internatio nal cooperati on division	Dr. Brijesh Kumbhani (PI), Dr. Sam Darshi, Prof.Ghanshya m Singh (MNIT Jaipur), Dr. Ila Sharma (MNIT Jaipur) and Prof. Erich Leitgeb (Uni. of Graz)	Terrestrial network offloading for enhancement of vehicular communication through integration of microwave with optical wireless communication	0.05	

S. No.	Project Title	Faculty	Funding Agency
1.	Design of RSMA based	PI- Dr. Sam Darshi	
	Cooperative Vehicular	Co-PI - Dr. Brijesh Kumbhani	Ministry of Earth Sciences
	Network for Deep Ocean	Dr. Satyam Agarwal	(MoES)
	Critical Missions	Dr. Satyajit Thakor (IIT Mandi)	


DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

Programs offered	:	PhD
No. of Students:		50
		(PhD-Regular: 40, PhD- Part Time:9, PhD - EXTERNAL:1)
Head of the Department	:	Dr. Kamal Kumar Choudhary
No. of faculty members	:	12
No. of staff members	:	02 (Technical Staff: 0, 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, Innovation studies., Urban studies, Film studies, Continental Aesthetics.

No. of Publications : 24





Dr. Amritesh

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



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



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', Urbansim



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 Applied Psychology (Counselling and Social Psychology: Emotion Regulation for maladaptive behaviours)



Dr. Rano Ringo

Associate Professor PhD, IIT Roorkee Gender studies, Postcolonial studies, Science Fiction and Fantasy, Canadian Literature



Dr. Ravi Kumar

Assistant Professor IIT Delhi. Operations Management, Supply Chain Management, Management Science, Operations & Maintenance Practice, Business Analytics and Artificial Intelligence using Python, Advanced Decision Analysis, Forecasting tools & techniques



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*



No. of Labs : 02



Name of the lab

Cognitive Lab

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.

Name of the lab : Language and Linguistics Lab

Name of the Faculty-In Charge : Dr. Aparna N.

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.



Dr. Smruti Ranjan Bahera

2022 Best Paper Award-2022 for the paper titled "A Re-assessment of the Role of Democracy in the Trade-Growth Relationship, for the theme of Post-Pandemic Economic Recovery of India:

Dr. Smruti Ranjan Bahera

Policies and Challenges, at the 105th Indian Economic Association (IEA) Annual International Conference, December 27-29, 2022 at Fakir Mohan University, Balasore, Odisha, India

Dr. Aparna Nanda

Awarded the Superlative Presenter Award in 8th World Conference on Women's Studies (2022)

Dr. Aparna Nanda

Editorial Board Reviewer of Journal of International Women's Studies (IJWS)

Dr. Dibyakusum Ray

Member. Review Board. Green Letters

Dr. Bhavesh Garg

Selected as Young Economist to participate in 7th Lindau Laureate Meeting on Economic Sciences in Lindau, Germany in 2022.

Dr. Bhavesh Garg

Awarded Prof MJ Manohar Rao Award for the year 2022 by The Indian Econometric Society on January 5, 2023.

Dr. Bhavesh Garg

Opinion articles in national newspapers Why India needs stable capital flows - The Indian Express. February 28, 2023. Demographic transition: India can reap rich dividends with right policy focus (with Karan Rai) - The Hindu Business Line. December 21, 2022.

AWARDS AND HONOURS 2022-23 (STUDENT)

Mr. Sayar Ahmad Shah selected for three month Visiting Scholarship 2022 at Indira Gandhi Institute of Development Research, Mumbai

INVITED LECTURES BY FACULTY

Dr. Smruti Ranjan Behera,

Session chair on "Restoring Economic Dynamism" at the international conference "Business in a Turbulent World Keeping Connection Alive" on 21st November 2022 (Monday) at Mittal School of Business, Lovely Professional University, Phagwara, Punjab

Dr. Bhavesh Garg:

Invited speaker at Punjab Engineering College, Chandigarh on "Time Series Data Analysis" on December 3, 2022.

Dr. Dibyakusum Ray:

Speaker at The Centre for Policy Research (CPR) and Centre de Sciences Humaines (CSH) digital workshop on: "... without a past, without history, free...": the commercial, (g)local and the fringed Indian city-lit, 1980-90. Dec 20. 2022. Delhi. India.

Dr. Kamal Kumar Choudhary

Neurophysiological variation in the processing of case: Insights for Language and Cognition, Emerging Trends in Cognitive Sciences, Indian Institute of Technology Hyderabad JUNE 7-9, 2022

Dr. Aparna Nandha

Workshop on Quality Editorial Writing. University of Science and Technology Meghalaya. Sep 7, 2022.

Dr. Somdev Kar

Three lectures as a resource person in "Summer School on Language Documentation", organized by Scheme for Protection and Preservation of Endangered Languages (SPPEL), at the Central Institute of Indian Languages (CIIL), Mysore, during May 17-31, 2022.

Dr. Swathi Krishna S.

The Question of Travel: Diverse Visions" at the International Conference on 'Humanities through Literature, Film and Media' at the School of Social Sciences and Languages, Vellore Institute of Technology, Chennai, India on 18th August 2022.

Dr. Bhavesh Garg

Lecture on 'Time series analysis' in Data Analysis Workshop at Punjab Engineering College, Chandigarh, on December 3, 2022.

DLECTURES BY VISITING EXPERTS

Sr.No.	Name of speaker(s)/ chief guest(s)	Title/ abstract of Workshop/conference/seminar etc	Date
1.	Dr. Smita Sirker (Centre for Philosophy, School of Social Sciences, JNU)	"How Do We Think about Moral Ascriptions? Looking through the Lens of Strawson's Reactive Attitude Theory"	April 11, 2022
2.	Dr. Abhinav Kumar Mishra (Associate Professor, Banaras Hindu University Varanasi, U.P.)	"Forensic Linguistics: An Emergent Discipline in Indian Context"	April 26, 2022
3.	Dr. Surya Bhushan (Associate Professor, Development Management Institute (DMI), Patna)	"The Rich and the Poor: Understanding the Puzzle"	May 10, 2022
4	Prof. Koji Fujita (Kyoto University, Japan)	"Structure Dependence and Language Evolution"	August 29,2022

5	Prof. Bijoy Boruah (Visiting Professor at Indian Institute of Technology Jammu)	"A Deconstructive Unravelling of the Ethics of Hospitality in Milton's Paradise Lost"	August 30, 2022
6	Prof. K Ramasubramanian (IIT Bombay); Institute Chair Professor at the Cell for Indian Science and Technology in Sanskrit (CISTS)	'Indian Knowledge System (IKS)' which is claimed to be the crux of the New Education Policy NEP2020.	September 26, 2022
7	Dr. Matthew Sims (Alexander von Humboldt Postdoctoral fellow at Ruhr University Bochum)	"Cognition in Bloom – the Method of Dynamic Holism and the World of Plants"	September 27,2022
8	Dr. Richa Chopra, Core Faculty' with CoEIKS, IIT KGP	Universal Ideas from Patañjali's Yoga Sūtras on Mind and Mental Health: Philosophy and Practice	October 12,2022
9	Prof. K. Ramachandran ((Member, Drafting Committee – National Education Policy, Advisor and Professor, National Institute of Educational Planning and Administration, New Delhi)	Workshop entitled "National Education Policy 2020 and Higher Education: Role of Humanities and Social Sciences" NEP 2020 and Higher Education: Moving Towards a Holistic and Multidisciplinary Education?	October 15, 2022
10	Prof. Saikat Majumdar (Consultant for the Liberal Arts with the Kasturirangan Committee, Head of the Department, Professor of English and Creative Writing at Ashoka University)	The Contradisciplinary: A Conversation with Saikat Majumdar	October 15, 2022
11	Prof. Chhanda Chakraborti (Professor of Philosophy, Visiting Professor, School of Liberal Arts, IIT Jodhpur)	NEP 2020: The Outlook for Humanities and Social Sciences	October 15, 2022
12	Prof. Dr. Edamana Prasad (Professor of Chemistry, Former Head of Teaching Learning Centre, IIT Madras)	Best Practices in Assessment	October 15, 2022
13	Prof. Joy Sen (Chairperson, CoE IKS, IIT KGP)	Ancient knowledge and sustainable development goals	October 17,2022
14	Prof. Rukmini Bhaya Nair Indian Institute of Technology Delhi	"A Narrative Toolkit for Inquiry into the Human Sciences in the 21st Century"	December 8, 2022



Sr. No.	Name of the faculty member	Country	Detail of visit with date
1.	Dr. Parwinder	Brussels, Belgium	International Convention of Psychological Science-2023, Brussels, Belgium 9-11 March, 2023)
2	Dr. Samaresh Bardhan	Sweden	MidSweden University,Sweden
3	Dr. Samaresh Bardhan	Poland	Krakow University of Economics, EEFS conference Poland
4	Dr. Bhavesh Garg	Germany	7th Lindau Laureate Meeting on Economic Sciences in Lindau, Germany, from August 23-27, 2022.
5	Dr. Bhavesh Garg	Jakarta	ERIA-Monash Conference in Jakarta, Indonesia, from March 22-23, 2023.
6	Dr. Somdev Kar	Melbourne, Australia	Partial Reduplication in Maithili. In Annual Conference of Australian Linguistic Society (ALS 2022), University of Melbourne, Australia November 30 – December 2, 2022.
7	Dr. Somdev Kar	Dhaka, Bangladesh	Stress in reduplication: An Optimality Theoretic analysis. In Fourth Industrial Revolution, Technology and Mother Tongue conference, at International Mother Languages Institute (IMLI), Dhaka, Bangladesh February 22, 2023.



VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Ms. Rasleen Kour	Copenhagen	Philosophy of Human-Technology Conference, Copenhagen (5-7 July, 2022)
2	Mr. Karan Rai	Bali, Indonesia	16th BMEB online conference Bali, Indonesia, August 2022
3	Mr. Satvik Gupta	Dortmund, Germany	Fantastic Geographies: 13th Annual Conference of the Association for Research in the Fantastic (22-24 Sept, 2022), TU Dortmund, Germany)
4	Ms. Rasleen Kour	Netherlands	Ethics of Socially Disruptive Technology, Netherlands (6 -7 October, 2022
5	Mr. Suresh Jha	Doha, Qatar	4th World Association for Sport Management (5-8 March 2023), Doha, Qatar

6	Mr. Navneet Mishra	Brussels, Belgium)	International Convention of Psychological Science-2023, Brussels, Belgium 9-11 March, 2023),
7	Ms. Ankita Mishra	Brussels, Belgium)	International Convention of Psychological Science-2023, Brussels, Belgium 9-11 March, 2023),



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

S. No	Funding Agency	Name of Faculty Member	Title of Project	Total Sanctioned Amount	Project Status
1	ICSSR, New Delhi	Dr. Samaresh Bardhan	Growth and Convergence in Indian States: Implications for Credit Spillovers and Social Banking" (Under the scheme of Impactful Research on Social Sciences (IMPRESS)	Rs. 8,40000	Completed
2	Swedish Research Council, Sweden	Dr. Samaresh Bardhan (Indian PI)	Stubble Burning: Health impacts (Quality of Life), cost and social perception - an explorative study for prevention" under the scheme of 'Network Grant' of the Swedish Research Council (SRC)	746 000 SEK (= 63,00, 000 INR, approximate ly)	Ongoing
3	ICSSR, New Delhi	Dr. Smruti Ranjan Behera (PI)	Foreign Direct Investment and Innovative Performance of Local Firms: Evidence across Indian Manufacturing Industries	Rs. 7,50,000/-	Completed
4	ICSSR, New Delhi	Dr. Smruti Ranjan Behera (PI)	Does location spur innovation: Evidence across Indian manufacturing industries?	Rs. 10, 00,000/-	Ongoing
5.	ICMR, New Delhi	Dr. Parwinder Singh (PI)	Health-Risk Behaviours among adolescents: Role of difficulties in emotion regulation, parenting style and personality characteristics	Rs. 14,58,300/-)	Ongoing

6.	MISTI (MIT Internation al Science and Technolog y Initiative) Global Seed Funds	Dr. Parwinder Singh (Indian PI)	A Checklist-based Advisory to Minimize the Cost and Duration of Worse- before-better in Transitioning from Chemical to Organic Smallholder Farming	\$14,475	Ongoing
7.	Swedish Research Council, Sweden	Dr. Parwinder Singh (Indian co- investigator)	Stubble Burning: Health impacts (Quality of Life), cost and social perception - an explorative study for prevention" under the scheme of 'Network Grant' of the Swedish Research Council (SRC)	746 000 SEK (= 63,00, 000 INR, approximate ly)	Ongoing
8	Funding Agency is ICSSR, New Delhi (SPARC) ISIRD Ropar	Dr. Dibyakusum Ray (PI)	Offering Provocations, Surfacing Evidence": The Archiving of Cine-Politics] Funded by the Indian National Emergency through Digital Humanities 2.0. SPARC Project. 15.03.2019 – xx.xx.xxxx 2. Bengali Urban Ballad and Shifting Ideologies: an Ethnomusicological Study, . Funded by ISIRD Ropar Grant. 31.05.2019- xx.xx.xxxx	1. [Rs. 55,00,465.0 0 2. 1960- 2000. [Rs. 7,80,000]	Ongoing
9	INSA	Dr. Aparna Nanda (PI)	"History of Kalaripayattu and its Links with Indigenous Medical Practices"	Rs. 360000	Ongoing



DEPARTMENT OF MATHEMATICS

Programs offered	:	B.Tech., M.Sc. and PhD		
No. of Students	:	B.Tech. : 119		
		M. Sc. : 45		
		PhD : 49		
Head of the Department	:	Prof. Jitendra Kumar		
No. of faculty members	:	: 16		
No. of staff members	:	02		
		Technical Staff	:	01
		Administrative Staff	:	01
Thrust Area	:	Analysis and Algebra		
		Probability and Statist	ics	
		Modeling and Simulat	ion	
		Theoretical Computer	Scienc	ce





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. G Sankara Raju Kosuru

Assistant Professor PhD: Indian Institute of Technology, Madras Functional analysis, Operator theory, Matrix Analysis













Prof. Jitendra Kumar Professor

PhD: Otto-von-Guericke University Magdeburg, Germany Research Interest: Modelling and simulation of population balances in particle technology, Mathematical analysis of solutions of population balances, Inverse problems in population balances, Discrete element method simulations

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*

Prof. 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



1. Computational Lab Facilities: No. of Labs

PG	:	0.5
Research	:	3.5

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	High End Computational System (Server)				

2. Library Facility: Total 197 reference and text books

The Department has a library with a total 197 reference and text books for students, PhD scholars and faculty members to acquire knowledge, information regarding Mathematics subject matters. The books are issued on Issue and Return basis.



S. No.	Name of the faculty Member	Details of awards and honors	
1.	Dr. S. C. Martha	Nominated as Member of the National Academy of Sciences, India (NASI) 2022.	
2.	Dr. Arvind Kumar Gupta	Nominated as Member of the National Academy of Science, India (NASI) 2022.	



AWARDS AND HONOURS 2022-23 (STUDENT)

S. No.	Name of the Scholar	Details of awards and honors
1.	Priya Verma	Awarded International Travel Support (ITS) by SERB to attend the 19th International Conference on Flow Dynamics (ICFD2022) held at Sendai, Miyagi, from 09-11 November 2022.
2.	Kusum	Awarded Springer Best Student Presentation Award in CALDAM 2023 (9th Annual International Conference on Algorithms and Discrete Applied Mathematics) held at DAIICT Gandhinagar, from February 09-11, 2023.
3.	Shankha Narayan Chattopadhyay	Awarded with Prime Minister's Research Fellowship (PMRF) under the lateral entry scheme, in cycle 10, on 22nd March, 2023.
4.	Deepali Goyal	Awarded Young Scientist Award in Indian Society of Theoretical and Applied Mechanics (ISTAM) conference held at IIT Mandi, from December 14-16, 2022.
5	Surya Narayan Maharana	Awarded International Travel Support (ITS) by SERB to attend the 75th APS-DFD meeting (ICFD2022) held at Indianapolis, USA, from 20-22 November 2022.
6	Surya Narayan Maharana	Awarded CSIR Travel grant to attend the 75th APS-DFD meeting held at Indianapolis, USA, from 20-22 November 2022.
7	Surya Narayan Maharana	Awarded International Travel Support (ITS) by SERB to attend the 22nd Computational Fluid Conference (CFC2023) to be held at Cannes, France from 25-28 April 2023.

INVITED LECTURES BY FACULTY

1. Name of the Faculty : Dr. Tapas Chatterjee

Lecture : Art of Research Institute : St. Ann's College for Women Date : January 9, 2023

2. Name of the Faculty : Dr. Tapas Chatterjee

Lecture : Mathematical Legacy of Srinivasa Ramanujan Institute : Visva-Bharati University Date : December 22, 2022

3. Name of the Faculty : Dr. Tapas Chatterjee

Lecture : Mathematical Training Program on Projects Institute : Guru Nanak College, Sri Muktsar Sahib Date : October 1, 2022

4. Name of the Faculty : Dr. Tapas Chatterjee

Lecture : Capacity Building Workshop Institute : Sri Guru Gobind Singh College, Chandigarh Date : April 21, 2022

5. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Applications of Calculus in Science and Engineering Institute : Vellore Institute of Technology Date : May 18, 2022

6. Name of the Faculty : Prof. Jitendra Kumar

Lecture : On Numerical Modelling of Particulate Systems Institute : National Institute of Technology (NIT) Hamirpur Date : June 02, 2022

7. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Recent Advances in Modeling and Simulation Tools of Particulate Systems Institute : GLA University, Mathura Date : June 24, 2022

8. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Challenges and Recent Developments in Modelling and Simulations of Particulate Processes Institute : Otto-von-Guericke University Magdeburg, Germany Date : June 29, 2022

9. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Advances in Modelling and Simulations of Particulate Processes Institute : Manipal University Jaipur Date : July 11, 2022

10. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Mathematics Beyond Numbers: Applications in Science and Engineering Institute : Chandigarh University, Punjab Date : December 22, 2022

11. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Mathematics Without Boundaries: Applications in Science and Engineering Institute : St. Ann's College for Women, Mehdipatnam, Hyderabad Date : January 01, 2023

12. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Numerical Modeling of Particulate Systems: Continuum versus Discrete Institute : PSG College of Technology, Coimbatore Date : January 6, 2023

13. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Mathematical Modeling: Challenges and Opportunities Institute : National Institute of Technology Jalandhar Date : February 10, 2023

14. Name of the Faculty : Prof. Jitendra Kumar

Lecture : Errors in Scientific Computing Institute : RGIPT Jais Date : February 15, 2023

15. Name of the Faculty : Dr. G Sankara Raju Kosuru

Lecture : OPPORTUNITIES ON HIGHER EDUCATION Institute : Andhra University, India Date : December 23, 2022

16. Name of the Faculty : Dr. G Sankara Raju Kosuru

Lecture : MATRIX INEQUALITIES Institute : Andhra University, India Date : December 22, 2022

17. Name of the Faculty : Dr. G Sankara Raju Kosuru

Lecture : Decreasing Rearrangement on Finite and Infinite Dimensional Spaces Institute : IIT Tirupati, India Date : January 13, 2023

18. Name of the Faculty : Dr. G Sankara Raju Kosuru

Lecture : Decreasing Rearrangements and Herz Type Spaces Institute : University of Seville, Spain Date : September 29, 2022

19. Name of the Faculty : Dr. Balesh Kumar

Lecture : Number Theory Institute : IIT Ropar Date : May 23- June 3, 2022

20. Name of the Faculty : Dr. Bidhan Chandra Sardar

Lecture : Differential Equations and Their Applications Institute : Dayananda Sagar University Bangalore, India Date : July 14, 2022

21. Name of the Faculty : Dr. Bidhan Chandra Sardar

Lecture : Homogenization of Optimal Control Governed by Stokes System in a pillar-type domain Institute : IISc Bangalore, India Date : July 13, 2022

22. Name of the Faculty : Dr. Bidhan Chandra Sardar

Lecture : Homogenization and Optimal Control of PDEs Institute : Central University of Punjab, India Date : October 17,2022 23. Name of the Faculty : Dr. Santanu Sarkar Lecture : On RKHS of vector valued entire functions. Institute : Vellore Institute of Technology (VIT) Date : October 14, 2022

24. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Series of lectures in Complex Analysis Institute : University of Jammu Date : February 20 to March 04, 2023

25. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Series of lectures in Complex Analysis Institute : University of Jammu Date : January 16 - 20, 2023

26. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Applications of Linear Algebra in real world problems Institute : St. Ann's College for Women, Mehdipatnam, Hyderabad, Telangana Date : January 5, 2023

27. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Applications of Complex Analysis to Real world problems Institute : Ayya Nadar Janaki Ammal College, Sivakasi Date : December 30, 2022

28. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Series of lectures in Complex Analysis Institute : Malaviya National Institute of Technology, Jaipur Date : December 12– 17, 2022

29. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Growth of harmonic mappings and Baernstein type inequalities for the geometric subclasses of S0H Institute : SSN College of Engineering, Chennai Date : December 8, 2022

30. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Applications of Analytic functions in Fluid Flow Problems Institute : Vellore Institute of Technology, Vellore Date : November 10, 2022

31. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Hardy Spaces Techniques in Geometric Function Theory Institute : Ayya Nadar Janaki Ammal College, Sivakasi Date : October 10, 2022

32. Name of the Faculty : Dr. Sairam Kaliraj

Lecture : Growth of Harmonic Functions and its Applications Department : Department of Mathematics Institute : University of Warmia and Mazury in Olsztyn, Poland Date : September 24, 2022

33. Name of the Faculty : Dr. S. C. Martha

Lecture : Mathematical Techniques for Solving Some Linear and Nonlinear Problems of Water Wave Mechanics Institute : In the 88th Annual Conference of The Indian Mathematical Society-An International Meet, at BIT Mesra Date : December 27-40, 2022

34. Name of the Faculty : Dr. S. C. Martha

Lecture : Applications of Differential Equations and Numerical Methods Institute : St. Ann's College for Women, Mehdipatnam, Hyderabad Date : January 05-14, 2023

35. Name of the Faculty : Prof. Manoranjan Mishra

Lecture : Modeling of Hydrodynamic Instability in a layered channel flow with chemical reaction Institute : International conference on Mathematical Analysis and Applications & 50th Annual Conference of Odissa

Mathematical Society, at Institute of Mathematics and Applications,

Bhubaneswar

Date : January 21-22, 2023

36. Name of the Faculty : Prof. Manoranjan Mishra

Lecture : Chemical Reaction-Induced Hydrodynamic Instabilities in a channel flow

Institute : 67th Congress of the Indian Society of Theoretical and Applied Mechanics (ISTAM-2022) - an International Conference", IIT Mandi Date : 14 - 16 December, 2022

37. Name of the Faculty : Prof. Manoranjan Mishra

Lecture : Reaction Induced Kelvin-Helmholtz Instability Institute : S. N. Bose Memorial Talk at International Conference on Modern Trends in Mathematical Modelling, Analysis and Algebra (Annual Conference of Calcutta Mathematical Society) Date : 8 - 10 December, 2022

38. Name of the Faculty : Prof. Manoranjan Mishra

Lecture : Hydrodynamic instabilities between reactive miscible fluids Institute : International Conference on Modeling, Analysis and Simulations of Multiscale Transport Phenomena", IIT Kharagpur

Date : 25 - 27 August, 2022

LECTURES BY VISITING EXPERTS

Sr. No.	Name of the experts with affiliation	Торіс	Date
1.	Prof. Jugal K Verma, Department of Mathematics, IIT Bombay	Invited talk on the title "An invitation to Erhart's Theory of lattice Points in polytopes"	April 26, 2022 (Online)
2.	Prof. Ranga Narayanan, Department of Chemical Engineering, University of Florida, Gainesville	Invited talk on the title "Instability at the Interface- Patterns by Competition and Patterns by Resonance"	July 22, 2022
3.	Prof. Vijay Mago, Department of Computer Science, Lakehead University, Thunder Bay, Canada	Invited talk on the title "Applications of AI and NLP to Develop Practical Solutions"	August 24, 2022
4.	Dr. Maynak P. Agihotri, CEO of "AGNITYA Quantitative solutions and Asset management"	Invited talk on the title "Job Opportunities in Financial Domain"	October 27, 2022
5.	Prof. Jiten C. Kalita,	Invited talk on the title "Flow past a mounted wedge: Replicating Pullin and Perry's experimental visualization and beyond"	November 04, 2022
6.	Dr. Anisur Rahaman Molla, Indian Statistical Institute (ISI), Kolkata	Invited talk on the title "Local Mixing Time: Distributed Computation and Applications"	November 22, 2022
7.	Prof. Somesh Kumar, IIT Kharagpur	Invited talk on the title "History and Current Trends in Statistics and Data Science"	December 08, 2022
8.	Prof. Neeraj Misra, IIT Kanpur	Invited talk on the title "Sample Spacings Based Statistical Inference" in the Cynosure 2022 event	December 10, 2022
9.	Prof. Amit Kulshrestha, IISER Mohali	Invited talk on the title "Pure, Applicable and Applied: Mathematics Without Borders" in the Cynosure 2022 event	December 10, 2022
10.	Prof. C.C. Tsai, NTOU, Taiwan	Invited talk on the title "The eigenfunction matching method for water wave scattering by variable structures and bottoms"	December 17, 2022
11.	Prof. Michel Waldschmidt, Sorbonne Université, Paris, France	Invited talk on the title "On Euler's Constant"	March 02, 2023
12.	Dr. Sanjeev Singh, IIT Indore	Invited talk on the title "Bessel and related functions with applications"	March 02, 2023

13.	Prof. Nikolai Leonenko, Cardiff University, UK	Invited talk on the title "Multiscaling and intermittency in limit theorems for superpositions of Ornstein-Uhlenbeck type processes"	March 03, 2023
14.	Dr. Abhik Ganguli, IISER Mohali	Invited talk on the title "Talk on Reciprocity Laws"	March 11, 2023
15.	Prof. Madhu Raka from Panjab University, Chandigarh	Invited talk on the title "Role of Mathematics in transmission of data securely and accurately"	March 15, 2023
16.	Dr. Sparsh Sharma, Post Doc at University of Cambridge, UK	Invited talk on the title "Map-based Advection and Monte-Carlo Simulations for Turbulence Analysis in Engineering"	March 29, 2023
17.	Prof. Bhupen Deka, Dept of Mathematics, IIT Guwahati	Invited talk on the title "Weak Galerkin Finite Element Methods for Second Order Elliptic Problems"	April 11, 2023

VISITS ABROAD BY THE FACULTY

Sr. No.	Name of the faculty member	Country	Detail of visit with date
1.	Prof. Jitendra Kumar	Germany	June 18-July 03, 2022
2.	Dr. G Sankara Raju Kosuru	Spain	Research Visit during September 25-30, 2022
3.	Dr. G Sankara Raju Kosuru	Germany	Research Visit during October 06- 08, 2022

VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1.	Ms. Priya Verma	Japan	Attended a conference,' 19th International Conference on Flow Dynamics (ICFD2022) held at Sendai, Miyagi, from 09-11 November 2022.
2	Ms. Gopika Sharma	France	Presented paper in a conference, "The 11th International colloquium on Graph Theory and Combinatorics" (ICGT2022) held at Montpellier, France, from 04-08 July 2022.
3	Ms. Niharika Bhootna	Poland	Attended and delivered a talk at the "16th Workshop on Non Stationary Systems and their Applications (Gródek 2023 conference)", held at Gródek (Poland) from February, 05-08, 2023
4	Mr. Suman Das	Poland	Attended and delivered a talk at the VIII International Conference of Mathematics and Computer Science "Congressio-Mathematica" held during 19-22 September, 2022 in Olsztyn, Poland.
5	Ms. Smita Deb	UK	Attended and delivered an oral presentation in the BES Annual Meeting held during 18 - 21 December, 2022 (Online).
6	Mr. Nikhil Bhatia	1) Poland 2) US	Participated in poster presentation at the 7th Warsaw School of Statistical Physics, held in Sandomierz, Poland from 26 June to 2 July 2022. Attended the American Physical Society's March Meeting (Virtually) held on March 20 - 22, 2023 and participated in poster presentation.

7	Ms. Ayantika Laha	Vietnam	Attended IACR-VIASM summer school on cryptography at VIASM, Hanoi from August 24-30, 2022.
8	Mr. Surya Narayan Maharana	Greece	Attended 14th European Fluid Mechanics Conference at Athens Greece, from 14-16th September, 2022



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Ongoing Research Projects:

Sr. No.	Name of the faculty member	Title of the Project	Funding Agency	Sanctioned amount	Duration Period
1.	Dr. Tapas Chatterjee	A study on generalizations of Euler's constant, gamma function and their p-adic counterparts	CRG-SERB	20,09,766	2020-2023
2.	Dr. Tapas Chatterjee	Study of non- vanishing and transcendence results of some L-functions	NBHM-DAE	15,00,600	2019-2023
3.	Prof. Jitendra Kumar (with Jayanta Chakraborty, IIT Kharagpur & Anurag Tripathi, IIT Kanpur)	Coarse-grained CFD- DEM-PBM simulations of industrial granulating beds	CRG-SERB	76,00,000	2023-2026
4.	Prof. Jitendra Kumar	Physics Embedded Approximations of Aggregation and Breakage Kernels for Population Balances	Federal Ministry of Education and Research, Germany	44,00,000	2018-2023
5	Prof. Jitendra Kumar	Zonal Refinement Strategy to Expedite DEM Simulations of Fine powder flow Supported by Eli Lilly and Company, Indianapolis	Indiana & AbbVie Inc, USA	25,00,000	2020-2023
6	Prof. Arti Pandey	Algorithmic Study of Secure and Roman Domination in Graphs and their Variants	CRG-SERB	8,09,433	2023-2026
7	Prof. Balesh Kumar	On the behaviour of Fourier coefficients of automorphic forms and Diophantine approximation.	SRG-SERB	12,68,872	2022-2024
8	Prof. Manoranjan Mishra	Computational study of miscible chemo- hydrodynamic instability in a channel and porous medium	CRG-SERB	16,16,032	2021-2024

9	Prof. Manoranjan Mishra	Development of efficient computational techniques for convection-diffusion- reaction type problems in econophysics	SPARC	54,78,065	2019-2023
10	Prof. Manoranjan Mishra (co-PI)	Linear and non-linear bulk rheology of cell monolayer.	CRG-SERB	31,53,620	2021-2024
11	Prof. Kaushik Mondal	Efficient Distributed Computation of Independent and Dominating Sets in Geometric Graphs	CRG-SERB	21,49,312	2021-2024
12	Dr. M. Prabhakar	Polynomial and Numerical invariants of spatial-theta graphs	MATRICS-SERB	6,60,000	2022-2025
13	Dr. M. Prabhakar	Topological invariants of Knots, links, spatial graphs, virtual spatial graphs and their applications	NBHM-DAE	3,53,000	2023-2026
14	Dr. A. K. Gupta	Investigation of Mechanisms of Biological Transport Phenomena on Cellular Network Utilizing Analytical and Computational Tools	Core Research Grant of DST- SERB	22,41,000	2022-2023
15	Dr. A. K. Gupta	Understanding disordered traffic dynamics on Indian roads: Modeling & simulation	Mathematical Research Impact Centric Support (MATRICS) of SERB	6,60,000	2022-2023
16	Dr. Arun Kumar	Potential Theory, Ergodicity and Infinite Divisibility for Subordinated Stochastic processes	MATRICS SERB	6,60,000	2020-2023
17	Dr. Sairam Kaliraj	Harmonic Mappings		24,65,000	2023 - 2026
18	Dr. S. C. Martha	Analysis of nonlinear interactions of water waves through Homotopy Analysis Method	MATRICS- SERB	6,60,000	2022-2025
19	Dr. Manju Khan	Unit groups of group algebras and its applications in coding theory	MATRICS- SERB	6,60,000	2022-2025



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. 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. 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. 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. Arun Kumar (International Team Member)	Anomalous Diffusion Processes and Their Applications to Real Data Modelling	National Science Center Poland	PLN 4,85,000 (INR 77 Lakh)	2017	2020
Dr. Manoranjan Mishra	Modeling and simulation of hydrodynamic instability with chemical reaction	SERB-MTR	Rs. 7,00,000	2018	2021
Dr. Bidhan Chandra Sardar	SRG Research Grant	SERB-SRG	Rs. 2,31,000	2019	2021
Dr. Tapas Chatterjee	Bounded Gaps between primes over number fields	MATRICS- SERB	Rs. 6,60,000	2019	2022
Dr. Jitendra Kumar	Uncertainty Quantification and Propagation of Population Models	MATRICS- SERB	Rs. 6,60,000	2020	2023
Dr. Jitendra Kumar	From Discrete Particle to Population Balance Modelling: The Micro-Macro Transitions	SERB	Rs. 22,83,160	2018	2022
Dr. Santanu Sarkar	Some Problems in multivariable operator theory	DST-INSPIRE	Rs. 35,00,000	2016	2022

Dr. Santanu Sarkar	Nearly Invariant Subspaces and Unconditional Basis in de Branges Spaces of vector valued functions and an Invariant of Finite Dimensional Operator Spaces	SRG-SERB	Rs. 3,74,000	2020	2022
Dr. Arun Kumar	Time-Series Analysis of Carry, Value and Momentum Based Investing"	ISIRD	Rs. 10,00,000	2018	2022
Sairam Kaliraj	Geometric Function Theory and its Applications to Operator valued functions	ISIRD	Rs. 19,97,000	2019	2022

ORGANIZED EVENTS:

- 1. Dr. G Sankara Raju Kosuru, organized **Mathematics Training and Talent Search** (MTTS) 2022 during May 23-June 18, 2022 (funded by MTTS trust, NBHM).
- 2. Prof. Manoranjan Mishra, organized **GIAN program**: Title: Interfacial Instability with Industrial Applications (Ref. No: 191010G01) July 11 24, 2022. Foreign Expert: Prof. R. Narayanan, University of Florida, Gainesville, USA.
- The Department has organized a one day symposium on Mathematics: "Cynosure 2022 - 6th Edition of Advances in Mathematics" on 10th December 2022 at IIT Ropar.
- 4. Dr. Tapas Chatterjee, organized a **Workshop on the occasion of National Mathematics Day** on December 22, 2022 as Scientific Social Responsibility jointly with Visva-Bharati University. This workshop was funded by the SSR grant of CRG-SERB project of Tapas Chatterjee.
- 5. The Department of Mathematics, IIT Ropar and Hamburg University of Technology, Germany jointly organized an International Symposium on Interdisciplinary and Transdisciplinary Modelling Tools for Particulate Systems at IIT Ropar during February 22-24, 2023. The event was partially funded by SERB, Government of India and Alexander von Humboldt foundation, Germany.
- 6. Dr. Arun Kumar organized a **GIAN course** on "Risky Asset Models with Dependence" with Prof. Nikolai Leonenko (Cardiff University) U.K. held during Feb 27 Mar 03, 2023.
- 7. The Department has organized **National Mathematics Day** at IIT Ropar on March 11, 2023, partially funded by PSCST, Punjab.
- 8. The Department has organized a lecture series as part of the **Indian Women and Mathematics** program on March 15, 2023 at IIT Ropar.

9. Dr. M. Prabhakar is one of the organizers of the international conference **"Knots, Algebra, and Geometry"**, held online from March 17-19, 2023.

Funding During the Period:

- 1. Dr. G Sankara Raju Kosuru received a grant of Rs. 11, 00,000 to organize MTTS-2022 from NBHM, India.
- 2. Dr. G Sankara Raju Kosuru received local Hospitality funding (funding for local stay and dining facilities) during his stay at the University of Seville, Spain

Research collaborations During the period:

Dr. G Sankara Raju Kosuru:

- 1. Prof. Pawe I Kolwicz, Poznan University of Technology, Institute of Mathematics, Piotrowo 3A, 60-965 Poznan, Poland
- 2. Prof. Rafeal S. Espinola, Department of Mathematics, University of Seville, Spain
- 3. Prof. M. Gabeleh, Department of Mathematics, Ayatollah Boroujerdi University, Boroujerd, Iran



DEPARTMENT OF MECHANICAL ENGINEERING

Programs offered	:	 B. Tech., M. Tech in following specializations (a). Computational Mechanics (b). Mechanics & Design (c). Manufacturing Engineering (d). Thermal & Fluids Engineerin PhD in Mechanical Engineering in following broad specializations: (a). Mechanics & Design (b). Manufacturing Engineering
No. of Students	:	(c). Thermal & Fluids Engineering BTech : 310 MTech : 90 PhD : 144
Head of the Department	:	Dr. Prabhat K Agnihotri
No. of faculty members		25
No. of staff members	:	9
Thrust Areas	:	Intelligent Mechanical Systems Additive Manufacturing BioMechanical Engineering Energy Efficiency and Sustainability Micro/Nano Engineered Systems
No. of Publications	:	139





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 nonconventional micromachining, 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) Hydrogen storage and Hydrogen based zeroemission solutions, Experiment and simulationassisted development of hydrogen-embrittlement resistant metals, Experiment and simulation-assisted development of polymers for energy and biomedical applications, Micromanufacturing of biomedical devices

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 Bioimplants, 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. RAJENDRA KUMAR MUNIAN

Ph.D., Aerospace Engineering, Indian Institute of Science, Bangalore, India, 2018

Vibration Control, Guided wave based Structural Health Monitoring (SHM), Material failure due to impact load, Metamaterials.

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.

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



- 1. Department has organized the 20th Indian Society of Mechanical Engineering (ISME20) conference from May 19-21, 2022.
- 2. METRIX 4.0, 4 th edition of "Mechanical Engineering Time for Research Ideas EXchange" organized by the Department of Mechanical Engineering IIT Ropar was successfully held from 12 to 13 Dec 2022 at Satish Dhawan Block, IIT Ropar. The two-day event consisted of:
 - (a) Lab Poster Presentation
 - (b) Research Talk by PhD Scholars
 - (c) Keynote Speech
 - (d) Panel Discussion



S. No.	Name	Affiliated Institute/Organization	Purpose/Topic of Talk
1.	Dr. Manish Bharadwaj	Associate Director, HEMRL, DRDO)	Chief Guest, METRIX 4.0
2.	Dr. Anshuman Awasthi	Vice President, Mercedes Benz R&D India	Innovation Opportunities in Electric Mobility
3.	Mr. Jiwan Kumar Pandit	Associate Director, BUS systems, ISRO	Keynote talk
4.	Mr. Suchit Jain	Vice President of Strategy & Business Development, Dassault Systemes SOLIDWORKS	Keynote talk
5.	Dr. Sivom Manchiraju	Principal R& D Engineer, Ansys	Democratizing Ansys Mechanical: An Adaptive solver for complex nonlinear problems
6.	Dr. Nagahanumaia h	Director, CMTI	Keynote talk
7.	Dr. Abhishek K. Singh	Assistant Professor, Department of Thermal and Fluid Engineering, University of Twente, Netherlands	Expert talk
8.	Dr. Dipan Bose	Senior Transport Specialist, South Asia, World Bank Group USA	Improving Vehicle Safety Standards in Developing Countries
9.	Prof. Pradeep Kumar	Associate Professor, School of Mechanical & Materials Engineering, Indian Institute of Technology Mandi	Modeling of Gaseous Radiation for Applications of Combustion, Plume Radiation
10.	Professor K P Rajurkar	Founder and director of the Center for NontraditionalManufacturing Research, NEBRASKA CENTER FOR MATERIALS & NANOSCIENCE, UNIVERSITY of NEBRASKA-LINCOLN, U.S	Medical Device Manufacturing
11.	Dr. Chandan Bose	University of Edinburgh	Aerodynamics and Fluid- Structure Interaction of Small Flyers
12.	Dr. Anand TNC	IIT Palakkad	Studies on Droplet Deformation during Secondary Atomization
13.	Dr. Ankur Jain	University of Texas at Arlington, USA	Heat Transfer in Li-ion Batteries – Interfaces, Imaginary Eigenvalues and Thermal Runaway
14	Prof. K P Rajurkar	UNIVERSITY of NEBRASKA– LINCOLN	Medical Device Manufacturing
15.	Dr. Pradeep Kumar	IIT Mandi	Modeling of Gaseous Radiation for Applications of Combustion, Plume Radiation
16.	Dr. Dipan Bose	World Bank Group, USA	Improving Vehicle Safety Standards in Developing Countries

17	Dr. Abhishek K.	University of Twente,	Solar Thermochemical Processes for
17.	Singh	Netherlands	Concentrated Solar Thermal Applications

ABROAD VISITS OF FACULTY

S.No.	Name	Purpose	Place of visit	Duration
1	Dr. Dhiraj K Mahajan	Advances in Structural Alloys and their Manufacturing (ASATM)	Singapore	9-13/01/2023

VISITS ABROAD BY THE STUDENTS

S/N	Name	Purpose	Place of visit	Duration
1	Mr. Jay Airao	6th CIRP Conference on surface integrity	Lyon, France	8-10/06/2022
2	Ms. Tushita Rohilla	1st Regional Meeting of the International Society of Electrochemistry	Prague, Czech Republic	14-18/08/2022
3	Mr. Nishant Shakya	11th ESMC 2022	Ireland	4-8/07/2022
4	Ms. Neha Vishnoi	ASME Turbo expo 2022	The Netherlands	13-17/06/2022
5	Mr. Mainak Pal	55th CIRP Conference on Manufacturing Systems	Switzerland	
6	Mr. Gaurav Singh	7th Thermal & Fluids Engineering Conference	USA (Online)	16-18 May 2022
7	Mr. Sunirmit Verma	7th Thermal & Fluids Engineering Conference	USA (Online)	16-18 May 2022

MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Sr. No.	Funding Agency	Name of the PI	Title of Project	Amount (In Crore Rs.)
1	Industrial Consultancy	Dr. Anupam Agrawal	Study of forming process in Servo Press	0.01
2	SERB-CRG	Dr. Anupam Agrawal (PI) and Dr. Chandrakant Kumar Nirala	A new approach for micro- incremental sheet forming of ultra-thin sheets and formulation of size-effect based fracture prediction model	0.41
3	SERB-CRG	Dr. Chandrakant Kumar Nirala	Design and development of ultrasonic vibration-assisted micro-cutting technology under sustainable environments for additively manufactured alloys	0.48
4	Industrial Consultancy	Dr. Chandrakant Kumar Nirala	Vibration Assisted Micro EDM to Help Increase the MRR & Surface Finish	0.01
5	SERB- SUPRA Scheme	Dr. Devranjan Samanta (PI) with IIT Madras and IIT Bombay	Wind generation of ocean waves:from primary instabilities to cyclogenesis	0.43

6	Industrial Consultancy	Dr. Dhiraj K Mahajan	Designing of gas turbines for energy storage	0.03
7	Industrial Consultancy	Dr. Dhiraj K. Mahajan	Design Guidelines for Surface Disinfection system of Negative Pressure Ambulance	0.14
8	DST-TDT/AM	Prof. Harpreet Singh	Centre of Excellence CoE- Degradation resistant thermal spray coatings engineered for indigenous industrial application	3.8
9	SERB-CRG	Dr. Manish Agrawal (Co- Pl)	Machine learning based model for optimization of PCM-metal foam composite energy storage system	0.18
10	SERB-SCP	Prof. Navin Kumar	Externally expandable electromechanical invivo implant for the treatment of early onset spinal deformity	0.34
11	Industrial Consultancy	Prof. Navin Kumar	A comparative Study of Osteoporotic and Normal Vertebrae among Indian Population	0.04
12	Industrial Consultancy	Prof. Navin Kumar	Analyze the vibration spectrum with respect to the datum vibration spectrum to indicated the early warning of the upcoming defect	0.01
13	Industrial Consultancy	Dr. Ramjee Repaka	Technical and Structural Audit of Bottling Plant II	0.01
14	Industrial Consultancy	Dr. Ramjee Repaka	Technical and Structural Audit of Bottling Plant IV	0.01
15	Industrial Consultancy	Dr. Ramjee Repaka	Technical and Structural Audit of Bottling Plant VI	0.01
16	Industrial Consultancy	Dr. Ramjee Repaka	Technical and Structural Audit of Bottling Plant VII	0.01
17	CPRI	Dr. Ranjan Das	Development of a Renewable Energy-based and Fully Grid Independent Radiant Air-Conditioning System	0.27
18	SERB-TARE	Dr. Ranjan Das (Mentor)	Development of Intelligent Algorithm Based wind Turbine Rotors	0.1
19	Industrial Consultancy	Dr. Sachin Kumar	FEA of Welded Structure	0.01
20	Industrial Consultancy	Dr. Dhiraj K. Mahajan	Development of Gas Driven Mini-Turbine for Automotive Applications	0.11



DEPARTMENT OF METALLURGICAL AND MATERIAL ENGINEERING

Programs offered	:	B.Tech. and PhD		
No. of Students	:	B.Tech. : 90		
		PhD : 36		
Head of the Department	:	Dr. Pratik Kumar Ray		
No. of faculty members	:	08		
No. of staff members	:	03		
		Technical Staff : 01		
		Administrative Staff : 02		
Thrust Area	:	Advanced Steels, Biomaterials, Energy Materials, High Temperature Materials, Nanomaterials		
No. of Publications	:	35		





Dr. Abhishek Tiwari

Assistant Professor PhD, Homi Bhaba National Institute, Bhaba Atomic Research Center, India Application of configurationally forces in fracture mechanics, crack driving force calculation in polymers, large scale plasticity, creep, creep-fatigue conditions, numerical modeling of materials' mechanical behavior using finite element analysis



Dr. Atharva Poundarik Assistant Professor PhD, Rennselaer Polytechnic Institute, USA Designing and developing biomaterial systems, processing technologies and implantable medical devices with clinical applications orthopedics, sports medicine and diabetic wound healing



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), Advanced Characterisation Techniques (Transmission Electron Microscopy, Electron Back Scattered Diffraction, Neutron Diffraction and 3D Atom Probe Tomography)





Dr. Neha Sardana

Assistant Professor PhD, IMPRS-MLU, Halle, Germany International Max Planck Research School for for nanosystems-Martin Luther University, Halle, Germany, Size-Property (electrical, mechanical and optical) relationship of Nanomaterials, Optical Materials (Plasmonic /meta-materials) for sensing applications

DR. PRATIK KUMAR RAY

Assistant Professor Iowa State University, USA Materials Informatics, Interfaces in materials, physical metallurgy and phase transformations with focus on: Disordered Solids (highentropy alloys, metallic glasses), High-Temperature Materials (Ni-based alloys, ultra-high temperature ceramics, oxidation), Nanomaterials (Magnetic nanocomposites, emergent phenomena), Materials Processing (Self-assembly, Solidification, Powder Metallurgy)

Dr. Prince K Singh

Assistant Professor PhD, IIT Kanpur Physical and Mathematical Modelling of steel making processes, recycling of solid as well as gaseous wastes from steel plant





DR. RAJIV KUMAR Assistant Professor IIT Bombay and Monash University, Australia Corrosion: High Temperature Oxidation; Alloys Development; Powder Metallurgy; High Entropy Alloys; Nano crystalline Materials; Hydrophobic Coatings: Structure-Property



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



No. of Labs	:	UG	:	12
		Research	:	08
Name of the lab			:	Corrosion and Advanced Materials Laboratory
Name of the Head of the Research lab			:	Rajiv Kumar

Name of the Head of the Research lab

Correlation

AWARDS AND HONOURS 2022-23 (FACULTY)

- Appointed as 'Distinguished Member' of the CII Corrosion Management Committee for the year 2023-24.
- Profile featured in Confederation of Indian Industry's (CII's) publication Women in STEM: Vanguards of India@75, July 2022.
- Dr. Neha Sardana has been Awarded the IEI Young Engineers Award under the Metallurgical & Materials Engineering Division, The Institution of Engineers (India), 2022.
- Profile featured in "We the scientist's", by Indian National Young Academy of Sciences, 2022.
- Reviewer appreciation certificate, Transactions of the Indian Institute of Metals.
- Dr. Ravi Mohan Prasad has been honored as a 'Distinguished Member' of the CII Corrosion Management Committee for the year 2023 - 24.
- Invited by Punjab Pollution Control Board (Regional Office, Fatehgarh Sahib) as an Expert Member for evaluation regarding application for "No increase in pollution load" of an Industry (in Mandi Gobindgarh) on 19-July-2022.



- Dr. Kushagra Goyal, First PhD student of MME, received the Best thesis Award at IIT Ropar Convocation Dec. 2022.
- Mr. Ayush Pratap, awarded Internship on Trustworthy AI at National Chung Cheng University, TEEP, Indo Taiwan joint research center on AI, September 2022-Jan 2023.
- Mr. Ayush Pratap, Awarded Protsaahan puraskaar for delivering Hindi poem, IIT Ropar 26th Jan, 2023.
- Mr. Ayush Pratap, Awarded 3rd Prize for self-written Hindi poem on matribhasha divas, IIT Ropar, 21st Feb 2023.
- Mr. Ayush Pratap, Won Silver in weightlifting in IYSC-2023, IIT Ropar, 2023.
- Mr. Gaurav Pal Singh, International visit for collaborative research in Martin-Luther-University Halle-Wittenberg (Germany), University scholarship for summer internship, 19 July to 12 September 2022.
- Mr. Gaurav Pal Singh, Oral and poster presentation at META 2022 (The 12th International Conference on Metamaterials, Photonic Crystals, and Plasmonics) at Torremolinos (Spain), Institute travel fund, 19 to 22 July 2022.
- Mr. Dishant Beniwal PMRF awarded (May 2022 cycle).
- Mr. Dishant Beniwal second prize in oral presentation, NMD-ATM, November 2022.
- Ms. Jhalak PMRF award renewal (Renewal May 2022, original award May 2021).

INVITED LECTURES BY FACULTY

Name of the Faculty	Dr Abhishek Tiwari		
Lecture	FEM modelling of creep-fatigue crack		
Department	Metallurgical and Materials Engineering		
Institute	MNIT Jaipur		
Date	26-12-2022		
Name of the Faculty	Dr Abhishek Tiwari		
Lecture	Configurationals forces on cracks in creep and creep fatigue conditions		
Department	School of Material Sci. & amp; Tech		
Institute	IIT BHU		
Date	04-03-2023		
Name of the Faculty	Dr Abhishek Tiwari		
Lecture	Using material inhomogeneities to enhance fracture resistance of materials		
Department	Department of Mechanical Engineering		
Institute	IIT Guwahati		
Date	13-12-2022		
Name of the Faculty	Dr. Neha Sardana		
Lecture	The exotic world of Metamaterials		
Department	Materials Engineering		
Institute	MNIT Jaipur		
Date	March 30, 2022		
Name of the Faculty	Dr. Neha Sardana		
Lecture Tunable Plasmonic Metamaterials For Sensing Application			
Department	International Conference on Emerging Materials for Sustainable		
·	Development		
Institute	CSIO-CSIR, Chandigarh		
Date	October 10-11, 2022		

Name of the Faculty	Dr. Neha Sardana				
Lecture	Plasmonic and metamaterials for energy and sensing applications				
Department	KARYASHALA (high end workshop) on Renewable Energy:				
Department	Production and Storage				
Institute	IIT Ropar				
	Sept. 30, 2022				
Date					
Name of the Faculty	Dr. Neha Sardana				
Lecture	Session chair on Artificial Intelligence, Machine Learning, National Security				
Department	Technical symposium on Basic Science and Technology for Sustainable Development (BSSD)				
Institute	BARC Mumbai				
Date	Sept. 17, 2022				
Name of the Faculty	Dr. Neha Sardana				
Lecture	New energy systems				
Department	7-day Functional development program (SJVN ltd.) Battery storage, green hydrogen and new energies				
Institute	IIT Ropar				
Date	Sept. 12, 2022				
Name of the Faculty	Dr. Neha Sardana				
Lecture	Metamaterials				
Department	Progressive Regional Association of Youth for Advancement of Sciences, PRAYAS and INYAS event				
Institute	Govt. of Punjab				
Date	July 9th 2022				
Name of the Faculty	Dr. Neha Sardana				
Lecture	Plasmonic Metamaterials: from basics to applications				
Department					
Institute	Materials Engineering IIT Gandhinagar				
Date	1st April 2022				
Name of the Faculty	Pratik Kumar Ray				
Lecture	Revisiting Glass-Forming Ability in Binary Metallic Alloys				
	Metallurgical and Materials Engineering				
Department	AFTMME 2022				
Institute					
Date	December 2022				
Name of the Faculty	Prince kumar Singh				
Lecture	Art of Research Writing: Idea to Acceptance of Article				
Department	Energy centre and Mechanical engineering				
Institute	MANIT Bhopal				
Date	14th November 2022				
Lecture	Role of Modelling in Development of Steelmaking Processes				
Department	Metallurgical and Materials Engineering				
Institute	MNIT Jaipur				
Date	26th July 2022				
Name of the Faculty	Rajiv Kumar				
Lecture	Analysis of XRD data: Basic to Advance				
Department	Metallurgical Engineering				
Institute	BIT Sindri				
Date	18th January 2023				
Name of the Faculty	Dr. Ravi Mohan Prasad				
Lecture	Progress in Polymer-Derived Porous Ceramics for Gas Sensing				
	Applications				
Department	Metallurgical and Materials Engineering				
Institute	IIT Madras				
Date	10-March-2023				


Sr. No.	Name of the experts with affiliation	Торіс	Date
1.	Prof. Arunansu Haldar, Formerly, TATA Steel and IIEST	Advanced High Strength Steels for Automotive Applications: a few examples	27th September 2022
2.	Prof. GVS Sastry IIT Varanasi	Effect of electropulsing on Nanostructured steel	22nd November 2022
3.	Prof. Mahesh C Somani Professor , Materials and Mechanical Engineering University of Oulu, Oulu, North Ostrobothnia, Finland	Novel Sustainable UHS Steels for a Greener Future	23rd January 2023
4.	Dr. Harshit Kumar Khandelwal BARC	Influence of thermo-mechanical processing on structural integrity of PHWR pressure tube material	7th February 2023

VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1.	Mr. Gaurav Pal Singh	Spain	12th International Conference on Metamaterials, Photonic Crystals and Plasmonics, July 19 – 22, 2022
2.	Mr. Gaurav Pal Singh	Germany	Internship at MLU, July - Sept. 2022
3.	Mr. Ayush Pratap Singh	Taiwan	Internship at CCU, Sept. 2022 – Jan 2023
4.	Mr. Dishant Beniwal	Singapore	Oral Talk – International Conference on Advancement in Structural Alloys and their Manufacturing, Jan 2023
5.	Ms. Jhalak	Singapore	Poster – International Conference on Advancement in Structural Alloys and their Manufacturing, Jan 2023



MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

S. No	Name of the faculty	Project title	Funding Agency	(Ongoing/completed)
1.	Dr Abhishek Tiwari	Configurational force based concept of material inhomogeneity to enhance crack resistance of materials,	SRG-SERB,	Ongoing

2.	Dr Abhishek Tiwari	Improved creep- fatigue crack resistant material design using configurational force approach,	ISIRD Phase I	Completed
3.	Dr. Khushboo Rakha (PI)	Feasibility Study on Iron Extraction from Industrial Mill Scale	Industrial Project	Completed
4.	Dr. Khushboo Rakha (PI)	Assessment of Bending in Aluminum Pipes	Industrial Project	Ongoing
5.	Dr. Neha Sardana (PI)	Portable Bacterial sensing device	DST SYST	Ongoing
6.	Dr. Neha Sardana (PI)	Optical device prototype for sensing water contamination	ISIRD Phase I, IIT Ropar	Completed Dec. 2022
7.	Dr. Neha Sardana (PI)	Industrial Project	SBL coatings	Sept. 2022 - Feb. 2023
8.	Pratik K Ray	Design and Development of Novel High Temperature Compositionally Complex Alloys	IIT Ropar, ISIRD	Ongoing
9.	Pratik K Ray	Designing improved bond- coat materials through co- doping of reactive elements.	DST-CRG	Ongoing
10.	Pratik K Ray	In- situ investigation s on the oxidation mechanisms and subscale phase- transformations in MCrAIY alloys.	DAE-CRS	Ongoing
11.	Pratik K Ray	Development of Indigenous Encapsulated Phase Change Material (PCM) based Active Wear Textiles and Demonstration of Commercial scale Manufacturing.	NTTM	Ongoing

		Accomment		
12.	Prince Kumar Singh	Assessment of tundish hydrodynamic performance	Aarti Steel Cuttack	Completed
13.	Prince Kumar	Roll of ladle Shroud design on hydrodynamic performance of tundish	ISIRD 1, IIT Ropar	
14.	Rajiv Kumar	Development and scale-up- TRL5–of cost- effective Copper Graphene materials using in-situ synthesis and coating in Fluidized Bed Process systems	Ministry of Mines (Government of India)	Ongoing
15.	Rajiv Kumar (Co-PI)	Assessment of Additive Manufactured Titanium Alloy Nickel Aluminium- Bronze Alloy: An Exploratory Study Propeller Materials	Naval Research Board, DRDO	Ongoing
16.	Dr. Ravi Mohan Prasad (PI)	Thermoresistant Polymer-Derived Microporous Ceramic Membranes for Separation of Hydrogen and Carbon Monoxide/Carbo n Dioxide in Hydrogen Production	DST-TMD	Ongoing
17.	Dr. Ravi Mohan Prasad (Pl)	Simultaneous Separation and Sensing of Hydrogen and Carbon Monoxide/Carbo n Dioxide using Polymer-Derived Ceramics Membranes for Hydrogen Purification	DST-CRG	Ongoing
18.	Dr. Ravi Mohan Prasad (co-PI)	Development of Compressed Hydrogen-Fuel Cell Integrated System Suitable for Light-Duty Vehicles	DST-TMD	Ongoing



DEPARTMENT OF PHYSICS

Programs offered	:	MSc, Ph	ı.D			
No. of Students	:	M.Sc.	-	42		
	:	PhD	-	84		
Head of the Department	:	Dr. Rake	esh Kun	nar		
No. of faculty members	:	18				
No. of staff members	:	04				
		Technic	al Staff		:	03
		Adminis	strative	Staff	:	01
Thrust Area	:					
		Conde	ensed N	Matter		
		 Gravit 	y and S	String (1	[heory])
		• Liaht-	- Matter I	nterac	tion and	d Quantum Information
		Nucle				
No. of Publications	:	33				





Prof. Rajeev Ahuja Professor & Director of IIT Ropar

Ph.D (Indian Institute of Technology Roorkee) Research Area : Computational materials science, Energy storage, Sensors & High pressure physics



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





Assistant Professor Ph.D(Harish Chandra

Research Institute, Allahabad) Quantum field theory, Black holes and Modular forms

Dr. Kailash Chandra Jena

Dr. Rajesh Kumar Gupta



Technology Madras) Nonlinear Laser Vibrational Spectroscopy, Interfacial Water Structure, Binding of Ions to Amino Acids, Lipids and Proteins, Radiation

Ph.D (Indian Institute of

Deformation at Interfaces

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. Mukesh Kumar

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

Dr. Shubhrangshu Dasgupta

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

Induced Effects and

Assistant Professor





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



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



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



No.

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. 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. 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

FROM THE DIRECTOR'S DESK

of Labs	:	UG	:	02
		PG	:	04
		Research	:	11

Name of the lab	:	Unde	ergradu	ate Lab and Faculty Incharge
Dr. Deepika Choudhury (Faculty	Inchar	ge)	:	General Physics Lab
				UG Optics Lab
Name of the Labs (PG) and Facu	ilty In c	charge	:	M.Sc. Condensed Matter (Dr. Debangsu Roy)
				M.Sc. Nuclear Physics Lab (Dr. Pushpendra P. Singh/ Dr. Deepika Choudhury)

Dr. Rajesh V. Nair (Faculty Incharge)	:	M.Sc. Optics Lab
Name of the Labs (PG) and Faculty In charge	:	M.Sc. Electronics Lab (Prof. R.G.Pillay/ Dr. Rakesh Kumar)

Name of Research labs

S.No.	Name of Research Lab	Name of the Head of the Research Lab	Name of the equipment
1	Material Deposition Lab	Dr. S. Sarkar	DC/RF magnetron sputtering facility Sonicator with heater Spin coater Balance Dip coater Ion gun Environment Chamber
2	Graphene lab	Dr. Rakesh Kumar	Electrostatic deposition technique set up Optical microscope Diamond wire saw Sonicator, hot plate
3	Nanoscience lab	Dr. Rakesh Kumar	Chemical Vapor deposition set up Box furnace Hydraulic press
4	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
5	Common Material Synthesis lab	Dr. Rakesh Kumar (HoD Physics)	LG Refrigerator to keep chemicals Fume Hood U-V Cleaner + Hot plate Sonicator Spin Coater Metal Evaporation system + Desktop
6	Central facility	Dr. R.V. Nair	UV-Vis-NIR Spectrophotometer
7	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.
8	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) Chemical vapor deposition system

9	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 Scienti 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 He-Ne Laser @ 632 nm Fiber coupled diode laser system @ 808 nm Digital storage oscilloscope High bandwidth detectors Diode laser @ 1064 nm

AWARDS AND HONOURS 2022-23 (FACULTY)

Dr. Mukesh Kumar

2023	Japan Society for the promotion of the Science (JSPS) Fellowship, Japan
2022	World top 2% scientist, Stanford University, USA
2022	Top cited author in India (top 5 %), Royal Society of Chemistry
2022	Fellow, Institute of Physics, UK
May 2022 - Till date	Associate Editor, Frontiers in Electronics
June 2022-June 2024	Editorial Board Member of Nano Express, IOP Publisher

Dr. Rajesh V Nair

Listed among the 75 Indian scientists below the age 50, who are shaping today's India: Ministry of Science and Technology, Govt. of India (2022)

Lead editor for a special issue on Photonic Materials for European Physical Journal-Springer Nature publishing group (2022).

INVITED LECTURES BY FACULTY

Dr. Mukesh Kumar (More than 12 invited talks)

- Invited talk, Binghamton University, Binghamton, NY, USA, "Solar-Blind Photodetector" May 4, 2022
- Karyahala, SERB funded workshop on , "Chemical Vapour Deposition Technique" Doon University, Oct 31, 2022
- Invited talk, IUMRS, IIT Jodhpur, "Wafer Scale 2-D MoS2 for gas sensor and Broadband photodetectors" Dec 19-23, 2022
- Karyashala, SERB funded workshop on Green Energy Harvesting and storage: materials, methods and Applications, "Cost-effective CZTS solar cells: Current status, challenges and future prospects" IACS Kolkata, Nov 16-22, 2022
- Invited talk, "Solar-Blind Photodetector, International Symposium on Semiconductor Material and Devices (ISSMD-2022), 16-18, Dec 2022, KIIT Bhubaneswar

Dr. Rakesh Kumar

- 1. National Webinar on "Two dimensional Materials: Graphene and Beyond" on 28th March 2022
- 2. Invited talk, Patiala University, under Synergistic Training program Utilizing the Scientific and Technological Infrastructure (STUTI) program, 20th November, 2022

Dr. Rajesh Gupta

- 1. Quantum spacetime seminar: "On scale-invariant non-relativistic field theories" TIFR, Mumbai, 27th June 2022
- 2. "Defects/boundary and disorder in non-relativistic systems" Black Holes and Gauge Theories with Holographic Enlightenment workshop, IIT Madras, 2-5th January, 2023

Dr. Vishwa Pal

- 1. Invited talk "Rapid laser solver for computationally hard problems," Symposium on Light-matter interaction, Quantum Photonics and Quantum Information, IIT Delhi, Delhi, India, 25 February 2023.
- 2. Invited national webinar- "Laser Technology and it's applications," Gujranwala Guru Nanak Khalsa College, Ludhiana, Punjab, India, 20 February 2023.
- 3. Invited talk- "Optical Computing with a laser simulator," Laboratoire Lumière, Matière et Interfaces (LuMIn), University of Paris Saclay, Gif Sur Yvette, France, 14 September 2022.
- 4. Invited talk "Large network of coupled lasers," DST STUTI Programme, Department of Physics, University of Lucknow, 12 August 2022.
- 5. Invited talk "Phase locking of a large network of coupled lasers," Sri Sivasubramaniya Nadar College of Engineering Kalavakkam-603110, Chennai, India, 12 May 2022.

Dr. Rajesh V Nair

- 1. 12th Bangalore Nano, Bangalore India March 2022
- 2. Indian Physics Association Colloquium, April 05, 2022
- 3. Institute Seminar, 3. Physikalisch
- 4. es Institut, University of Stuttgart, Germany, 28th June 2022.

- 5. Conference on Optics, Photonics, and Quantum Optics, XLV annual symposium of Optical Society of India, November 2022, IIT Roorkee.
- 6. National Laser Symposium (NLS-31), December 2022, IIT Kharagpur

Dr. Shankhadeep Chakrabortty

- 1. Seminar: Tensionless string theory: A fairy tale on the worldsheet, Department of Physics, IIEST, Shibpur, Apr 29, 2022
- 2. Workshop Talk: Rindler physics of tensionless string, Shivalik HEPCATS 2022 (Summer), Department of Physics and Astronomical Science Shahpur Parisar, Central University of Himachal Pradesh, 02 September, 2022.

LECTURES BY VISITING EXPERTS

Sr. No.	Name of the experts with affiliation	Торіс	Date
1	Prof. Dr. Rajinder Singh (Physics Didactic and Science Communication Group, Physics Institute, University of Oldenburg, Germany)	The Golden Era of Indian Physics	05-08-2022
2	Dr.Gagandeep Singh Dipartimento di Fisica e Astronomia "G.Galilei", Università Degli Studi di Padova & INFN Sezione di Padova, Via F. Marzolo 8, I-35131 Padova (Italia)	Neutron halos in the island of inversion and two-neutron transfer reactions.	08-09-2022
3	Dr Pawan kumar (postdoc) Institute of Materials Research and Engineering (IMRE), A*STAR Singapore	Charge transport in Organic Thermoelectric Materials	09-01-2023
4	Dr. Tanay Nag,post-doc (KAW fellow) Uppsala University, Uppsala, Sweden	Topological transports in Weyl semi-metals	16-02-2023
5	Dr. Raj Kumar Ramamoorthy, Postdoctoral, France	Crystallization in solution: from pre- nucleation clusters to Gold nanoparticles	28-03-2023
6	Dr. Pankaj Kumar from IUAC Delhi	National Chronometer: Detection Techniques and research	04-03-2023
7	Prof. Fabien Bretenaker from CNRS, LUmin, Paris-Saclay.	Phase sensitive amplification	04-03-2023
8	Prof. Patrick Das Gupta from University of Delhi, Department of Physics & Astrophysics PhD	Formation of supermassive blackhole	04-03-2023
9	Prof. Krishnacharya Khare from IIT KANPUR	Soft matter physics	04-03-2023
10	Dr. Lakhan Bainsala, Chalmers University of Technology, Sweden	Spintronics	05-04-2023



VISITS ABROAD BY THE FACULTY

Sr. No.	Name of the faculty member	Country	Detail of visit with date
1	Dr. Mukesh Kumar	USA	Fulbright-Nehru Academic and Professional Excellence Fellowship, visited Syracuse University, NY, USA
2	Dr. Vishwa Pal	France	SERB-International Research Experience Fellowship. Visited CNRS-Laboratoire Lumière, Matière et Interfaces (LuMIn), Orsay, France, during 1 July 2022-20 September 2022.

VISITS ABROAD BY THE STUDENTS

Sr. No.	Name of the Student	Country	Detail of visit with date
1	Ms. Paramjeet	Brazil	To attend a school and conference (6-03-2023 to 24-03-2023) Title : school on Lights and cold atoms, and Workshop on Low dimensonal Quantum gases at principia Sao Paulo
2	Mr. Nitin Joshi	Germany	To attend a conference (23/07/2022 to 31/07/2022), Title :PASCOS 2022, the 27th International Symposium on Particles, Strings and Cosmology
3	Ms. Arzoo Sharma	Germany	Ph.D. work (28/02/2022 to 31/12/2022), Visited GSI Germany
4	Mr. Shagun Kaushal	Germany	To attend a Workshop 11/04/2023 to 21/04/2023
5	Ms. Rajat Roy	Romania	For PhD Research Work at ELI-NP , Romania for one year (from October 2022 onwards)

MAJOR RESEARCH PROJECTS (ONGOING/COMPLETED)

Dr. Mukesh Kumar

S. No.	Funding agency	Title of the project	Amount of funding (Lakhs)	Duration
1.	Core Research Grant- SERB	Charge transport and interfacial studies of PtSe2/MoS2 van der Waals heterojunction and its application for near infrared photodetectors	38.72	2021-2023
2.	Integrated Clean Energy Materials Accelerated Platform (IC-MAP) - DST	Collaborative Research for Accelerated Development of Materials & Devices for Energy harvesting and conservation technology (CRADMET)	49.24	2022-2025

Dr. Rajesh Gupta

Sr. No	Agency	PI/Co-PI	Amount	Duration	Title
1	Matrics grant, SERB,	PI	6.6 Lakh	2023-2026	Quantum field theory in the presence of boundary

Dr. Vishwa Pal

Sr. No.	Funding agency	Title of Project	Funding amount	Status
1	SERB	Next generation of high power ultrafast fiber lasers based on controlled space- time dynamics in amplifying nonlinear multimode fiber	47.54 Lakh	Ongoing
2	SERB	Improving the performance of a laser simulator	8.79 Lakh	Completed
3	Industrial consultancy	Extending the depth of focus of a high- power laser output beam	6 Lakh	Ongoing

Dr. Rajesh V Nair

Sr. No	Agency	PI/Co-PI	Amount	Duration	Title
1	DST-ICPS (Quantum Enabled Science and Technology, Govt. of India)	PI	183 lakhs	2020-2024	Nanophotonic control on the emission properties of color centers in nanodiamonds for quantum optical applications
2	DST-SERB (Swarnajayanti Fellowship Project)	PI	320 lakhs	2020-2025	Studies on the spectral and temporal modification of spontaneous emission of solid state defects using resonant photonic structures

Dr. Shankhadeep Chakrabortty

Sr. No	Agency	PI/Co-PI	Amount	Duration	Title
1	Core Research Grant , SERB	PI		2023-2026	Singular limits of String Theory



INDO-TAIWAN JOINT RESEARCH 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. Shweta Jain, Assistant Professor,

Computer Science Engineering, IIT Ropar



WORKSHOPS

Indo-Taiwan Joint Workshop on Agriculture and Water Resource Management:

The Indo-Taiwan Joint Workshop was conducted on Agriculture and Water Resource Management on January 19th 2022, jointly hosted by Indo-Taiwan Joint Research Center, AWaDH, IIT Ropar, and CCU, Taiwan. The workshop started with a Welcome Address by Dr. C. T. Wang, Director of Science & Technology, Ministry of Science Technology, Taiwan, Taipei Economic Cultural Centre, Delhi, India and Prof. Rajeev Ahuja, Director, Indian Institue of Technology, Ropar followed by presentation sessions on different topics. The topics included plant microbial fuel cells for soil remediation, urban greening and waste valorization, nanobubbles offer to improve agriculture and water technology, arsenic in environment, Digital technologies for Agriculture 4.0.



Indo-Taiwan Joint Workshop on Agriculture and Water Resource Management Hosted by AWaDH, IIT Ropar, ITJRC, and CCU



ITJRC organizes online webinar for the students of different regions of the countries and list of the webinars are as follows:

Webinar : Al-Driven "Farmer Collectives" for Sustained Prosperity of Small and Marginal Farmers

Name of the Speaker	:	Prof. Y. NARAHARI
Institute	:	IISc Bangalore
Date	:	7th April 2022

Webinar

Al-Driven "Farmer Collectives" for Sustained Prosperity of Small and Marginal Farmers Date: 7th April 2022 (Thursday) | Time: 2 PM IST/4:30 PM GMT (Taiwan's time)

Prof. Y. NARAHARI (Professor, HSc, Bangalore)



Prof. Y. Nanshari is currently a Professor at the Department of Computer Science and Automation, Indian Institute of Science, Bangalore, India. The common thread in his current research is to apply game theory, mechanism design, and artificial Intelligence techniques to research problems at the Interface of computer science and economics. In particular, he is interested in auctions and markets, cooperative game theory, computational social choice, machine learning, and data analytics. He is also exploring the application of these to digital agriculture and public health problems. He is the author of a textbook entitled "Game Theory and Mechanism Design" brought out by the IISc Press and the World Scientific Publishing Company and a Co-Author of two other highly cited books.

Abstract

A farmer producer organisation (FPO) or farmer collective is a cooperative collective of farmers which enables economies of scale to be exploited by a large community of farmers coming together under one underlike. There are more than 6000 FPOs in existence in India currently and these are formed under various initiatives of the Government of India and various state Governments, over the past decade. The perceived benefits of FPOs include: reduction in input costs (seeds, fertilizers, pesticides, farm equipment, etc.); increase the revenue of farmers; and provide better access to farm credit and crop insurance for farmers. There is a critical need to modernize the operations of FPOs and provide technical advice and technology support to enable them to better realize the above FPO objectives. In this proposal, we bring out the role of Ar, machine learning, and game theory in addressing use-cases such as: (1) reduce input costs to farmers (2) facilitate access to farm credit and crop insurance (3) provide advisories to farmers, and (4) increase the revenue from farm output.

Webinar Link: https://meet.google.com/jpv-adph-ums

Omanized By: Indo-Taiwari Joint Research Centre on AL& ML, Poorn # 223, 5, Ramanuan Block, IIT Ropar, Rupragar, 140111, India



Webinar : When Internet of Things (IoT) Meets Algorithms" and their Impacts on Service-Profit Chain

Name of the Speaker	:	Prof. JJ Hseih
Institute	:	Georgia State University
Date	:	July 28, 2022

JOINT PROPOSAL SUBMISSION

There were three joint proposals submitted to the Indo-Taiwan Programme of Cooperation In Science and Technology 2022. The details for these projects are given as follows:

1) Project title: Improving Reliability & Lifetime in IoT Based Next Generation Vehicular Communication Networks using Coded Cooperation.

Project Lead	:	Dr. Sam Darshi
		Dr. Jen-Yi Pan jypan@ccu.edu.tw
Total Fund	:	3826000.00
Indian (GITA)	:	2022TW0201047

2) Title: Early detection of sepsis by analyzing blood flow velocity at fingertip using artificial intelligence

Project Lead	:	Dr. Deepti R. Bathula
Project Lead	:	Dr. Wei-Min Liu Total Fund: 2906760.00
		Indian (GITA) 2022TW0201094

3) Title: Towards Designing Fair, Transparent and Accountable Human-Al Teams

Project Lead	:	Dr. Shweta Jain
Project Lead	:	Dr. Pao-Ann Hsiung pahsiung@csie.io
Total Fund	:	5256800.00
		Indian (GITA) 2022TW0201003
Other members	:	Dr. Shashi Shekhar Jha, Dr. Wei-Min Liu, Dr. Ming-Hung Wang, Dr. J. J. Hseih from GSU, USA.

Visit of IIT Ropar student to CCU Taiwan under TEEP

Mr. Ayush Pratap, 2nd year Ph.D. student in the Department of Metallurgical and Materials Engineering at IIT Ropar was nominated from ITJRC to Taiwan Experience Education Program (TEEP). After rigorous rounds of interview, he got selected for the TEEP internship under Professor Pao-Ann Hsiung for the research topic of Trustworthy Artificial Intelligence for a total of six (6) months in Taiwan. He has been granted a research stipend of NT\$10,000 per month for six months and travel funding from the center. Towards the end of the visit, he submitted a project report. The following papers are published during his visit to CCU.

- 1] A. Pratap, N. Sardana, S. Utomo, J. Ayeelyan, P. Karthikeyan, and P.-A. Hsiung, "A Synergic Approach of Deep Learning towards Digital Additive Manufacturing: A Review," Algorithms, vol. 15, no. 12, p. 466, Dec. 2022, doi: 10.3390/a15120466.
- [2] A. Pratap, N. Sardana, S. Utomo, A. John, P. Karthikeyan, and P.-A. Hsiung, "Analysis of Defect Associated with Powder Bed Fusion with Deep Learning and Explainable AI," in 2023 15th International Conference on Knowledge and Smart Technology (KST), IEEE, Feb. 2023, pp. 1–6. doi: 10.1109/KST57286.2023.10086905.
- [3] S. Utomo, A. John, A. Pratap, Z.-S. Jiang, P. Karthikeyan, and P.-A. Hsiung, "AIX Implementation in Image-Based PM2.5 Estimation: Toward an AI Model for Better Understanding," in 2023 15th International Conference on Knowledge and Smart Technology (KST), IEEE, Feb. 2023, pp. 1–6. doi: 10.1109/KST57286.2023.10086917.



Visit of IIT Ropar student to NCTU Taiwan under inbound short term research scholarship program

Ms. Priya Verma, student in the Department of Mathematics, IIT Ropar was selected under the program inbound short term research scholarship program for research collaboration with Chiao Tung University (host professor Prof. C.Y. Chen) for two months. Under this program she received scholarship of NTD 27500 PM. She is yet to come from her visit and submit a detailed report.

Courses (Chinese level -1 and Chinese level 2) offered by the Taiwan Education Center:

We offered a Chinese level -1 course from August to December 2022 with 45 enrollments. We had earlier offered Chinese level - 1 course from January-May 2022 with 75 enrollments.

Looking at the popularity of the course, we are also offering Chinese level - 2 courses this semester with 19 enrollments. IIT Ropar for the first time is prepared to conduct the TOCFL exam on 13th May at IIT Ropar. The registration process has already started.

Joint M.Tech Thesis:

Projects were invited from both IIT Ropar and CCU Taiwan. A meeting was held between the interested faculties from both institutes over several projects. The following publication is sent for review from one Mtech thesis project:

Sumeet Gupta, Shashi Shekhar Jha, Shweta Jain, Ming-Hung Wang, Pao-Ann Hsiung. Take Expert Advice Judiciously: Combining Groupwise Calibrated Model Probabilities with Expert Predictions. Submitted to IJCNN 2023.



The project proposals were called to increase the reach of the center and to improve the research collaboration among the two countries. We are happy to share that we have received six proposals that we plan to fund from the center. The details for the proposals are as follows:

• **Title of the Project:** Fair and Explainable AI Algorithms with Human-in-The-Loop Faculties at IIT Ropar: Dr. Shashi Shekhar Jha and Dr. Shweta Jain Collaborating University from Taiwan: National Chung Cheng University (CCU), Taiwan

Faculties at CCU, Taiwan: Prof. Pao-Ann Hsiung and Prof. Ming-Hung Wang

- **Title of the project:** Development of data-driven model for hydrodynamic instabilities Faculties at IIT Ropar: Prof. Manoranjan Mishra (Dept of Mathematics, IIT Ropar) Faculties at CCU, Taiwan: Prof. Ching-Yao Chen (Fellow ASME (USA) and AASRC Taiwan
- **Title of the project:** Virtual Instructor for Sports Coaching Faculty at IIT Ropar, Dr. Mukesh Kumar Saini Collaborating University: National Tsing Hua University

Collaborating Faculty: Dr. Min-Chun Hu, Associate Professor, National Tsing Hua University

• **Title of the project:** Developing a Distributed, Fog Computing-Based Security System for IoT Networks using AI/ML techniques

Dr, Nitin Auluck, CSE, IIT Ropar

Dr. Brij B. Gupta, Professor, Department of Computer Science and Information Engineering (CSIE), Asia University, Taiwan

• **Title of the project:** Reliability and Lifetime Improvement in Next Generation Vehicular Communication Networks using IoT and AI/Machine Learning Based Coded Cooperation. Dr. Sam Darshi (PI, India side): IIT Ropar

Dr. Jen-Yi Pan (PI, Taiwan side): Advanced Network Technology Laboratory, Department of Communications Engineering, National Chung Cheng University, Taiwan.

- 2) We plan to continue the Joint M.Tech thesis project collaboration meetings so that more publications can come out from the two institutes
- 3) We also plan to continue offering more courses, conduct more webinars, call more proposals, and facilitate more exchanges of faculties and students from the two countries.



PUBLICATIONS (a)IT ROPAR



DEPARTMENT OF BIOMEDICAL ENGINEERING

JOURNALS:

- A. N. Mallick, M. Kumar, B. Basumatary, K. Arora, and A. K. Sahani, "Design and Testing of Pressure Ulcers Preventive Bed for Neonates in Neonatal Intensive Care Units," IEEE Transactions on Medical Robotics and Bionics, 2023.
- S. Kumar, B. Basumatary, R. K. Bansal, and A. K. Sahani, "Techniques for the Detection and Management of Freezing of Gait in Parkinson's disease- A Systematic Review and Future Perspectives," MethodsX.
- A. N. Mallick, M. Bhandari, B. Basumatary, S. Gupta, K. Arora, and A. K. Sahani, "Risk Factors for Developing Pressure Ulcers in Neonates and Novel Ideas for Developing Neonatal Anti-pressure Ulcers Solutions," Journal of Clinical Neonatology.
- R. Balendra and A. K. Halder, "Improvising Limitations of DNN based Ultrasound Image Reconstruction," Physical and Engineering Sciences in Medicine (APES).
- R. Nadda, R. Repaka, and A. K. Sahani, "Numerical Modelling of Conical-Shaped Bone Marrow Biopsy Needle into Multilayer Iliac Crest Model," ASME Journal of Engineering and Science in Medical Diagnostics and Therapy, 2022.
- G. Gaurav, R. Shukla, G. Singh, and A. K. Sahani, "A Machine Learning Approach to Smartwatch Based Epileptic Seizure Detection System," IETE Journal of Research, 2022.
- 7. R. Nadda, R. Repaka, and A. K. Sahani, "Finite element simulation of multilayer model to simulate fine

needle insertion mechanism into iliac crest for bone marrow biopsy," Computer Methods in Biomechanics and Biomedical Engineering, 2022.

- P. Sachdeva, A. Rm, R. Shukla, and A. K. Sahani, "A Review on Artificial Pancreas and Regenerative Medicine Used in The Management of Type-1 Diabetes Mellitus," Journal of Medical Engineering & Technology.
- M. Bhandari, N. Rasool, and Y. Singh, "Polymeric lipid nanoparticles for donepezil delivery," Lecture Notes in Bioengineering, vol. 2022, pp. 51–63.
- N. Rasool, R. Srivastava, and Y. Singh, "Cationized silica ceria nanocomposites to target biofilms in chronic wounds," Biomaterials Advances, vol. 138, 2022.
- Verma, M., et al. "A novel pyrenebased aggregation induced enhanced emission active Schiff base fluorophore as a selective"turn- on" sensor for Sn2+ ions and its application in lung adenocarcinoma cells." (2022).
- 12. Z. Dasdk et al., "Mycobacterium tuberculosis epitope entrapped innanoparticles expressing TLR-2 ligand targeted to dendritic cells elicit protective immunity," J Biol Chem, 2022.
- S. Singh, S. K. Maurya, M. Aqdas, and A. Bhallav, "Mycobacterium tuberculosis exploits MPT64 to generatemyeloid-derived suppressor cells to evade the immune system," Cell Mol Life Sci.

- "Fiction and facts about BCG imparting trained immunity against COVID- 19.KaurG," Vaccines, vol. 10, 2022.
- A. Mittal et al., "Artificial intelligence uncovers carcinogenic human metabolites," Nat. Chem. Biol., vol. 18, no. 11, pp. 1204–1213, 2022.
- S. Saproo et al., "Salivary protein kinase C alpha and novel microRNAs as diagnostic and therapeutic resistance markers for oral squamous cell carcinoma in Indian cohorts," Front. Mol. Biosci., vol. 9, 2023.
- S. Saproo et al., "MiR-330-5p and miR-1270 target essential components of RNA polymerase I transcription and exhibit a novel tumor suppressor role in lung adenocarcinoma," Cancer Gene Ther., vol. 30, no. 2, pp. 288–301, 2023.
- K.K Dwivedi, P. Lakhani, P. Sihota, K. Tikoo, S. Kumar, and N. Kumar, "The multiscale characterization and constitutive modeling of healthy and type 2 diabetes mellitus Sprague Dawley rat skin," Acta Biomater., vol. 158, pp. 324–346, 2023.
- 19 K. K. Dwivedi, P. Lakhani, and N. Kumar, "Effect of collagen fiber orientation on thepoisson's ratio and stress relaxation of skin: An exvivo and in-vivo study," Journal of Royal Society Open Science, no. 9, 2022.
- 20. K. K. Dwivedi, P. Lakhani, S. Kumar, and N. Kumar, "A hyperelastic model to capture the mechanical behaviour and histological aspects of the soft tissues," Journal of the Mechanical Behavior of Biomedical Materials, no. 126, 2022.
- 21. P. Uniyal, P. Sihota, and N. Kumar, "Effect of organic matrix alteration on strain rate dependent mechanical behaviour of cortical

bone," Journal of the Mechanical Behavior of Biomedical Materials, vol. 125, 2022.

- 22 P. Uniyal, A. Sharma, and N. Kumar, "Investigation on the sensitivity of indentation devices for detection of fatigue loading induced damage in bovine cortical bone," Journal of Biomechanics, vol. 143, 2022.
- H. Kaur, M. Verma, S. Kaur, B. Rana, N. Singh, and K. C. Jena, "Elucidating the Molecular Structure of Hydrophobically-Modified Polyethylenimine Nanoparticles and Its Potential Implication for DNA Binding," Langmuir, vol. 38, no. 44, pp. 13456–13468, 2022.
- H. Kaur, S. Chaudhary, H. Kaur, M. Chaudhary, and K. C. Jena, "Hydrolysis and Condensation of Tetraethyl Orthosilicate at the Air-Aqueous Interface: Implications for Silica Nanoparticle Formation," ACS Applied Nano Materials, vol. 5, pp. 411–422, 2022.
- V. Ashima, R. Dubey, and A. K. Shukla, "Portable, wireless and easy to use device for Negative Pressure Wound Therapy," IEEE MEMEA, 2023.
- R. S. Halder, B. Basumatary, A. Pandya, G. R. Jangir, A. K. Jain, and A. K.Sahani, "EMG Based Clinical Evaluation of an Unpowered Exoskeleton Device," IEEE MEMEA, 2023.
- 27. A. Chander, A. Airan, and A. K. Sahani, "A virtual reality-based system for a more engaging indoor exercise biking experience," IEEE Instrumentation and Measurement Technology Conference
- R. S. Krishnu et al., "An Emergency Message and Call System for People with Epilepsy," IEEE Instrumentation and Measurement Technology Conference, 2022

- 29. A. N. Mallick, M. Kumar, A. Chander, R. Kumar, K. Arora, and A. K. Sahani, "Automatic pasteurized formula milk preparation machine with automatic sterilized containers," Annu. Int. Conf. IEEE Eng. Med. Biol. Soc., vol. 2022, pp. 2663–2667, 2022.
- H. K. Chattar et al., "Multi-parameter Wearable Band for Wireless Data Collection from People with Epilepsy," IEEE Instrumentation and Measurement Technology Conference.
- A. Kumar, A. Chander, and A. K. Sahani, An ML pipeline for real-time activity detection on low computational power devices for metaverse applications. Malaysia
- A. N. Mallick, M. Kumar, A. Chander, R. Kumar, K. Arora, and A. K. Sahani, "Automatic pasteurized formula milk preparation machine with automatic sterilized containers," Annu. Int. Conf. IEEE Eng. Med. Biol. Soc., vol. 2022, pp. 2663–2667, 2022.

BOOKS:

- R. Kumar, M. Kumar, G. S. Wander, and A. K. Sahani, Concept, hardware development, and clinical trials of a Galinstan based Mercury free sphygmomanometer -Merkfree.
- H. Agingcell Bashir, S. Singh, R. P. Singh, and K. Agrewalajn, Agemediatedgutmicrobiota dysbiosispr omotes loss of tolerogenic potential in dendritic cells.
- Malik JA, Nanda S, Zafar MA, Sehrawat S, Agrewala JN.,
 "Influence of chronic administration of morphine and its withdrawal on the behavior of zebrafish," vol. 48, 2023.

- V. K. Dubey, S. Sarker, R. Shukla, G. Singh, and A. K. Sahani, Epileptic Seizure Stage Classification From EEG Signal Using ResNet18 Model and Data Augmentation.
- K. Singh, V. Nair, M. Kumar, R. Shukla, G. S. Wander, and A. K. Sahani, Machine Learning Algorithms for Atrioventricular Conduction Defects Prediction Using ECG: A Comparative Study.
- V. Kumar and A. K. Balendra, A Brute Force Methodology for Automated Data Extraction and Analysis for Finite Element Analysis.
- 36. Fabrication of multifunctional scaffold of chitosan/polycaprolactone with structure of a semi-IPN forchronic wound healing.
- Biomimetic composite hydrogel for cell delivery in osteoarthritis. A Mukherjee, B Das Bioremedi- 2022

- A. Mukherjee, Mesenchymal stem cells: Novel avenues in combating COVID-19. Academic Press, 2022.
- M. Kamboj, Role of debridement and its biocompatibility in antimicrobial wound dressings. Book Title: Academic Press, 2023.
- V. P. Nathasha, R. Shukla, S. Yadav, R. S.Krishnu, G. Chander, and A. K. Singh, Automation of Seizure Diary Entry using Mobile-base Application. Malaysia, 2023.

BOOK CHAPTERS:

- R. Shukla, A. K. Sahani, "Algorithms and Devices for Seizure Prediction and Diagnosis", Reviews of Neurology, 2022.
- V. K. Dubey, A. Chander, G. S. Wander, and A. K. Sahani, "A Manufacturer Agnostic IoT and Albased System for Continuous Realtime Recording of Parameters from a Patient Monitor Display," in 3rd International Conference on Frontiers in Computing and Systems,
- V. Nair, V. P. Nathasha, U. P. S. Parmar, and A. K. Sahani, "Real Time Prediction of In-Hospital Outcomes using a Multilayer Perceptron deployed in a Webbased Application," in 3rd International Conference on Frontiers in Computing and Systems, IIT Ropar,
- R. Jain, M. Mago, V. K. Dubey, V. P. Natasha, R. Shukla, and A. K. Sahani, "A General System for Dataset Generation from Smartwatch Sensors for Biomedical Research," in 3rd International Conference on Frontiers in Computing and Systems, IIT Ropar,.
- R. Kumar, A. Adatiya, G. S. Wander, and A. K. Sahani, "Hypertension Prediction by using Machine Learning Algorithm based on Physiological Parameters," in 3rd International Conference on Frontiers in Computing and Systems, IIT Ropar, .

CONFERENCE PAPER:

 S. Bharadwaj and R. Kumar, "The assessment of reflectance ratios for determination of water content in leaves using shorter end of nearinfrared spectroscopy," in Biomedical Spectroscopy, Microscopy, and Imaging II, 2022.

- A. N. Mallick, M. Kumar, K. Arora, and A. K. Sahani, "Finite Element Modelling of a Pressure Ulcers Preventive Bed for Neonates," in IEEE International Conference on Wearable and Implantable Body Sensor Networks, Ioannina, Greece.
- B. Basumatary, R. Halder, and A. K. Sahani, "Deep Learning based Foot Lift Event Detection using a Single Accelerometer for Accurate Firing of FES"," in Conference on Sensing Technology,.
- R. Shukla and A. K. Gaurav, "Epileptic Seizure Detection Using Continuous Wavelet Transform and Deep Neural Networks," in 14th International Conference on Sensing Technology, .
- Polymeric composite hydrogel for mimicking mechanochemical microenvironment of cartilage tissue. [A Mukherjee, B Das TERMIS-AP, Tissue Engg Part A, 2022, https://doi.org/10.1089/ten.tea.2022. 29036.abstrts

 J. Anand Gaonkar and R. Kumar, "Viscoelasticproperties of osteoarthritic human knee articular cartilage," in 2022 IEEE 4th Eurasia Conference on Biomedical Engineering, Healthcare and Sustainability (ECBIOS), 2022

DEPARTMENT OF CHEMICAL ENGINEERING

JOURNALS:

- G. More, D. Rajendra Kanchan, A. Banerjee, and R. Srivastava, "Selective catalytic hydrodeoxygenation of vanillin to 2-Methoxy-4-methyl phenol and 4-Methyl cyclohexanol over Pd/CuFe2O4 and PdNi/CuFe2O4 catalysts," Chem. Eng. J, vol. 462, no. 142110, 2023.
- T. A. Syed, K. B. Ansari, A. Banerjee, D. A. Wood, M. S. Khan, and M. K. Al Mesfer, "Machine learning predictions of caffeine co crystal formation accompanying experimental and molecular validations," J. Food Process Eng., vol. 46, no. 2, 2023.
- P. P. Singh, N. Nirmalkar, and T. Mondal, "Catalytic steam reforming of simulated bio-oil for green hydrogen production using highly active LaNixCo1-xO3 perovskite catalysts," Sustain. Energy Fuels, vol. 6, no. 4, pp. 1063–1074, 2022.
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STUDENT AFFAIRS



STUDENTS AFFARIS ACADEMIC YEAR 2022-23

1. Activities held under Board of Sports Activities (BOSA)

1.1 Common Yoga Protocol: Common Yoga Protocol is an initiative of the Ministry of Education, Government of India along with the Ministry of Ayush. Yoga has numerous benefits as it helps us to control our body as well as mind. By its constant practice, we can free ourselves from fear, anguish and loneliness. In addition, it cultivates the ways of maintaining a balanced attitude in day-to-day life and endows skill in the performance of one's actions. Therefore, we should practice it in our daily life.

Board of Sports Activities, IIT Ropar organized the Common Yoga Protocol at IIT Ropar. Director - IIT Ropar inaugurated the Common Yoga Protocol on the 14th April 2022 at IIT Ropar in which 40 students, faculty and staff participated.



1.2 Yoga Workshop: A sixteen days workshop of Common Yoga Protocol was organized from 18 April to 12 May 2022 for students, faculty and staff in front of M. Visvesvaraya Block (Administrative Building). Approximately 120 to 130 persons participated every day. Five hundred T-Shirts were distributed to the participants. One hundred new yoga mats were purchased and used for organizing the Common yoga Protocol sessions. Yoga banners are displayed in the campus. For B. Tech first year students this activity was made compulsory and credit was given to them.

1.3 Mass Yoga Programme: A mass yoga programme (Common Yoga Protocol) was organized on International Day of Yoga on 21st June 2022 in which around 350-400 students, faculty and staff are expected to participate and conclude the event.



Glimpse of YOGA @ IIT Ropar



1.4 PRAKRAM (An Annual Sports Fest JUIT, Shimla)

IIT Ropar team had a successful run in the Annual JUIT, Shimla's Sports Fest. **IIT Ropar has bagged 2 Gold& 1 Silver Medal at the games.**

- Table Tennis (Boys) team composed of Mr. Anuj Pillay, Ritul Anand, Rajat Arora and Omkar More grabbed the Gold Medal. There were 8 teams from different Institutes and Universities in different sports. All the teams played 2 league matches in their respective pools and then qualified for the knockout stage where they held their nerves and brought laurels to the Institute.
- Volleyball (Girls) IIT Ropar also won the Gold The team members were Vasundhra Pant, Prem Pyari Satsangi, Akanksha, Pratima, Urvee, Aarushi, Kirtdeep, Aditi Aggarwal and Niti Shyamsukha
- Ms. Shruti Sikri won the Silver Medal in Chess (Girls)



1.5 SPARDHA (An annual Sports Fest IIT BHU)

• Mahir Kumar (2021MEB1295) bagged **1 Gold, 1 Silver** and **1 Bronze Medal** in the cycling event.



1.6 Annual Sports Fest of IIT Mandi, "RANN NEETI"

IIT Ropar bagged 25 medals and stood overall runners up in the general championship. There were 700 participants from different IITs, institutes and Universities in the cycling events. The event spanned over 3 days.

- Athletics: 10 Gold, 2 Silver, 4 Bronze
- Weightlifting: 5 Gold
- Cricket: Silver
- · Hockey: Silver
- Tennis(Girls): Gold
- Table Tennis (Boys): Silver

1.7 Sports Eureka



ISMP introduced the freshers to the various clubs of IIT Ropar. The club representatives pesented the facilities, arrangements, equipment and inter/intra-college competitions. A one-day tournament was conducted for the freshers on 13th November 2022. The total participants of the clubs from the batch 2022 was 255.

1.8 Inter Year Sports Championship 2022-23

The Inter Year Sports Championship began on January 28th 2023 and concluded 28 days later with the table tennis bronze medal match. There were 36 events in eleven different sports with almost more than 800 students participating. It had some incredible nail-biting matches and finishes, some magical game-changing moments and some painful losses. At the end of the day, 4th year team that worked hard with tremendous enthusiasm having 72.2 points was the overall champion of the IYSC 2022-23.

Here are some glimpses of IYSC:



1.9 AAROHAN

The annual sports fest of the Institute "Aarohan" was held from 17th to 19th March 2023 at the Indian Institute of Technology Ropar campus. It was an eventful three days, packed with sportsmanship and competitiveness. It witnessed around 600 participants, with over 80 girls and 500 boys, who competed fiercely in 12 sporting events. The events were held on both campuses of IIT Ropar and lasted for three days. It was a pleasure to see the participants from 11 different colleges, coming from as far as 1500km to participate in the fest. More than 80 matches were played during the fest. More than 50 officials, including referees, judges, and medical staff, worked tirelessly to ensure the smooth conduct of the Aarohan 2023. IIT Ropar team was the overall champion of the AAROHAN'23 with 105 points and Chitkara University, Rajpura was the runner up with 83 points.

Glimpse of Aaroha' 2023 @ IIT Ropar



2. BOARD OF LITERARY AFFAIRS

2.1 Enigma Club

2.1.1 Club Sessions

- General Quiz: Team Enigma conducted a general quiz on 9th October 2022. The event consisted of questions from various fields of different formats like pounce, photo identification etc. The session saw an attendance of 17 students. The winners of the event were Achal Khanna and Rishi Murki.



- Quiz on Millets (in collaboration with Epicure):

In collaboration with Epicure Club (BOCA), Team Enigma, held a quiz session on Millets. The quiz saw a participation of around 36 students. The quiz consisted of questions with new formats like geoguessr, rapid fire etc. The top 3 winning teams were given cash prizes and refreshments were provided to the audience.



- **Football Quiz:** Team Enigma, conducted a football quiz. The quiz saw a participation of around 25 students. The quiz comprised of questions with topics covering interesting Football matches, Internet-breaking controversies and Qatar World cup'22.



- **Multi Theme Quiz:** A multi-themed Quiz was held on 16th December' 22. The event featured 5 rounds, with each round consisting of ~5 questions on a variety of topics including Gaming, Anime and Marvel series. A total of 20 enthusiastic participants attended the event. Overall, the event was a great success and received positive feedback from attendees.



- **General Quiz:** Another General Quiz Event hosted by Enigma on Feb 16th' 23 was a great hit. The event was filled with fun and excitement, as the questions were intriguing and kept everyone engaged throughout the event. The questions covered a broad range of topics including history, Art, Games, pop culture and things that captured global attention. The participants found the questions to be both challenging and thought-provoking. The event provided an excellent opportunity for all to showcase their knowledge and test their mental acumen.



- **MELA Quiz:** The MELA quiz held on 11th March'23 saw an enthusiastic participation from 25 individuals. The participants enjoyed a brainstorming session on questions from various genres. The event consisted of 4 rounds with questions based on music, literature, entertainment, and arts. The event was a joyful experience for all the 25 participants.



2.2 DEBSOC [Debating Club]

2.2.1 Sessions Conducted

- Learning About Privatization + Discussing Current Affairs

DebSoc conducted an open session discussing economics: privatization and inflation. Coordinator, Debating Club, Mr. Anurag Meena took charge of the session and explained the various paradigms of privatization. This was followed with a group discussion on the motion: Railways should not be completely owned by the government.



- Open Session on Social Justice: A discussion session on philosophy: contractarianism & social justice was conducted. This was followed by a debate on the motion. This house believes that the criminal court should hire bounty hunters to catch people who refuse to surrender after an indictment. The team was taught the format of Asian Parliamentary Debating to the students.



- Asian Parliamentary Debate Session: This session was to familiarize the new club members with the format of an Asian Parliamentary Debate. This was followed by an Asian Parliamentary Debate on the motion: this house will prefer a world where people cannot lie.

- Marxism Session: This session was to learn about Marxism and deliberate upon some motions based on communism. The old club member and debater Mr. Arsh Malik led the discussion in this session.

- **Mock APD Showcase:** This was an APD in which the older members of the club debated on the motion: this house as Japan would host US' nuclear weapons. The session was conducted in the hybrid mode. The club members were able to learn various stratagems used while debating.

- Argument Analysis Session: The session was based on argument formation where the participants did some practice drills to get better at analysis of arguments.

- International Relations Session: The session was taken by the veteran member of the club and debater Bhumika Sethi, who discussed various tactics to debate International Relations. After the information session, we broke into groups and conducted 4 simultaneous mock APD's on the motion "this house believes that the post cold-war NATO expansion has been detrimental to international relations."

- Argument Formation Drills: In this session a small recap of SRT, (Thematic Apperception Assessment (TAT), PPDT & GD. All these drills were conducted to improve the critical thinking of the members.

2.2.2 ERISTIC '23 - Intra-College Competition Conducted

Debating Club (DebSoc) conducted its annual fresher's debating tournament - "Eristic '23". Spanning over two days, the tournament witnessed stupendous participation from the freshmen. 12 teams registered for the event and 10 teams (of 3 people) participated. The culmination of the event was a thrilling finale between team 'It's Debatable' and team 'Deb Champs'.



2.2.3 Others

- **ISMP Sessions:** Spanning over 10 days from 1-10 November, 2022, DebSoc introduced the 2022 freshmen to the culture of the club by posing an interesting dilemma to them: The Trolley Problem - Kill 1 person or Kill 5 people? Do we have the right to play god? DebSoc conducted vigorous inductions and recruited 31 members into the club. A 1v1 debate (Simple Discussion Type, No formal rules to make it beginner friendly) was conducted. The topic was given on the spot with 5 minutes for preparation.



• Interjection: Can you convince everyone to agree with your views? This was a 1v6 debate wherein given an on spot topic, one contestant presented his arguments and defended his case while 6 people cross-examined and ask questions.

The event was Judged by Mr. Akhil Raj, a lawyer in the supreme court & Mrs. Nekha Fatima.



• **Bidvertise:** This was a very unique event where participants had to place their bids on unique items in round 1 and then showcase their mad-ad skills in round 2 where you try to sell the item to a panel [comprising Dr. Bhavesh Garg and Dr. Aparna Nandha] to make a profit.



2.3 2.3 Poetry Club (Alfaaz)

2.3.1 Sessions Conducted: Alfaaz, as the poetry and creative writing club of IIT Ropar, ensured to grab every chance for the promotion of creativity, enabling expression and appreciation of emotions amidst busy schedules for all.

2.3.2 Events on Festivals



- Session on Diwali (दीपोत्सव): To amplify the grandeur of festivities in Diwali, an open mic was organized. The event witnessed enthusiastic participation from the students, who came up with varied forms of poetry describing their life experiences, and welcoming the approaching winters.

- Session on Holi (नवरेग): This was quite a unique session as it saw enthusiastic participation not only from students, but also from the faculties and staff. All of them came up with different forms of creative expressions, reciting their own poems, as well as those of other poets. Not only poems, the session proved to be more of an enlightening literary discussion with exchange of philosophies, aspirations and experiences.





2.3.2 Activities during ISMP:

The 2022 batch was the first for which ISMP sessions were conducted by Alfaaz. Despite being a new club, the sessions saw a great response from the fresher's with all of them displaying the best of their creativity and collaborative skills through poems, stories and essays based on image prompts. "Alfaaz" organized a creative writing and poetry competition dividing all the students in groups and acquired 40+ poems/articles with an engagement of 370+ students.

2.3.3 Participation in Republic Day 2023: A successfully conducted a poetry recitation segment in the Republic Day programme with the recitation of a duet poem, by Pratham Raj and Neelesh Chaudhary.





2.3.4 Promotion of Sanskrit language: Not just restricting to poetry in English and Hindi, Alfaaz also decided to take the initiative to dig deeper into our roots and explore the beauty of verses in Sanskrit, while also glorifying our nationalism through verses in the praise of our great nation, its rich traditions and diverse cultures.

2.3.5 Events during Zeitgeist' 2023

- **Rang-ae-Jung :** Slam poetry competition: With the unique combination of judgment by the audience as well as established poets, the competition saw an enthusiastic participation of about 20 participants from IIT Ropar as well as other colleges, and an equally lively audience of about 80.

- Hindi Poetry and Ghazal Writing Workshop: A Hindi Poetry and Ghazal Writing Workshop was conducted by Swati Jha and Ravi Shankar, providing valuable insights into the development of the art and the technicalities behind its beauty. Around 30 participants enjoyed being a part of the learning journey.

- Lavanya Sarjana (online story writing competition): The event successfully kindled the creativity and imagination of over 35 participants through prompt-based story writing.

- Kavyanjali : Kavi Sammelan by Poetry Darbar: Amidst the applause of an overwhelmed audience of about 300, the event witnessed the choicest of the poetries of poets Indrajit Ghoshal, Ishaan, Ravi Shankar, Babita Raikwal and Swati Jha from Poetry Darbaar, a not-for-profit initiative based in Gurgaon and delhi NCR.



- Aavritti : Kavi Sammelan by the greatest poets of the time: Graced by the finest poets of modern India, such as Aman Akshar, Azhar Iqbal, Khushbir Singh Shaad, Shashikant Yadav, Abhay Nirbheek and Aayushi Rakhecha, the event was a huge success, with the participation and appreciation of an audience of over 1000, comprising of almost all members of the IIT Ropar fraternity.



2.3.6 Achievements:

- 5 participants cleared the preliminary online round of Aaveg, the poetry competition in IIT Bhubaneshwar's literary fest. Mr. Aneeket Mangal bagged the first prize in the finals.

- Inter IIT Cult-cum- Lit- Meet: Alfaaz was represented in the Slam Poetry and creative story writing event. Tiya Jain and Sakshi Bhagdikar bagged the fourth position among participants from 23 IITs in the Hindi creative writing event.



- Hindi Cell Poetry Event: Alfaaz members, Ganesh Gurjar, Amit Kumar, and Shalini bagged the top three positions in the Poetry Recitation Competition organized by Hindi Cell, IIT Ropar.



- Sessions On technicalities of Poem and Creative Writing: We have also started to conduct the sessions on technicalities of Poetry, Performance Poetry, Visual and sound Modulations and other aspects and angles of technicalities of creative writing.

- **Outreach:** Being a new club, one of the major challenges they faced was becoming a part of the mainstream culture amongst other established clubs. The club continuously screened the members and provided an opportunity to the best ones to be featured on our social media handles, through voiceover reels and posts. They reached over 6000 accounts and the follower count increased by about 200. The growth is completely organic and constantly on the rise. Moreover, the club has engaging WhatsApp group with over 120 participants, providing a platform for expression to all the members. Members are not only restricted to undergraduate students, but also post graduates and research scholars, along with professors as well. All was possible because of an efficient social media team.

2.4 MUN:

2.4.1 Club sessions:

- 2 Open sessions (Participation 20+ in both)
- 3 Sessions for club members (Participation 15+ in every session)
- 10 ISMP Sessions (Combined participation 200+)
- 1 Session (For PG Students)
- 5 Preparation sessions (for CGC MUN Participants)

2.4.2 Participation:

CGC MUN 2022 : An International MUN held in CGC Landran 6 of our club members participated in the conference and got the following accolades:

- Ananya Sethi (South Korea):- Special Mention in UNGA
- Anshika Bhatia (P.Chidambaram):- Special Mention in AIPPM
- Ihita Sinha (Netherlands):- Honorable Mention in UNHRC



2.5 Alpha Productions (Movie Making) Club:

During the year 2022-23, the Alpha Productions (Movie Making) Club organized and executed various videographer events. Also conducted various open sessions throughout the year particularly during ISMP 2022.

Glimpse of Alpha Production Club



2.6 FILMSKI (Movie club): To keep the student community stress free, Filmski arranged to screen the various movies, live matches and other events. During 2022-23, as detailed below:

- Screening of India VS South Africa T20 match played on 2nd October, 2022.
- India VS Pakistan match in M6 on 23rd October, 2022
- Final match of the FIFA World Cup
- Third T20I match played between India and Sri Lanka on 7th January, 2023.



- As part of student activity under the ISMP schedule, movie Chicchhore for the freshers on 28th October, 2022.



- Filmski launched the movie review writing prompt which was one of the highlights of this tenure. For films like Avatar 2, Pathaan, Ant-Man 3,TJMM; numerous responses were submitted.

2.7 Oratory (Public Speaking) Club: Various Sessions were conducted by the team starting with an impromptu round where the participants are left to find a topic on their own and speak up and then followed by group discussions on interesting topics which witness great response. Also conducted JAM Activity followed by Group Discussion on interesting topics like Abortion rights and Practicality of God. Session witnessed great enthusiasm from the fresher's.



2.8 Participation in other Events: BOLA has participated in various national level events with full enthusiasm and zeal which were organized by various other Institutes / Universities:

- Inter-IIT cult-MEET IIT MADRAS
- Nihilanth'23 at IIM A
- TriQ MEET '23 at IISER MOHALI

3. Activities held under Board of Science & Technology (BOST)

3.1 SOFTCOM Club: SOFTCOM club is a community of students who are interested in the development of software apps or web. Club organized the following event during AY 22-23:

- Game Development Session November, 2022 Introduction to Unity3D
- Web Development Session November, 2022 Introduction to HTML, CSS, TailWindCSS
- Ethical Hacking and online security session- December, 2022 Introduction to over the wire website.
- App Development Session January 2023 Introduction to flutter development.
- BlockChain Session January, 2023 Intro to smart contracts, and introduction to SHA256 hashing
- Python Session- January, 2023
- GSoc awareness session

Club also organized a Game **Jam** and **Machine learning** Hackathon in **Advitya** (Technical Fest). A vertical of the club **GDSC which is affiliated with Google** conducted a workshop on web development and Machine Learning.

3.2 Fincom Club: FinCom club is dedicated to serve students who are interested in finance and want to gain financial knowledge. Some of the club sessions are mentioned below:

• Session on career development, profile building- A talk was conducted by Mr. Ketan Tiwari from Indian School of Business

- Session on Currency and Evaluations
- · Crypto-currencies and Blockchain Technologies-
- Investment Analysis, Private Equity, and VC Financing- Mr. Chinmay Das, Equity Analyst, Associate Head- Growth at Finletics in the session covered the fundamental and technical aspects of investment
- Quantitative Trading Session Mr. Rajib Ranjan Borah, Co-Founder and CEO of iRageCapital, conducted an interactive discussion about the various types of trading strategies

Club also organized a Competition- 'Freshers Trade Fest' in association with StockPe.

3.3 Automotive Club: Club organized a number of sessions to give knowledge in the domain of automotive and manufacturing to the Students of IIT Ropar, Below are some mentioned activities.

- Lecture Series on Electric Vehicles and Motors
- Participated in E-Baja, 2023
- Competitions 'Full Throttle', 'Hydro-Sprint' Organized in technical fest.





3.4 Robotics Club: The Robotics Club has organized a number of events, sessions and participated in national-level competitions. Below are some activities of the club:

- ISMP Session- introduced students to the world of robotics through demonstration of a robocar built with Arduino, motor driver and controlled by Bluetooth.
- · Basics of arduino
- Arduino applications with bluetooth module (HC-06)
- Motor and drivers
- Multibot detailed discussion on our project multibot and what upgrade we can do on the previous version
- · Session on Communication protocols and IoT
- Guest Session on embedded systems A session on embedded systems was taken by Mr. Laury, researcher at IIT Delhi, on 18th Oct 2022
- Participation in IIT kanpur Mathworks Minidrone Competition
- · Participation in IIT bombay techfest

- DronaAviation [Inter IIT Tech Meet IIT Kanpur 9th Rank against 21 IITs]
- Club also organized competitions in technical fest.



3.5 Zenith Club: Activities / Sessions held under the Zenith Club (A Astronomy & Astrophysics Club) are given below:

- Star gazing sessions:
 - On 19th November, Jupiter and Mars planets were clearly visible in the night sky. The club had encouraged freshers as well as other astronomy enthusiasts to click pictures and share the same on our recently made WhatsApp group.
 - On 14th December, we experienced the Geminids meteor shower. The newly joined members of the club were instructed on how to gaze at the stars such that they are more clearly visible and they can relish a better experience of the same.
- Published 4th edition of Astro Magazine: As we know that our club has a legacy of maintaining a magazine related to astronomy and astrophysics. Till date, the club has done immense research and has published the magazine in its best edition

possible. They did the same this time. They refreshed and revised all the data mentioned to the newest knowledge possible, added extra topics and made the magazine much more readable and enjoyable than the older editions.

• **Capturing Moon:** During this winter, they captured pictures of the moon through different gears available in the club. A huge participation was seen in these events. They also taught a few juniors on how to use a telescope and the basics of how to take photographs using it.



- Astrophotography: The sky is full of wonder and we can see multiple astronomical events each day, so the members of the club were encouraged to capture these events through their mobile so that everyone can appreciate these mesmerizing events. They encouraged and appreciated their event by adding them to our Instagram stories and posts
- **Zeitgeist Events:** In Zeitgeist 2023, Zenith organized two events, the astronomy quiz which was offline and Astrophotography which was an online event. They received good participation in these events.

3.6 Coding Club: The Coding Club organized a number of sessions on logic and coding languages. Club also qualified for ICPC Regionals. Organized sessions on DSA and internship and weekly sessions on programming are being held. The club organizes a number of competitions periodically to test and challenge student capabilities.



3.7 Aeromodelling Club: Aeromodelling Club is dedicated to students who are enthusiastic about aeromodelling and technology. The club organized a number of sessions as mentioned below:

- ISMP Session: -Glider Making
- Session 2: Fusion 360
- Session 3: -Aerodynamics
- BUILD 2.0 organized by FITT IIT Delhi

Club also organized events in Technical fest- 'Mission Rakshak'

- Ongoing Projects under Aeromodelling Club: At present, Aeromodelling Clubs is executing following projects:
- Two Drones:-Two set of drones for freshers to execute what they learnt in the session on drones and PID
- Aqua rocket:-Just a fun activity for freshers aim to complete it done by 18/04/23
- RC Ornithopter:-A ongoing project with material and dimension finalized.
- RC plane: A RC plane to compete in other colleges technical fest

4. BOARD OF CULTURAL AFFAIRS

4.1 Alankar Club: The Alankar (Music Club) has organized the following events:

• October, 2022

- Navratri Bhajan Performance.
- Garba Practice , collaboration with Dcypher.
- Jamming session at lhc circle
- Leadership Summit Performances and Jamming
- Diwali Singing Competition

November 2022

- IMSP Sessions.
- Jamming Night under ISMP.
- Unofficial jamming sessions.
- Vocals Session
- Drums Session
- Guitar Session
- Keyboard Session



December 2022

- Drum Session
- Vocals Session
- New Year Jamming
- New Equipments And Instruments added
- January 2023
- Inter IIT Cult meet
- Band Performance 1.2 Solo Singing, 6th and 7th position.



Republic Day Performances



Club Sessions

- Zeitgeist-
 - 1. War of Bands
 - 2. Duet Singing
 - 3. Solo singing



4.2 Arturo Club (Photography Club): Arturo Club of our Institute is the official photography club of the Institute which is dedicated to improvement of the photography skill of the student community of the Institute. Club is organizing various theory and practical sessions for the purpose. Various workshops and competitions are also conducted throughout the year on various occasions. A glimpse of the events organized by the Arturo Club in the year 2022-23 is detailed below:

4.2.1 ISMP

- 10 intro Sessions
- Speed Selfie Competition
- Photo Story Competition



4.2.2 Inter IIT held at IIT Madras

- 6th in Online Photography Competition
- 10th in Offline Photography Competition



4.2.3 Sessions

- In Total there were:
- 2 Open Sessions
- 7-8 Sessions (Other than those for Core team Members) were conducted on :
 - a. Handling of the Camera and a Basic Introduction to Camera Settings
 - b. In-Depth Camera Setting Hands-on Session
 - c. Composition Techniques
 - d. Panning Photography
 - e. Photography Involving High Shutter Speeds
 - f. Photo Editing Sessions
 - g. Outdoor Session

4.2.4 Outdoor Sessions

- 2 Sessions for Core-Team Members by Seniors
- Other than sessions the active members learn a lot from:
 - a. Unofficial sessions like photographing star trails or short unofficial sessions after Sorting Advitya photos.
 - b. We teach them different techniques and then try those out (Cameras were given to even 1st-year students to take to their room and take photos and learn).
 - c. Photographing at a lot of events, etc



4.2.5 Competitions

- Shoot at light
- Photo of the Month Competition (3 Editions till now)
- Competition during ISMP
- Competition during Zeitgeist

4.2.6 Zeitgeist

- Fotopedia Competition
- Equinox Competition
- Revista Competition
- TimeLine
- Photographs Exhibition
- Created Reels for many clubs in Zeitgeist.



- We took more than 75,000 Photographs in this tenure
- **4.3 Dcypher (The Dance) Club:** Dcypher (The Dance) Club is working to uplift the dance skills of the students of the Institute. Club organized the various dance sessions / competitions / workshops to carve the dance skills of the students. Some events organized under Dance Club are given below:
- 4.3.1 On 3rd October, 2022 open Garba session was organized in the basketball court under BOHA (Board of Hostel Affairs) in collaboration with Alankar, the music club.



4.3.2 Cultural performance in front of faculty quarters on the occasion of Dussehra was organized by Dance Club.



4.3.3 Events organized on Leadership Summit 2022: A Flash Mob and Bhangra were performed during the leadership Summit 2023.









4.3.4 Online reel making competition: An online reel making competition (Showstopper) was organized to boost up social media of D.Cypher from 16th -25th October, 2022. A total of 3407 accounts (+95.1%) and engaged 668 accounts on Instagram during this time period.



4.3.5 Diwali Celebrations: The Student Community celebrated the Diwali at Institute campus on 23rd October, 2022. The Dance Club organized a Solo / Duet dance competition (Firebolt) in front of the mess on the occasion of Diwali. This event was conducted under BOCA.



4.3.6 Dance Club prepared choreography and showed a cultural performance in front of freshers as part of our dance club showcase. The choreography included both western and Bhangra styles. This event came under BOCA and ISMP.



- **4.3.7 Dance Workshops:** An advance Bhagra and Western Dance workshops were conducted at IIT Ropar campus. Well renowned choreographer Mr. Naresh conducted the western dance workshop along with Mr. Sarabjit Singh, a professional Bhangra choreographer and founder of Rhythmic Bhangra and who performed the Bhangra in front of our Honorable PM Sh. Narendra Modi at Rajpath on 26th January 2022 by beating 104 teams from all over pan India.
- **4.3.8 Participation in Inter IIT Cultural meet 5.0:** Being a part of the IIT Ropar group, Dance club participated in the 5.0 edition of Inter IIT Cultural Meet held at IIT Madras. The Dance Club managed to secure 6th place in the Group dance event, despite not having the opportunity to do a final practice.



4.3.9 Republic day participation: Member Students of the dance club participated in the Republic Day on 26th January 2023.



- **4.3.10 Zeitgeist (Techo-Cultural) Fest-2023:** Three competitions were conducted by D.Cypher during the whole Zeitgeist
- **Groove-Z:** It was an online competition where we got entries from colleges outside. The purpose was to boost up the social media of D.Cypher.
- **Swaltza:** An offline solo/duet dance competition which saw a participation of 20 + and had an audience filling the Auditorium entirely.



Xuberance: Offline group dance competition had a participation of 7 teams and an Auditorium full of audience.



- **4.4 Epicure Club:** Various activities were conducted by the Epicure (The Cooking) Club of the Institute.
- **4.4.1** Millets Quiz: On directions of the Ministry of Education, the Epicure Club, considering the 2023 year as International year of Millets, conducted a quiz on millets on 16 October 2022.



4.4.2 Sessions during ISMP 2022: Epicure Club conducted various quizzes, fun activities, and food challenges throughout the sessions.



4.4.3 Participation in Inter IIT Cultural Meet at IIT Madras: A team (comprising Mr. Chamanjot and Aditya Kumar Jha) of Epicure Club participated in Inter IIT Cultural Meet held at IIT Madras and prepared matar kebab. Pea was the master ingredient.



- **4.5 Undekha-The Dramatic Club:** The dramatic (Undekha) club is working hard in all aspects to sharpen the dramatic skills of the student's community of the Institute. To accomplish the aim, the Dramatic Club is organizing various workshops, competitions and street plays.
- **4.5.1 Dramatic Workshop:** A professional director was hired to write and direct a street play (Nukkad Naatak) for Undekha. In this month-long workshop, we learnt many nuances of acting and completed an original street play.



4.5.2 Performance in Inter IIT: Dramatic club performed a street play "FAASLA" in inter IIT Cultural Meet 5.0 at IIT Madras. The Club We secured the bronze medal being third only to IIT Kharagpur and IIT BHU.



4.5.3 Short Films: Under the directions of the Ministry of Education, the Dramatic Club organized a short film under the banner of "Clean India movement" of "Swach Bharat Abhian". The film aimed at promoting cleanliness in India- "You - A step towards Clean India".



4.5.4 "AWW ACT!": A Comedic parody of club auditions held by POR holders. It was written and performed by freshers.



4.5.5 Skits and Mono act Performances:

- While celebrating the Navratras, the club performed a skit about the origin story of the Durga



- Topical mono act on transgenderism, followed by a comedic skit performed by club Ex-representative and ex-coordinator.



One skit with a patriotic message and one mono act on casteism on independence day



4.6 Glimpse of the Dramatic Club



- **4.5 Vibgyor (The Fine Arts) Club:** The Fine Arts club organized various events during the year. Following are the events executed under the ambit of the Fine Arts Club during the year 2022-23:
- **4.5.1 Diwali Competitions:** Rangoli Making and Dia Painting: Hostel wise competition conducted on Diwali 2022. It was a large participation from all hostels, including the ones in the Transit Campus. The Vibgyor Club provided the Rangoli colors, paints and Diyas. The teams were asked to make Rangolis in their hostel common area.



4.5.2 ISMP Sessions: The Vibgyor Club conducted the sessions on Origami and Lantern making, where we taught the students how to fold a simple origami rose, and a craft session where students were divided into teams and asked to come up with creative lantern ideas.



4.5.3 Sketching / Doodling: Students were asked to pair up and create a sketch together. One person would create half the sketch while the other created the other half.



4.5.4 Painting: The students were divided into gropus and aked to paint a scenery using acrylic paints.



- **4.5.5 Halloween Day Celebrations:** Vibgyor and its members decorated the LHC for the Halloween party that took place there. During the party, the club also has a face painting booth, where students could get their face painted as per their choice. The fashion event was also organized and judged by the Vibgyor team.
- **4.5.6 Republic Day Face Painting:** Students were asked to collect outside the utility block for face competition, They were paired to pint each other's face in a patriotic theme.
- **4.5.7** Session on Eye Sketching: The team conducted a session of sketching, where the students were taught how to sketch a realistic eye step by step. Following are the winner sketches:



4.5.8 Session on Scenery painting: A session was conducted on scenery painting using acrylic paints on canvas paper.



4.6 Zeitgeist Decoration of Campus and Participation in Zeitgeist Events: The Vibgyor Club saw an overwhelming participation in the Zeitgeist Events that comprised of:

5

:

:

- Face Painting (Visature)
- Live Sketching (Kalamkari)
- Cloth Painting (Arpillera)
- Doodle Art (Doodlie-Doo)
- Workshop on Sketching

- 24 Registrations
- 9 Registrations
- 28 Registrations
- 49 Registration
- **4.7 Participation in INTER IIT Cultural Meet held at IIT Madras:** The Vibgyor club participated in Inter IIT Cultural Meet held at IIT Madras with full enthusiasm and zeal. The club managed to participate in following 4 events and bagged the following positions/prizes:

- Placed 6th in Charcoal Painting.
- Placed 7th in Canvas Painting.

5. ZEITGEIST (Techno-Cultural Fest) 2023

5.1 Inauguration: The annual techno-cultural fest of IIT Ropar, Zeitgeist commenced with the inauguration ceremony honored by the chief guest Shri JM Balamurgan Ji, Principal Secretary, Defence Services Welfare and Principal Secretary, NRI Affairs.



5.2 **Cultural Events:** Had events from all the cultural and literary clubs of the college, along with two Fashion Events, which became the festival's highlights. The events were distributed in a wide range of both online and offline events spanning different categories like **Music, Dance, Drama, Poetry, Quizzing, Fashion, Food n Fun, Fine Arts, Photography, Videography & Literary Events.**



Mr. and Miss Zeitgeist

Aavritti (Kavi Sammelan 2.0)



Tamasha

Lashkara



Arpillera

Xuberance

5.3 Technical Events: Had events from all the technical clubs and departments of the college, along with two Robot prototype Events which in turn became one of the major highlights of the fest.

There were numerous types of events consisting of both online and offline events. The events covered a number of different categories of technical events ranging from Coding, Finance, Online gaming, Hackathons, Technical Quizzes, Treasure Hunts, Photo and Video editing, Robosoccer & Robowars, Drone race, Hovercrafts, Car and Boat racing and all the departmental events.







5.4 Lecture Series & Exhibitions Lecture Series

Multiple esteemed speakers had shared their valuable insights and experiences as a part of Zeitgeist 23 Lecture Series. The students found the sessions interactive and knowledgeable.

The speakers included:-

- **Utpal Chakroborty,** AI & Quantum Scientist, Chief Digital Officer-Allied Digital, Former Head of AI YES BANK



Dr. Hanif Qureshi, Joint Secretary, Ministry of Heavy Industries, IPS, Government of India



- Army Talk by Maj Gen Mandip, SM, VSM (Retd): President (Strategic Alliances), DroneAcharya Aerial Innovations Ltd. Distinguished Fellow, Centre for Military History & Conflict Studies United Service Institution of India.
- RAdm GS Jawanda (Retd), Former DG WESEE, Founder and CEO of Mystic Works
- Lt. Gen Anil Kapoor, AVSM, VSM (Retd), Former DG, EME & Advisor MRO, Management of Technology and Innovation & Qualified Masterclass Corporate Independent Director
- Suresh Prabhu, Former Railway Minister of India



- 5.5 Army Exhibition
- SIMA (Security and Innovation for Military Affairs): Organized a two day Army Innovations Display by HQ Western Command and ARTRAC in which various innovations and challenges faced by the Indian Army were displayed to students and faculty members.
- **TechWarriors (The Army Innovation Challenge):** The students and faculty members of IIT Ropar were given five innovative challenges to work on and propose a feasible solution.
5.6 Alumni Meet

Agam Bedi (2016 Batch), Deputy Commissioner of Income Tax. An interaction session for students was organized where the students got the insights about the preparation for UPSC exam by our esteemed alumnus.



5.7 Workshop: Following workshops were held during Zeitgeist 23-

- Music Mixing and Production
- **Workshop on Hindi poetry and ghazal writing** by Ravi Shankar and Swati Jha. Ravi Shankar is an expert in Urdu literature and creates amazing work in Urdu. Swati Jha is Hindi literature enthusiast and is well versed and fluent in Maithili. She is also a cofounder of Delhi based Maithili collective that aims at revival of Maithili language.
- Artificial Intelligence and Neural Network
- AR-VR
- **5.8 Techno School Program:** This is an event for school kids to get exposure to IIT, by giving an olympiad, making scientific projects and visiting IIT labs.
- **Open Olympiad:** Gave students from various colleges in India to compete with each other and get a chance to visit IIT Ropar.
- **Junior Scientist Competition:** Exhibition of the junior scientist competition was held in the auditorium, and all the students of IIT Ropar and guests visited and appreciated the students for making such projects. Dr Neeraj Goyal and Dr Ashwani Sharma judged the projects.
- **Techwalk:** All the students who registered for the open olympiad and junior scientist competition participated in the tech-walk where they visited Electrical, Mechanical and Metallurgical labs and had a session on artificial intelligence for students.

5.9 Website

We successfully developed the website for the annual techno-cultural fest of IIT Ropar, called Zeitgeist. The website can be accessed at https://zeitgeist.org.in/

The website showcases the event's details and attracts participants to register and attend the event. The team has ensured that the website has all the necessary features to make the event successful. The website was designed to be responsive, ensuring that it is accessible and functional across all devices, including desktops, laptops, tablets, and mobile phones.

This ensures that all participants can easily access the website and register for events regardless of their device.

The campus ambassador page provides all the necessary details for interested students to become ambassadors for Zeitgeist.

Link: https://ca.zeitgeist.org.in/

The startup conclave and TSP websites provide detailed information on the events and activities related to the respective eventsTSP Link:https://advitiya-iitrpr.github.io/tsp/ Startup Conclave Link: https://advitiya-iitrpr.github.io/startup-conclave/



5.10 Entertainment Nights / Pronite

- The shooting of the finale of Awaz Punjab Di season 9 and performance by several previous winners of the show
- Band Performance by Aftr5ive
- Music Night by Shivam Chauhan
- Band performance by The Northern Waves
- Final Night by Sunanda Sharma
- EDM night by Mr. Singh
- Influencer Performance by Elina Chauhan
- Flag Act Special Tribute to India Vande Mataram Tiranga





Final Night by Sunanda Sharma

Influencer Performance



Flag Act - Vande Mataram Tiranga



Music Night by Shivam Chauhan



Band performance

Awaz Punjab Di

6. NCC & NSS

-

Drug abuse rally cum small workshop in the labour camp of IIT Ropar



- Conducting a quiz on vigilance awareness
- Making the herbal garden on by own with the help of horticulture workers (under work)
- Conducting quizzes on upholding integrity, and unity of the nation on the occasion of national unity day

7. Snehita Wellbeing Cell

Snehita – Well Being Cell has been set up with the objective of providing assistance to the IIT Ropar fraternity for overall psychological well being, with a major focus to cater the mental health care and counseling needs of our individuals. With the intent to address and to help with resolving emotional and psychological issues of the individuals is the core aim of this cell. This cell also encourages the students to understand themselves better and to enable them in solving their personal, emotional as well as psychological problems and also to facilitate positive changes in their overall growth and behavior.

Counselling services at IIT Ropar is a part of Student Support Service which comes under Student Affairs Section. Currently, we have two faculty advisors and a one full time Institute Counselor who is providing his services to the Institute. The cell has been providing services like individual counseling on various psychological issues like academic anxiety, adjustment problems, depressive reactions, sleep difficulties, relationship concerns, confidence building, problem solving, decision making, unhealthy internet use, etc. Additionally, this cell also conducts orientation sessions for new PG students at the time of the Induction Program and various informative seminars on general mental health issues with the purpose of creating awareness among the Institute population.

Also, we have a group of Student Volunteers known as our Snehita Buddies who are actively engaged in helping us in reaching out to the unreached and in conducting various promotional/educational activities on mental health.

With the mix of reactive and proactive approach, Snehita Wellbeing Cell has proactively taken up the initiative of promoting the information & knowledge within the students, staff and faculty on various healthy issues in the form of online/offline talks, poster competitions, etc. So far we have conducted the following activities: Resilience, Creative Play - Infusion for Motivation, Dealing with Generalized Anxiety, Relaxation and Health, Engineering of Mind, Unlearning Limiting Beliefs, Power of Habits, Memory and Concentration, Expectation Vs Reality, Power of Happiness, etc.

Торіс	Dates	Speaker
Engineering of Mind 2	07-06-2022	Mr. Varun Upadhayay
Mental Wellbeing for Students	15-10 2022	Mr. Shobit Naraian Agarwal
Thrive at College	30-10-2022	Mr. Deepak Kumar
Managing Time Effectively	05-11-2022	Dr. Satyam Agarwal
Way to Happiness	12-11-2022	Dr. Satyam Agarwal
Dealing with Stress	17-01-2023	Mr. Deepak Kumar

In addition to the above in the year of 2022-2023 following activities has been conducted under Snehita Wellbeing Cell –

8. Institute Student Mentorship Programme – 2022

Institute Student Mentorship Program (ISMP) is a student initiative of IIT Ropar, which aims to provide a comprehensive and in-depth knowledge to freshmen on critical issues like academics, co and extracurricular activities and how to bring about an optimum balance between them which proves decisive in shaping an individual's contentment levels in the institute.

8.1 PG Activities: The activities scheduled help students make friends and interact with everyone. Following major activities were conducted during ISMP – 2022 (PG):

- Induction program movie night was displayed.
- **Department Orientation:** The new PG students were introduced to their faculty and professors. They were also briefed about their course structure. During ISMP a fun game activity called Skribble was conducted. The day ended with the **Campus Tour** coordinated by Mentors selected.
- **Yoga session:** Sh. Prashant Mittal and Mrs. Kirti Sharma conducted the Yoga Session on the third day of ISMP-2022 (PG). Students were introduced with different yoga Asanas and surya namaskar. Various fund activities / games were conducted on this day:



UG Activities: The ISMP started with the orientation program by the Director, IIT Ropar. Following various ISMP activities, orientation and induction program took place. The program was spread across 15 days.



8.2 Mentor-Mentee Interaction: To know the college life and clear the doubts of fresher's ISMP-22 organized a small mentor mentee interaction with a huge participation from the students as well as the ISMP Core team.



8.3 Warden Address: The freshers with the warden addressal in the respective hostels. It was taken by Dr. Ravikant, Chief Warden in which instructions about hostels, their rules and regulations were discussed. Followed by that there were two sessions from "Enactus" and "SWE", two independent bodies of IIT Ropar.



8.4 Welcome to the Freshers: In this session, freshmen were introduced to the student council members and club representatives.



8.5 Halloween Night: On 30th October ISMP organized a Halloween Night event for the Freshers. Different competitions, treats, DJ Night were arranged and the whole event was full of Hallow's Eve. Catching the Glimpse of decoration and Event, here are some of them:



8.6 Unity Run: In collaboration with ODAC & Fitness Club, ISMP celebrated the 'Rashtriya Ekta Diwas (National Unity Day)', on 31st October, 2022, the Birth Anniversary of Sardar Vallabhbhai Patel. A 'Unity Run' of 4 KMs within the Campus was organized.



8.7 Other Club Activities: Many other activities were organized by various clubs / boards. Campus tour ISMP Induction Program 2022.



8.8 The Photo-story Competition

The Arturo (Photography) club, organized an exciting competition under ISMP for the Freshers '22 i.e. " THE PHOTOSTORY COMPETITION i.e. series of photographs and arrangements of photos to depict a story"



8.9 Bhangra: Bhangra session conducted by Dcypher The Dance Club team during the ISMP Induction Program 2022.



8.10 Workshops conducted during ISMP-2022

- Boundaries Workshop Conducted by Coach Pallavi Barnwal during the ISMP 2022.
- Human Value Talk: Human Value Talk conducted by Dr. Shirish Paripatyadar during ISMP Induction Program 2022.



8.11 Cultural Night: To end the ISMP activities we held a jamming night and on the last day a cultural night where various clubs performed.





9.1 Student Residency Status

Undergraduate Boys			
First Year (2022)	311	Main Campus	
Preparatory course	6	Main Campus	
Second Year (2021)	287	Main Campus	
Third Year (2020)	274	Main Campus	
Fourth Year (2019)	273	Main Campus	
	Undergraduate (Girls	
First Year (2022)	79	Main Campus	
Preparatory course	03	Main Campus	
Second Year (2021)	72	Main Campus	
Third Year (2020)	72	Main Campus	
Fourth Year (2019)	54	Main Campus	
	Undergraduate Bac	k-Loggers	
2015	01	Main Campus	
2016	01	Main Campus	
2017	02	Main Campus	
2018	18	Main Campus	
Research Scholar			
Boys	356		
Girls	202		
M.Tech/M.Sc./M.S.			
Boys	326		
Girls	91		
Transit Campus Hostels (Mercury, Venus, Neptune & Jupiter)			
Main Campus Hostels (Satluj, Beas, Chenab, Brahmaputra Boys, Brahmaputra Girls & Raavi)			
Total Hostel Residents = 2428 (Boys = 1853, Girls = 575)			

9.2 Dandiya Night: Dandiya Night was celebrated at the Indian Institute of Technology (IIT) Ropar, where students, faculty, and staff members came together to participate in the festivities. The event was held during the Navratri festival and was marked by vibrant music, dance, and colorful traditional attire. Dandiya and Garba dance forms were the highlights of the evening, and students showcased their skills with great zeal. The event was a testament to the cultural richness of IIT Ropar and is eagerly awaited every year.



9.3 Diwali Celebration: Diwali is a festival of lights celebrated all over India, and it was also celebrated at the Indian Institute of Technology (IIT) Ropar with great enthusiasm. The festival marks the victory of good over evil and is celebrated with lighting lamps, bursting crackers, and distributing sweets. At IIT Ropar, students, faculty, and staff members came together to celebrate Diwali by decorating the campus with lights, rangolis, and diyas. The evening was marked with cultural events, including dance performances, music, and traditional food. The festival brings together people from diverse backgrounds and cultures and fosters a sense of community and camaraderie among the members of the institute. There was a special dinner prepared for the students in the mess on the occasion of the Diwali.



9.4 Ganesh Chaturthi: Ganesh Chaturthi is a popular festival in India, and it is celebrated with great enthusiasm at the Indian Institute of Technology (IIT) Ropar. The festival marks the birth of Lord Ganesha, the elephant-headed God of wisdom and prosperity. The celebration at IIT Ropar was marked by the installation of an idol of Lord Ganesha on campus, followed by various cultural events, including music, dance, and traditional food. Students, faculty, and staff members came together to offer prayers and seek the blessings of Lord Ganesha. The festival fosters a sense of unity and cultural harmony among the members of the institute, and

the celebrations continue for several days before the idol is immersed in water. There was a special dinner prepared for the students in the mess on the occasion of the Ganesh Chaturthi.



9.5 Cultural Night: Cult Night is an annual cultural extravaganza organized by the Indian Institute of Technology (IIT) Ropar. The event is a platform for students to showcase their talent in various cultural fields such as dance, music, drama, and fine arts. It is a highly anticipated event that witnesses the participation of students from different institutes and universities. The event features a variety of performances, including solo and group performances, and culminates in a grand finale where the winners are announced. The event is organized by the students themselves with support from the institute's administration and is a testimony to the institute's commitment to promoting and nurturing cultural talent. Cult Night is not only an opportunity for students to showcase their skills but also serves as a platform for cultural exchange and interaction among the student community.



9.6 Holi Celebration: Holi was celebrated on the campus with music and color. There was a bonfire organized on the day of Holika Dahan which was accompanied by the open mic poetry event and music jamming session.



FACILITIES witt ropar





1. INTRODUCTION

Library of IIT Ropar is an invaluable source for various knowledge and learning, which plays a fundamental role in support of academic and research activities at the institute. The objective of the library is to provide users with the required information resources and support by offering latest services which are integrated 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

One of the most important roles of IIT's Ropar library is collection building, which involves carefully selecting the standard learning materials that suits to institute's academic and research community needs.

The Library has a collection development policy in place to acquire the most up-to-date books, journals and reports and other sources of reference and information in Science, Engineering, Technology, Humanities and Social Sciences as well as general reading resources and this policy has been followed in the course of the financial year 2022-23. The Library has a large print collection with 22,700+ documents. The print collection includes Dictionary, Manual, Encyclopedia, Reports of Research Monographs, Multi-volume Reference Sources and other books related to thought process. In addition, the Library has a large collection of Theses, Dissertations, Annual Reports, Standards and CD/DVDs in the field of Science, Engineering, technology, Humanities and social sciences.

The total number of books acquired by the library in 2022-23 is 2546. The total number of books received gratis is 84. Here is a brief overview of the books acquired in 2022-23.



3. Circulation and Consultation Service

The library circulation operations have been automated using RFID based LIBSYS-7 software. During the academic year 2022-23 total 21961 documents were issued/consulted at self-service Kiosk/staff station to all categories of users. 59103 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 2022-23.



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 academic and 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 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:

SI. No.	List of Electronic Resources (E- Journals/Databases/Tools)	Usage Statistics (No. of full-text downloads/Views/Reports)
1.	Acta Arithmetica	133
2.	American Chemical Society (ACS) Journals	241078
3.	American Institute of Physics (AIP) Journals	23791
4.	Annals of Mathematics (Princeton University)	133
5.	Annual Review (AR)	2249
6.	American Physical Society (APS) Journals	16305
7.	American Society of Civil Engineers (ASCE) Library	2182
8.	American Society of Mechanical Engineers (ASME) Journals	4519

Electronic Journals/Databases Subscription:

9.	Association for Computing Machinery (ACM) Digital Library	1321	
10.	Cambridge University Press (CUP) selected Journals	4573	
11.	Elsevier's ScienceDirect Journals	336470	
12.	Economic & Political Weekly	NA	
13.	Emerald CFTI Collection	5849	
14.	IEL Online (IEEE Journals)	181286	
15.	Institute of Physics Science (IoP) Journals	27004	
16.	JSTOR	10053	
17.	Optical Society of America (OSA) Journals	4914	
18.	Oxford University Press (OUP) Journals	NA	
19.	Proceedings of the National Academy of Sciences (PNAS)	8634	
20.	Project Muse	362	
21.	Royal Society of Chemistry (RSC) Journals	121561	
22.	Royal Society Proceedings A: Mathematical, Physical and Engineering Sciences	1028	
23.	Science Online	2993	
24.	Springer Journals	128955	
25.	Springer Nature Journals	4769	
26.	Nature Main Title	17735	
27.	Taylor & Francis Journals	52405	
28.	Thieme Chemistry Package	1220	
39.	Wiley selected Journals	46349	
	Databases/Software Tools		
1.	Grammarly Tool	-	
2.	Institute for Studies in Industrial Development (ISID)	NA	
3.	MathSciNet	8781	
4.	Prowess IQ	860	
5.	SciFinder Scholar	19093	
6.	Scopus	145585	
7.	States of India	2541	
8.	Turnitin (Anti-Plagiarism) Tool	6218	
9.	Web of Science	19258	

NA- Not Available

Print Journals/Magazines:

SI. No.	Title	
1.	American Scientist	
2.	National Geographic	
3.	New Scientist	
4.	Reader's Digest	
5.	Time	



5.1 Journal Articles/ Conference Papers/ Invited Talks/Lectures/Other

Dr. Tarvinder Singh Handa

- 1. **Singh, T.,** & Singh, J. (2022). Understanding Users' Attitude towards Information Technology Application in University Libraries. DESIDOC Journal of Library & Information Technology, 42(2), pp. 73-79.
- Sohal, G.S., Handa, T.S., & Singh, J. (2022) Digitization of Manuscripts, Holy Granths, Rare Books, Paintings and Photographs: Initiatives undertaken in Punjab. In S. Negi, A. K. Kumar & Tanvir Singh (Eds.), Conference Proceedings of International Multidisciplinary Conference (pp. 226-236). International Institute of Organized Research (I2OR), India.
- 3. Delivered an Invited Lecture on National Librarians' Day in memory of 130th birth anniversary of Padma Shri Dr. S.R. Rangnathan organized by Readers Club, Goswami Ganesh Dutta S.D. College, Chandigarh on 12th August, 2022.



SUMMARY OF ACCOUNTS



RECEIPT AND PAYMENT ACCOUNT OF INDIAN INSTITUTE OF TECHNOLOGY ROPAR FOR THE FINANCIAL YEAR 2022-23

RECEIPT	Amount (in Rs.)	PAYMENT	Amount (in Rs.)
	31.03.2023		31.03.2023
I. Opening Balances		I. Expenses	
a) Cash Balance	0	a) Establishment Expenses	599628586
b) Bank Balance		b) Academic Expenses	300132940
i) In Current accounts	10866485	c) Administrartive Expenses	200163641
ii) In deposit accounts (FDR)	0	d) Transportation Expenses	6521584
iii) Savings accounts (Institute)	142734221	e) Repair & Maintenance	75579758
iv) Savings accounts (R & D)	41497102	f) Prior Period Expenses	0
		g) Finance Cost	210178043
II. Grant-in-Aid		II. Payment against Earmarked/Endowmnet Funds	0
- on Revenue Account	1836910163		
- on Capital Account	208600000		
- Adjustment	6511639		
III. Academic Receipts	203049328	III. Payment against Sponsored Projects/Schemes	274561534
IV. Receipt against Earmarked/Endowmnet Funds		IV. Payment against Sponsored Fellowships and Scholarships	62735118
V. Receipt against Sponsored Projects/Schemes	229134118	V. Investment and Deposits made	
		(a) Out of Earmarked/Endowmnet Funds	0
VI. Receipt against Sponsored Fellowships and Scholarships	42546188	(a) Out of Own Funds (Investments - Others)	0
VII. Income on Investments from		VI. Term Deposits with Scheduled Banks	
a) Earmaked/Endowmnet Funds	0	FDR (Institute)	1519949434
b) Other Investments	0	FDR (R&D)	368500000
		VII. Expenditure on Fixed Assets and Capital Works in Progress	
VIII. Interest received on		a) Fixed Assets	128866787
a) FDR	42649850	b) Capital Work in Progress	74549927

TOTAL	4521170520	TOTAL	4521170520
XIII. Miscellaneous Receipts including Statutory Receipts	66763821	iv) Savings accounts (R & D)	27060494
- HEFA TERM LOAN	4675725	iii) Savings accounts (Institute)	107587412
XII. Deposits and Advances	5795285	ii) In deposit accounts (FDR)	0
		i) In Current accounts	13115736
XI. Other Income (including Prior Period Income)	14068020	b) Bank Balance	
FDR (R&D)	380488565	a) Cash Balance	0
FDR (Institute)	1263303076	XII. Closing Balances	
X. Term Deposits with Scheduled Banks Encashed			
		XI. Other Payments	0
Endowment Fund	0		
IX. Investments Encashed		X. Deposits and Advances	6438986
		(Projects)	
		IX. Refunds of Grants	15643666
d) Saving & FDR (R&D)	19002243		
c) Savings Bank Accounts	2554150	VIII. Other Payments including statutory payments	529956873
b) Loans and Advances	20541		



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