



# ANNUAL REPORT 2022-23



**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

ROORKEE, UTTARAKHAND, INDIA - 247667



# Annual Report

## 2022-2023



INDIAN INSTITUTE OF TECHNOLOGY  
ROORKEE



Visitor

Her Excellency Mrs. Droupadi Murmu  
President of India

Chairman, IIT Council

Hon'ble Shri Dharmendra Pradhan  
Minister of Education, Government of India

Chairman, Board of Governors

Padma Shri Dr. B.V.R. Mohan Reddy

Director

Prof. Ajit K. Chaturvedi (upto forenoon 12.10.2022)  
Prof. Kamal Kishore Pant (w.e.f. afternoon 12.10.2022)

Deputy Director

Prof. M. Parida (upto 19.09.2022)  
Prof. Udai Pratap Singh (w.e.f. 12.12.2022)



# Annual Report: At a Glance

2022-23

## Departments / Centres / Units

Academic Departments / Centres	23
Centres of Excellence	03
Service Centres	07
Other Units	06

## Grants

Amount in Lakhs

MHRD	64864.81
Others	29601.63
• CSIR	41.63
• Research and Consultancy	29560.00
Total	94466.44

## Student Admitted

B.Tech./B.Arch./ IDD	1355
PG Degree	949
Research Scholars	579
Total	2883

## Student Strength

B.Tech./B.Arch./ IDD	5257
PG Degree	1601
Research Scholars	2877
Total	9735

## No. of Degrees Awarded

B.Tech./B.Arch.	1005
PG Degree/ PG Diploma	639
Ph.D.	379
Total	2023

## Faculty / Staff Strength

Faculty in Position	557
Scientist / Others in Position	
Non-Teaching Staff in Position	
• Group A	91
• Others	647

## Research Papers

Journals	11972
Conference / Symposia	492
Total	1991

## Consultancy Projects

Number of New Projects	780
Outlay (.... of Rs.)	6864.80

## Sponsored Research Projects

Number of New Projects	201
Outlay (.... of Rs.)	10102.13

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## Vision

To attain global level of excellence in education and to create a sustainable and equitable society through innovative research in science and technology.



## Mission

To create an environment that shall foster the growth of intellectually capable, innovative and entrepreneurial professionals, who shall contribute to the growth of Science and Technology in partnership with industry and develop and harness it for the welfare of the nation and mankind.

---

95th Senate – “There should be a connect between Education, Research, Industry and Society.”

“An Equitable Society with Gender Diversity should invariably be focused in the vision of the Institute.”

# Opening Remarks



The year 2022 was a milestone in the history of IIT Roorkee. We celebrated our glorious 175 years of existence. The celebrations for the 175th Year began on November 25th, 2021, and culminated on November 24th, 2022. As part of the 175th-year celebrations, the institute has conducted a plethora of activities in all domains and surroundings. A number of Fellowships / Internships / Incubation facilitation schemes had been taken up as a part of the 175 years celebration. As a part of the 175-year Celebration, a Calendar for 2022 – Capturing 175 years (1847-2022) of the institutional journey of imparting technical education and contributions to the development of society was released. A commemorative Coin, Stamp, and Coffee Table Book have been released on the occasion of 175 years of IIT Roorkee.

IIT Roorkee has emerged at Rank #5 in the National Institutional Ranking Framework (NIRF) India Rankings: Engineering for 2023 compared to Rank #6 in the last year. Department of Architecture & Planning, IIT Roorkee has emerged at Rank #1 in the National Institutional Ranking Framework (NIRF) Rankings for 2023. This is the third consecutive time the Department of Architecture & Planning, IIT Roorkee has been ranked #1 in the NIRF India ranking.

IIT Roorkee has been conferred the CII Innovation Award 2022 as the most Innovative Technical Institution in India along with the Grand Jury Award. IIT Roorkee has received this award for the third consecutive year.

The convocation for the year 2022 was held physically, in April wherein 2022 students were conferred degrees. In July convocation 2023 was held wherein degrees have been conferred to 1916 students, out of which 1077 are UG, 685 are M.Tech, M.Arch, MBA, M. Design, MIM, MURP, M.Sc., PG Diplomas, and 154 are Ph.Ds.

IIT Roorkee is the first technical institute in the country to have completely redesigned its curriculum in alignment with NEP 2020. The curriculum revision philosophy is based on STEPS (Science, technology, Entrepreneurship, project-based Education and Societal Connect). The key features include a multidisciplinary and holistic curriculum with a focus on flexibility, employability, conceptual understanding, ethics and constitutional values, advancement in science and technology, creative & critical thinking, internationalization, respect for diversity, societal connect, inclusive admission process, digitalization, and quality research. The institute celebrates the successful three years of NEP 2020.

In persuasion of the regular Academic and R&D activities, many centers of interdisciplinary and cutting-edge technologies have been established at IIT Roorkee. Center for Photonics and



Quantum Communication Technology (CPQCT), the DRDO Industry Academia-Centre of Excellence, the International Centre of Excellence for Dams, the Centre of Space Science & Technology, and ISRO-IITR Space Technology Cell etc. have been established. Two new labs namely Renewable Grid Integration Laboratory and Green Hydrogen Laboratory at the Department of Hydro and Renewable Energy were inaugurated to meet India's Energy Independence and Net Zero Carbon Energy Systems Goals.

IIT Roorkee has also signed Memorandums of Understanding (MoUs) for promoting excellence among students, faculty, and departments. These MoUs endorse Financial Aid, MCM Scholarships, Gold Medals & Cash Prizes for students of IIT Roorkee. IIT Roorkee has started a M.Tech program in Semiconductor Technology which will be jointly offered by the Department of Electronics and Communication Engineering and the Department of Physics at IIT Roorkee.

IIT Roorkee continues to march ahead in the areas of sponsored research and industrial consultancy and the number of projects have increased significantly. IIT Roorkee has successfully created a dynamic ecosystem and has fostered the entrepreneurship culture in the campus. The number of patents, the number of companies incubated in the campus, faculty-led entrepreneurship, associations with MSMEs, tie-ups with local industries, and technology transfers played a major role in the institute.

Our students are our strength, and they continue to excel in academics, sports and activities for societal benefit. Internationalization and opening up new opportunities with other countries is our forte. IIT Roorkee has joint degrees with many international institutes. The number of International students on campus is also one of the highest among technical institutes. Many new schemes to motivate and encourage girl students for example Golden Girl and SAKUNTALA have been initiated to attract and inspire girls to join the institute.

IIT Roorkee marches ahead with its strong historical legacy of excellence and continues to be at the pinnacle of success. We humbly acknowledge the financial support of Rs.648.00 crores from the Ministry and Education and reaffirm our belief and commitment towards the growth of the nation.

**Prof. K.K. Pant**

Director, IIT Roorkee

August 2023



# Board of Governors

## Chairman

### Padma Shri Dr. B.V.R. Mohan Reddy

Chairperson, Board of Governors, IIT Roorkee &  
Executive Chairman, Cyient Limited, Hyderabad

**Chairperson**

## Two Nominees of State Government

### Prof. Narendra Singh

S/o Late Shri Harish Chandra, Distt. Haridwar

**Member**

### Principal Secretary to Government of Haryana

Technical Education Department, Chandigarh

**Member**

## Four Nominees of the Council of IITs

### Additional Secretary (TE)

Ministry of Education, Government of India  
Department of Higher Education, New Delhi

**Member**

### Prof. (Retd.) H.C. Pokhriyal

University of Delhi

**Member**

### Padma Bhushan & Padam Shri Dr. Anil P. Joshi

Himalayan Environmental Studies  
& Conservation Organization, Dehradun (Uttarakhand)

**Member**

### Sri Ashwani Lohani

Ex-Chairman & Managing Director, Air India, New Delhi

**Member**

## Director (Ex-Officio)

### Prof. Ajit K. Chaturvedi

Director, Indian Institute of Technology Roorkee upto 12.10.2022

**Member**

### Prof. K.K. Pant

Director, Indian Institute of Technology Roorkee w.e.f. 12.10.2022

**Member**

## Two Senate Nominees

### Prof. C.S.P Ojha

Department of Civil Engineering, Indian Institute of Technology Roorkee

**Member**

### Prof. U.P. Singh

Department of Chemistry, Indian Institute of Technology Roorkee

**Member**

## Special Invitee

### Prof. M. Parida (Permanent Invitee) upto 19.09.2022

Deputy Director, Indian Institute of Technology Roorkee

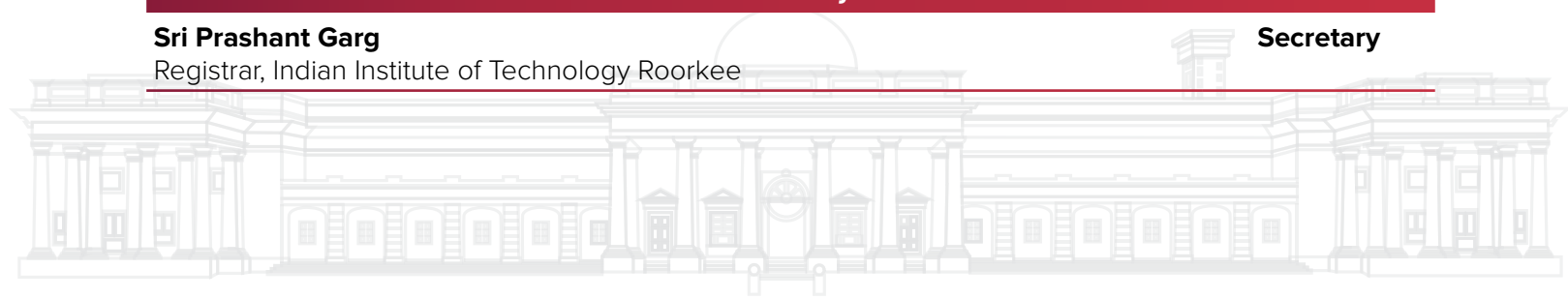
**Member**

## Secretary

### Sri Prashant Garg

Registrar, Indian Institute of Technology Roorkee

**Secretary**



# Academic Affairs

The scope of IIT Roorkee continues to grow in fields that are important to undergraduate and graduate education. Numerous initiatives, grouped by academic area, are available to support students by providing them with expertise inspiration, and honor ceremonies. Among them are the following:

## a) Workshop on UG Academic Curriculum Revision :

In line with NEP 2020 and with the aim to make students future ready with their global aspirations, the institute conducted a two days' workshop to revamp its UG Curriculum. The workshop included external experts with global repute representing industries, educational institutes/ organizations, alumni, social communities, policy makers; in addition to faculty members and students of the IITR



**b) Science Day:** On the occasion of the National Science Day, the institute organized various events in the month of Jan 2023 for the school children of Roorkee such as Quiz Competition, Interactive Idea Competition, Science Exhibition and open house. To spread awareness about G20, a special round was conducted in the Quiz competition. Later, the annual Science Day lecture was delivered by the Chief Guest Dr. V. K. Saraswat, member NITI Aayaog, Chancellor of Jawaharlal Nehru University on Feb 28, 2023.



**c) Award Distribution Ceremony- Letter of Dean's Appreciation to UG Students :** Award Distribution Ceremony to encourage UG students for obtaining increase in CGPA as per academic regulations at IITR.

**G20**  
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

**ACADEMIC AFFAIRS OFFICE**  
**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

**Award Distribution Ceremony**  
**Letter of Dean's Appreciation**  
**to**  
**UG Students**

**1<sup>st</sup> March 2023**  
**6:00 P.M. Onwards**

Venue: 103, APJ Abdul Kalam Block  
INSTITUTE LECTURE HALL & Conference Complex

**Prof. K. K. Pant**  
Director, IIT Roorkee

**Prof. A. K. Sharma**  
Dean of Academic Affairs



**d) Institute Research Day (Mar 13-14, 2023):**

Institute Research Day was celebrated for two days by conducting Poster Competition, Guest Lecture, Brain Storming Session related to G20 theme i.e. 'R&D Transformation: The Sustainability Dimension' and Award Distribution Ceremony thereon.



With an increase in undergraduate (UG) and postgraduate (PG) intake, the student population has undergone significant changes in the last 10 years. In 2012-13, the number of UG students on-roll was 4304 while the number of PG students was 2137. This changed to 4122 and 1606 for UG and PG students, respectively in 2018-19. Presently, the Institute has about 9735 students of which 5257 are UG and 1601 are PG. In order to continue imparting high-quality and holistic education to the much larger student populace, the Institute continues to modify and evolve processes which can effectively address the changing situations. The PhD student strength has increased in leaps and bounds in the last 10 years. From 1342 PhD students in 2012-13, the number increased to 2877 in 2022-23. Number of PhDs awarded in the Convocation 2023 is 379. Here are the details of few students that performed exceptionally well:

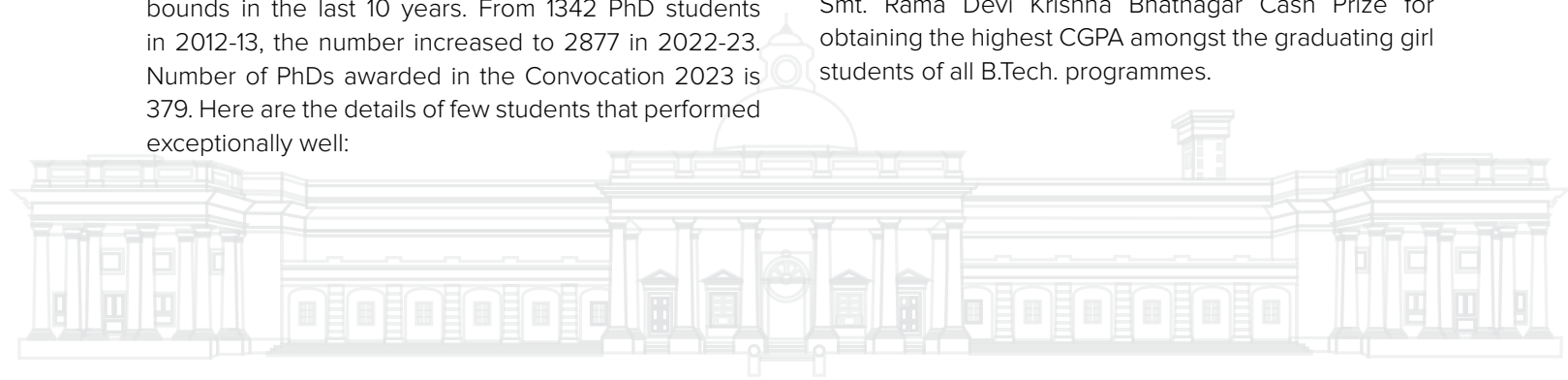
**Aryan Jain**, B.Tech. Computer Science & Engineering received the following awards: President Gold Medal for securing the highest CGPA amongst the B.Tech./ B.Arch./ IDD/ Int. M.Sc./ Int. M.Tech. graduating students admitted through JEE (Advanced). Dr. A.N. Khosla Medal for securing the highest CGPA amongst the graduating B.Tech. students. Rai Bahadur Sohan Lal Bhatia Cash Prize for securing the highest CGPA amongst the graduating students of B. Tech. (Computer Science and Engineering).

**Atharva Karanjgaokar**, B.Tech. Mechanical Engineering received Director Gold Medal for the best all-round performance amongst the B.Tech./ B.Arch./ IDD/ Int. M.Sc./ Int. M. Tech. graduating students admitted through JEE (Advanced).

**Kavya Saxena**, B.Tech. Production and Industrial Engineering received the following awards: The President of India Dr. Shankar Dayal Sharma Gold Medal for the excellence in the field of Social Service amongst graduating UG/PG students. Anand Kumar Jain Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Production and Industrial Engineering). Best Project Award for the best project amongst the graduating B.Tech. students of Department of Mechanical and Industrial Engineering.

**Mohit Kumar**, IDD-B.Tech. (Computer Science and Engineering) and M.Tech. (Computer Science and Engineering) received the following awards: Institute Silver Medal for securing the second highest CGPA amongst the B.Tech./ B.Arch./ IDD/ Int. M.Sc./ Int. M.Tech. graduating students admitted through JEE (Advanced). Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Computer Science and Engineering.

**Prerna Kumar**, B.Tech. (Computer Science and Engineering) received the following awards: Institute Bronze Medal for securing the third highest CGPA amongst the B.Tech./ B.Arch./ IDD/ Int. M.Sc./ Int. M.Tech. graduating students admitted through JEE (Advanced). Smt. Rama Devi Krishna Bhatnagar Cash Prize for obtaining the highest CGPA amongst the graduating girl students of all B.Tech. programmes.



## Awards and Scholarships offered to Students in 2022

The following awards & scholarships have been distributed to the students across various programmes of the institute:

- Total of 156 awards are distributed among the graduating students during Convocation-2022.
- Total of 76 awards are distributed among other than graduating students.
- Total 81 SC & ST students are benefitted under the Institute Free Messing Scheme and 158 SC & ST students through National Scholarship Portal.
- Total 805 Merit Cum Means (MCM) Scholarships are distributed among students with lack of means, out of which 671 students are benefitted from institute MCM and 134 students are benefitted from donor sponsored MCM.
- Total 1376 students are benefitted under the Institute Tuition Fee Waiver Scheme.
- Total 80 students are benefitted from INSPIRE SHE Scheme.
- Total 319 students are provided scholarships from various central, state, public sector and private organizations.

The detailed list of medals & awards receipts is provided in Appendix.

## New Academic Programs, Centers:

In persuasion of the regular Academic and R&D activities, IIT Roorkee has launched some new programs, schemes and set up Centres of Excellence for strengthening and diversifying the academic activities. The five-year BS-MS programs have been introduced at the UG level with an exit option after four years with BS. This program will replace the existing IMS programs in Physics, Economics, Mathematics.

At PG level, specialized M.Tech. program in Electric Vehicle Technology has been started in Electrical Engineering Department and M.Tech. in Drinking Water and Sanitation in Water Resources Development and Management Department. The EMBA program in Department of Management Studies has started from the session 2022-23. Ph.D. Programs have been introduced in department of Design and the Mehta Family School of Data Science and Artificial Intelligence.

Institute has initiated a scheme named SAKUNTALA (Scheme for Aspirants of Knowledge under talent Advancement) Fellowship, which is a special scheme for female students to enroll in our PhD programs. Through this fellowship program, female students of the centrally funded technical institutes (CFTIs) who are now pursuing Engineering courses, or have graduated already, will be able to apply for admission at IIT Roorkee PhD programs starting with the first admission cycle of the year 2022 (Autumn Semester). The students admitted under this fellowship are provided with the same fellowship amount and all other similar facilities which are provided under the regular Institute Assistantship scheme.

Center for Photonics and Quantum Communication Technology (CPQCT), at IIT Roorkee has been established to carry out frontier research in photonics and quantum technologies. The center will be developing technologies in the area of Photonic Components and Devices for telecommunication, sensing, and strategic systems, tools and technologies for quantum communication, quantum computing and quantum simulations. The center also aims at creating skilled manpower required for implementation and advancement of these technologies in industry and academia in India, by running relevant academic programs.



## DRDO Industry Academia-Centre of Excellence (DIA-CoE)

The Ministry of Defense has approved the DRDO Industry Academia-Centre of Excellence at IIT Roorkee to facilitate and undertake multidisciplinary directed basic and applied research in the research verticals i.e., smart Infrastructure and hardened structures for defense application, energy storage devices, landslide, snow and avalanche studies, pulsed laser and specialty fiber, shock and detonics, thermal management. DIA-CoE IITR will emerge as the Centre of Excellence by conducting directed research in critical & futuristic advanced technology areas for defense and security and will endeavor to become world leader in identified areas of R & D. The center will facilitate the collaboration between faculties at, startups and other related institutes to facilitate research on advanced technologies.

For JEE advanced 2022, IIT Roorkee zone conducted the examination at 48 centres in 25 cities spanned across six states, viz., Haryana, Himachal Pradesh, Madhya Pradesh, Punjab, Uttarakhand and Uttar Pradesh and in Union Territory Chandigarh. Result of JEE (Advanced)-2022 was declared on September 11, 2022. The exam of Architecture Aptitude Test (AAT) was held on September 14, 2022. The total number of registered candidates in IIT Roorkee zone was 14,788 out of which 4,437 got selected for seats in various IITs. And in 2023, IIT Roorkee zone will be conducting exam at around 27 cities spanned across six different states, viz., Haryana, Himachal Pradesh, Madhya Pradesh, Punjab, Uttarakhand and Uttar Pradesh and in Union Territory Chandigarh.

## Support from Ministry

### Grant in Aid received from MoE for the FY 2022-2023 includes (Amount in Crores)

Recurring	543.71
Non-Recurring	104.94
Total Grant	648.65
Income including Student Fees and other Income	97.00





# National and International Ranking

**The National Institutional Ranking Framework (NIRF)** was approved by the MHRD and launched by Honourable Minister of Human Resource Development on 29th September 2015. This framework outlines a methodology to rank institutions across the country. The methodology draws from the overall recommendations broad understanding arrived at by a Core Committee set up by MHRD, to identify the broad parameters for ranking various universities and institutions. The parameters broadly cover “Teaching, Learning and Resources,” “Research and Professional Practices,” “Graduation Outcomes,” “Outreach and Inclusivity,” and “Perception”.

NIRF-Innovation, formerly known as the Atal Ranking of Institutions on Innovation Achievements (ARIIA) is an initiative of Ministry of Education (MoE), Govt. of India to systematically rank all major higher educational institutions and universities in India on indicators related to “Innovation and Entrepreneurship Development” amongst students and faculties.

Category/Year	2019	2020	2021	2022	2023
Overall	8	9	7	7	8
Architecture	2	2	1	1	1
Engineering	6	6	6	6	5
Management	11	12	14	19	18
Research*				8	7

Research\* Category in NIRF started in 2022

National Institutional Ranking Framework Innovation (NIRF), formerly known as the Atal Ranking of Institutions on Innovation Achievements (ARIIA) is an initiative of Ministry of Education (MoE), Govt. of India to systematically rank all major higher educational institutions and universities in India on indicators related to “Innovation and Entrepreneurship Development” amongst students and faculty members.

IIT Roorkee secured Fifth position in the National Institutional Ranking Framework Innovation (NIRF) 2023. For the third consecutive year, IIT Roorkee secured fifth position in NIRF innovation rankings.



## QS World University Ranking

Year	Global Rank	National Rank
2024	369	8
2023	369	7
2022	400	8
2021	383	7
2020	383	7
2019	381	7
2018	431-440	7



## QS World University Subject Ranking

Subject Area/ Discipline	Global Band in 2023	National Rank in 2023	Global Band in 2022	National Rank in 2022	Global Band in 2021	National Rank in 2021	Global Band in 2020	National Rank in 2020
Architecture and Planning	51+	1=	151-200	1=	151-200	2	151-200	3
Overall Engineering & Technology	=175	7	222=	7	176=	7	156=	7
Chemical Engineering	151-200	8	151-200	8	151-200	8	151-200	8
Computer Science and Engineering	201-250	7	251-300	7	251-300	7	201-250	7
Civil Engineering	101-150	=5	101-150	4=	101-150	5	101-150	5
Mechanical and Industrial Engineering	151-200	7	151-200	7	201-250	8	151-200	7
Electrical Engineering	151-200	7	151-200	7	151-200	7	151-200	7
Chemistry	351-400	9	301-350	9	301-350	9	301-350	7
Metallurgical and Materials Engineering	201-250	7	201-250	7	201-250	7	151-200	6
Mathematics	201-250	=6	251-300	7=	251-300	7	201-250	7
Physics	351-400	10	351-400	10	351-400	10	301-350	10
Management Studies	251-300	9=	251-300	9=	251-300	10	351-400	11

● Improved ● Static ● Gone Down

## QS Sustainability Rankings

Year	Global Rank	National Rank
2023	451-500	5

## Media Outreach for R&D

**Media Cell:** The Media Cell at the Indian Institute of Technology (IIT) Roorkee serves as a dynamic hub for strategic communication, public relations, and media engagement. With a mission to enhance the institute's visibility, disseminate accurate information, and foster positive relationships, the Media Cell plays a vital role in projecting IIT Roorkee's achievements, research initiatives, and academic endeavors to a wider audience. Noteworthy achievements include heightened public consciousness, the acquisition of targeted and distinguished media coverage, and deft crisis resolution. Moreover, the Media Cell is steadfastly committed to enhancing the institute's perception by maintaining a qualitative media presence throughout the year. By curating thoughtful content, weaving engaging narratives, and utilizing impactful visuals, the Media Cell effectively molds public perception in favor of the institute. A hallmark of the Media Cell's prowess lies in its deft handling of crisis communication. When unforeseen challenges arise, the Media Cell steps forward with agility, transparency, and strategic finesse. By swiftly disseminating clear and accurate information, addressing concerns, and managing media interactions, the Media Cell adeptly safeguards the institute's reputation and public trust.

RECENT ACHIEVEMENTS



NIRF Rankings 2023: IIT Roorkee Ranked Top Institute Of Architecture & Planning

As per the NIRF Ranking 2023, the Indian Institute of Technology, Roorkee, has ranked as the top Institutes of Architecture and Planning in India. The other top institutes include National Institute of Technology, Calicut; Indian Institute of Technology, Kharagpur; National Institute of Technology, Tiruchirappalli; and School of Planning and Architecture, Delhi.

RECENT ACHIEVEMENTS



IIT Roorkee Researchers Help In Understanding Humming Of Our Universe

An International team of astronomers from India, Japan and Europe has recently published the results from monitoring nature's best clocks, pulsars using six of the World's most sensitive radio telescopes, including India's largest telescope, uGMRT.

RECENT ACHIEVEMENTS



IIT Roorkee Professor Felicitated For Outstanding Contributions

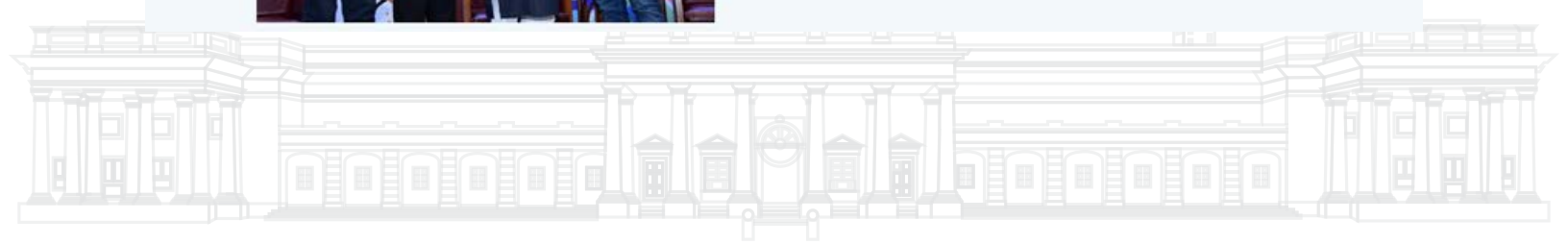
Indian Institute of Technology Roorkee (IIT Roorkee) achieves another milestone. Prof Ramesh Chandra, Institute Instrumentation Centre, IIT Roorkee, was honoured at the recent DRDO-Academia Conclave organized by Defence Research and Development Organizations (DRDO) on May 25 – 26, 2023, at DRDO Bhawan New Delhi.

RECENT ACHIEVEMENTS



IIT Roorkee-Backed Start-Up Indi Energy Wins National Award 2022

Indian Institute of Technology Roorkee's (IIT Roorkee) start-up Indi Energy, which specializes in manufacturing Sodium-Ion batteries, has won the National Startup Awards 2022 in 'Energy Storage' category.



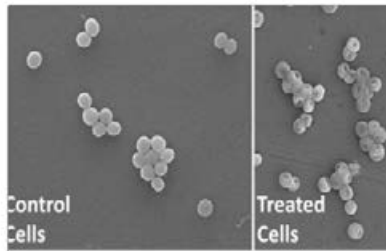
## Recent Research



### NIRF Rankings 2023: IIT Roorkee Ranked Top Institute Of Architecture & Planning

As per the NIRF Ranking 2023, the Indian Institute of Technology, Roorkee, has ranked as the top Institutes of Architecture and Planning in India. The other top institutes include National Institute of Technology,

[READ MORE](#)



### IIT Roorkee researchers discover new antibacterial molecule 'IITR00693'

IIT Roorkee researchers led by Prof Ranjana Pathania, discover New Antibacterial Molecule Against Superbugs, the molecule has shown potent antibacterial activity against a wide range of Gram-positive and

[READ MORE](#)



### Researchers at IIT Roorkee are able to record Ultrafast Photoresponse in SIS

Imagine waste plastic bottles coming to your rescue during an earthquake. Scientists at IIT-Roorkee claimed to have developed a technique that will just do that for you.

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### We Embrace AI To Tackle Disruptions

In an interview with BW Businessworld, Kamal Kishore Pant, Director, Indian Institute of Technology, Roorkee, highlights the utilisation of artificial intelligence and machine learning in optimising the efficient

[READ MORE](#)



### IITRoorkee develops water-soluble coating to replace plastic in disposable paper

A team of researchers from the Indian Institute of Technology Roorkee, IIT Roorkee, has developed a coating for disposable paper that is water soluble and will be used in various applications with requirements of

[READ MORE](#)



### IIT-Roorkee invents coating to enhance durability of submarine equipment

Researchers from the Centre for Nanotechnology at IIT-Roorkee have claimed to have developed a "first of its kind titanium-based coating" that would enhance the durability of the components of naval

[READ MORE](#)



## IITR Media



### IIT Roorkee organizes Industry-Academia Conclave on Sustainable Energy

Center for Sustainable Energy (CFSE), Indian Institute of Technology Roorkee (IIT Roorkee) conducted an Industry-Academia Conclave on Sustainable Energy: Way Forward, on 4 August, 2023.

[READ MORE](#)



### Driving Financial Inclusion: IIT Roorkee's Trailblazing Conference on Digitaliza

The Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee hosts a two-day conference on "Digitalisation and Inclusive Banking: Vision for the Next 25 Years" on 3-4th August

[READ MORE](#)



### JB Lal Memorial Lecture Commemorates The Founding Head Of The Chemical Engg.

The Chemical Engineering Department at Indian Institute of Technology Roorkee (IIT Roorkee) hosted the prestigious JB Lal Memorial Lecture, a tribute to the founding head of the department, Professor JB Lal,

[READ MORE](#)



### IIT Roorkee's Ruby Jubilee Reunion: 1981 batch makes a donation of 1 crore

The Indian Institute of Technology (IIT), Roorkee recently celebrated its Ruby Jubilee Reunion for the 1981 Batch, including the 1982 BArch.

[READ MORE](#)



### THDC India Limited And IIT Roorkee Inks MoU For Collaborative Translational

In a significant milestone, THDC India Limited (THDCIL), a renowned power generation company, and the prestigious Indian Institute of Technology (IIT), Roorkee have come together to embark on a

[READ MORE](#)



### IIT Roorkee GNEC hosts 'Indo-German Partnership Workshop' to enhance scientific

Indian Institute of Technology Roorkee's (IIT Roorkee) International Relations Office organized "Indo-German Partnership Workshop" to enhance scientific cooperation and strengthen ties between Indian and

[READ MORE](#)

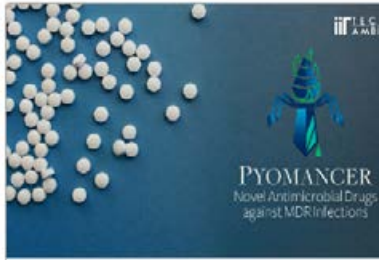




**IIT Roorkee, ICAT forge partnership in Indian automotive innovation**

As the partnership between IIT Roorkee and ICAT moves forward, it promises to bring about transformative changes in the automotive industry, accelerate India's journey towards VIKSIT BHARAT @ 2047,

[READ MORE](#)



**Pyomancer: Novel Antimicrobial Drugs against MDR Infections**

Team iGem IIT Roorkee's gold medal solution to tackling WHO's topmost priority problem of Antimicrobial Resistance and approaching it from a multidisciplinary perspective.

[READ MORE](#)



**IIT Roorkee sets the stage for celebrating 136th Jayanti of Bharat Ratna**

Indian Institute of Technology Roorkee (IIT Roorkee), the foremost of institute of national importance in higher technological education, felicitates Bharat Ratna Pandit Gobind Ballabh Pant on his 136 Jayanti in

[READ MORE](#)



**IIT scientist unearth ancient Indian dinosaur; here's what they discovered**

A team of scientists from the Indian Institute of Technology (IIT)-Roorkee and the Geological Survey of India (GSI) have journeyed back through time to unearth the enigmatic remains of an ancient, long-

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**3-day National Youth Conference on Indian Knowledge System (IKS) at IIT Roorkee**

A 3-day National Youth Conference on Indian Knowledge Systems (NYCIKS) being organized in collaboration with the IKS division, MoE; Central Sanskrit University, New Delhi; University of Patanjali; CCRYN,

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**IIT Roorkee research team develops a one-step separation of milk fat globules**

A study conducted by a research team at IIT Roorkee demonstrated the one-step separation of fat globules based on size from bovine milk.

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## Recent Achievements



### IIT Roorkee develops structural colour-based sensors from agro-waste sugarcane

A group of researchers from the Indian Institute of Technology Roorkee (IITR), department of polymer and process engineering have developed structural colour-based sensors by making structural

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### IIT Roorkee and SAIL Bokaro forge strategic partnership

Prof. KK Pant, Director of IIT Roorkee, led a proficient team on a momentous visit to the SAIL Bokaro Steel Plant recently.

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### IITRDF and SYSTRA India forge strategic partnership

IITRDF and SYSTRA MVA Consulting (India) Private Limited (SYSTRA India) have announced a collaborative initiative, marking a significant milestone in the realm of sustainable infrastructure development.

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### HUC India Country Chapter Meeting unanimously agree to mobilize resources

Since 2009, the Himalayan University Consortium (HUC) has worked intensively with 23 Indian universities across the India Hindu Kush Himalaya (HKH) region.

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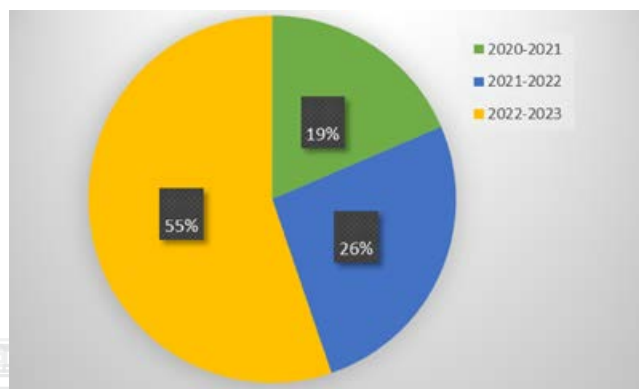
# Research and Development Activities

In Financial Year (FY) 2022-23, IIT Roorkee received external funding of Rs. 212.45 crores for R&D related activities. This included funding from government agencies, industries and others, both within and outside India.

## 1. R&D Activities

SRIC acts as a facilitator for research and development projects by actively engaging with industries, government agencies, and funding bodies. It assists in identifying funding opportunities, forging partnerships, and supporting researchers in developing competitive proposals. Through its extensive network, SRIC enables IIT Roorkee’s faculty and researchers to undertake research projects that address real-world challenges and have a tangible impact on society. Total 188 sponsored research projects with a total outlay of **21283.41** Lakhs have been signed in this year. Similarly, a total of **1124** consultancy projects with a total outlay of **8379.591** Lakhs have been signed

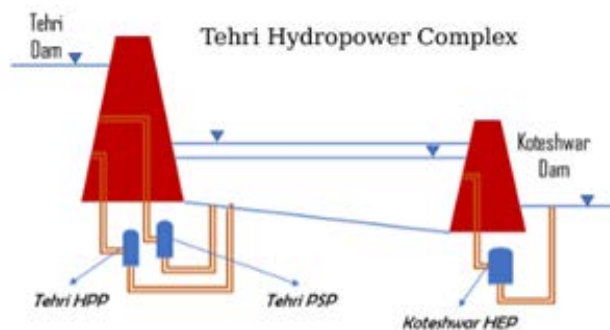
FY	Sponsored Projects		Consultancy Projects	
	Number	Sanctioned Outlay	Number	Project Outlay
2020-2021	148	7151.28	637	5352.13
2021-2022	201	10102.136	759	5956.9
2022-2023	188	21283.41	1124	8379.591



In FY 2022-23, IIT Roorkee initiated 188 R&D projects with sanctioned outlay of 212.45 crores, some of the major projects are:

### 1) Decision Support System for Integrated Operation of Tehri Hydropower Complex

The industrial collaboration between the THDC India limited and Department of Water Resources Development & Management, IIT Roorkee aimed at developing a “Decision Support system for the Integrated Operation of Tehri Hydropower plant (HPP), Koteshwar Hydroelectric plant (HEP) and Tehri Pumped Storage plant (PSP) complex”. The main objective of the project was to formulate a Real time Simulation – Optimization framework for maximization of the operational benefit with maximum energy generation subjected to physical and operation constraints. A Graphical user interface will be developed to examine the energy generation on daily, annual and desired time period.



### 2) Development of Software for Authentication of Audio-Video Footage

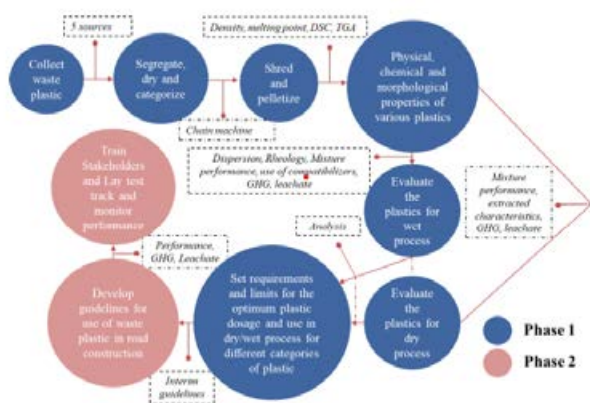
Digital multimedia documents (i.e., audio, image, and video) increasingly play a significant part in crime investigations and criminal proceedings. Since multimedia documents can easily be manipulated using freely available editing tools, their admissibility as evidence in a court of law is often challenged. Doctored audio/image/video is also widely used to create fake news items, malign individuals, and spread propaganda



on social media platforms. The project aims to develop novel source verification and manipulation detection techniques for the forensic analysis of digital audio-video footage.

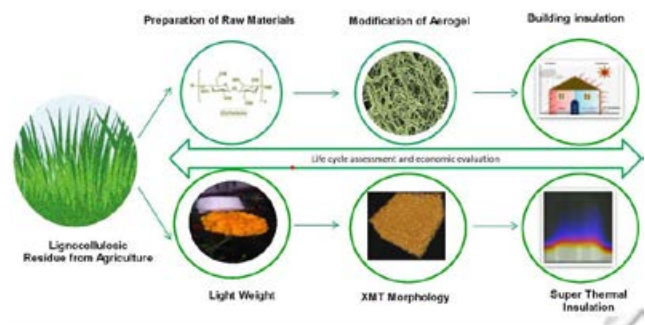
### 3) Development of Specifications for Use of Waste Plastic in Asphalt Mixtures: A Major Step Towards Building Sustainable Road Infrastructure

Amongst various avenues being searched for solving the menace of increasing amount of plastic accumulation, its use in hot mix asphalt (HMA) is becoming popular. Several researches have been conducted since 1980s on the use of different types of waste plastics in asphalt mixtures through dry and wet processes. While it may sound ‘simple’ and ‘attractive’, incorporation of waste plastic in asphalt mixture has many challenges. The main objective of this study is to develop specifications for use of waste plastic in pavement construction. To achieve this, the chemical, physical and morphological properties of various type of waste plastics generated commonly in India will be studied. Pelletized plastics will be used to evaluate its suitability for wet and/or dry modification process. Finally, a standard manual for use of waste plastic based on short- and long-term performance of bituminous mixtures will be developed.



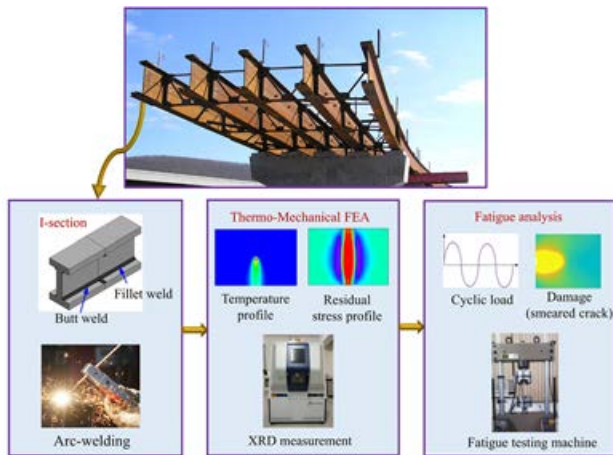
### 4) Lightweight Thermal Super-Insulating Aerogel Made by Using Hybrid Cellulose Nanomaterials Extracted from Waste Biomaterials for Building and Advanced Applications

This research is driven by the need for a new class of sustainable, lightweight, robust, cost effective, super thermal insulating 3D aerogels from hybrid cellulose nanomaterials for the next generation ‘Zero Energy Buildings (ZEB)’. Energy saving in buildings has become a question of crucial importance in many countries, including India. About one-third of the total energy is being used in building sectors only. Hence, it is indispensable to reduce the energy consumption of buildings by finding more effective thermal insulation materials. The nanocellulose, precisely cellulose nanofibers (CNFs), the building block of the aerogel, will be isolated from rice and wheat straw, the two major agricultural residues of India, using our existing methodologies. Using of waste cellulose will not only reduce the cost of the product, also mitigate the burden of growing waste on the earth. Our proposed cellulose aerogel will be robust, ultralight, and able to withstand extreme cold and hot temperature so it can be a substitute for typical silica-based aerogel, which is highly brittle.



### 5) Fatigue Design of Welded Joints in Military Bridges: Experiments and Simulations

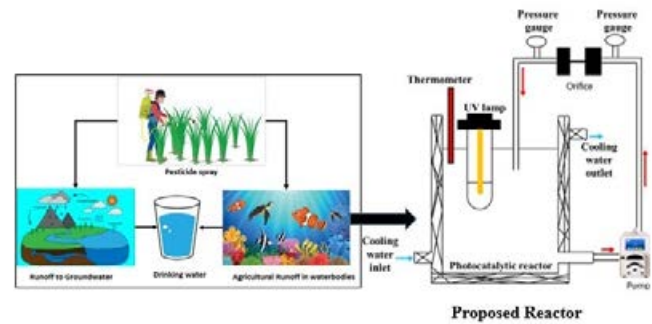
Welded joints, used in military bridges, are often subjected to cyclic or periodic loads, resulting in the formation of cracks. A major contributing factor which leads to early occurrence of cracks is the presence of tensile residual stresses in the heat affected zone of welded joints. Therefore, the present works aims to study the effect of residual stresses on Weldox-700 steel joints used in the military bridges through experimental and numerical techniques. The residual stresses induced due to arc-welding would be estimated through thermo-mechanical finite element simulations. The results obtained from the numerical simulations would be validated using X-Ray diffraction technique. The stress-life curve for the material would be experimentally obtained through fatigue-testing. A numerical framework would be developed using the concepts of damage mechanics and finite elements to estimate the fatigue strength, crack initiation and propagation, and the service-life of the welded joint. The present study would be useful for the reliable design and safe loadings on the military bridges.



### Prototype Development to treat pesticide residue in surface water bodies in rural areas

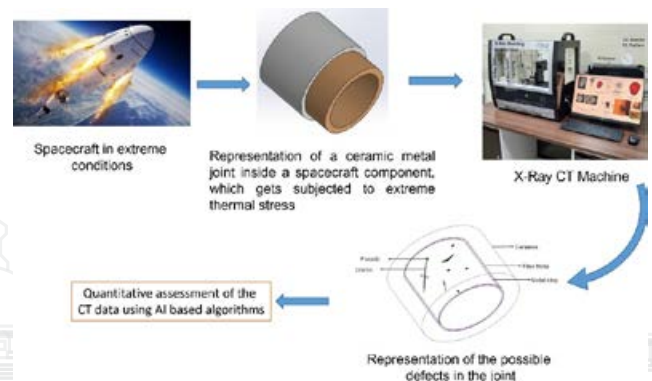
Growing use of pesticides specifically organochlorine is a cause of concern for today’s society. High amount of pesticide residue in water leads to increase environmental problem. These micro-pollutant needs advanced oxidation processes for their removal. Photo catalysis with TiO<sub>2</sub> emerges as a promising method in this regard. However, it suffers from certain disadvantages like, catalyst deactivation and

mass transfer limitation. Present project proposes to overcome these disadvantages by using principle of hydrodynamic cavitation. In this process high energy density spots and hydroxyl radicals are generated from collapse of cavities. A hybrid potable reactor will be developed by combing these two processes.



### Computed Tomography (CT) based Algorithm for Non-Destructive Quality Assessment of Ceramic Joints of the Components used in Space Applications

Ceramic-metal joints are essential elements of components used for space applications, including satellites, radars, and spacecraft. This project intends to study the defects developed in ceramic-metal joints used in spacecraft components. The micro-scale defects induced during the joining process, and the development of new defects and growth of existing defects is the area of interest. when the components are subjected to extreme mechanical and thermal stresses the quality of the components may deteriorate and lead to their failure. Therefore, quality inspection of the components is required in order to quantify the defects. This can be non-destructively done by using X-ray Computed Tomography (CT). The collected data during in-situ X-ray CT scanning is analyzed using AI-based algorithms to quantify the level of deterioration.



**Some Major Sponsored Projects initiated:**

- **Training of technicians for system design, installation, operation, maintenance and repair of renewable energy systems at grass root level-jal Urja Mitra Programme (Small Hydro)**

Funding Agency: Ministry of New and Renewable Energy, New Delhi

Sanctioned Outlay: Rs. 1403.7 crores

- **Prefabricated Prefinished Volumetric construction using recycled plastic in connection with the prefabricated prefinished volumetric construction using recycled plastic technology of anant national university**

Funding Agency: Ministry of Housing and Urban Affairs, New Delhi

Sanctioned Outlay: Rs. 583.63 crores

- **Pre cast reinforced concrete Planks in connection with the precast panel technology**

Funding Agency: Ministry of Housing and Urban Affairs, New Delhi

Sanctioned Outlay: Rs. 592.80 crores

- **5G Advanced ORAN Massive NIMO Base Station**

Funding Agency: IITB COMET Foundation, Bengaluru, Sanctioned Outlay: Rs. 124 crores

- **Mass Production of High Performance carbon fibers and nanofibric separators by Electro-spinning techniques for rechargeable batteries and super-capacitors**

Funding Agency: National Technical Textiles Mission, Ministry of Textiles, Udyog Bhawan, New Delhi, Sanctioned Outlay: Rs. 130.2 crores

- **Design and development of an intelligent unmanned aerial vehicle applied to open cast minefield surveillance for real-time monitoring, hazards and vulnerability assessment**

Funding Agency: I-Hub Foundation for COBOTICS (Technology Innovation Hub of IIT Delhi Govt. of India)

Sanctioned Outlay: Rs. 164.37crores

- **Design and development of new prototype for RIS-aided communication**

Funding Agency: IITB COMET Foundation, Bengaluru  
Sanctioned Outlay: Rs. 110.30 crores

- **A comprehensive GIS- based toolkit for investigating the cultural routes of bhotia's trade routes in Uttarakhand**

Funding Agency: DST, NEW DELHI

Sanctioned Outlay: Rs. 115.32 crores

- **Development of digital twin for centrifugal pump and system, pipelines providing sea water supply to main propulsion plant on board naval platforms**

Funding Agency: DRDO, Visakhapatnam, Ministry of Defence Sanctioned Outlay: Rs. 134.52crores

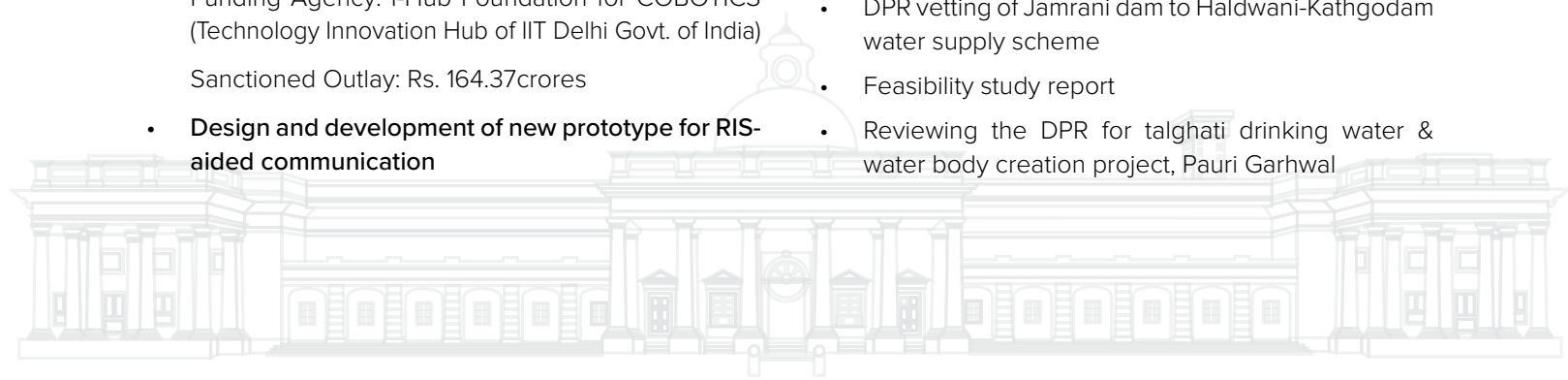
- **Research and development of ultra-low head and hydrokinetic turbines and performance prediction of small hydro turbine models**

Funding Agency: Ministry of New and Renewable Energy, New Delhi

Sanctioned Outlay: Rs. 1900.08 crores

**Some representative Consultancy Projects initiated during this year:**

- Site visit and expert opinion
- Evaluation & Analysis of samples
- Comprehensive evaluation of designs for storm water drains proposed under cm relief fund
- Hydrological survey and flood assessment/disaster management
- Technical advice
- Protection of infrastructure
- Vetting of structural design
- AI driven trading platform
- Synthesis of atorvastatin impurities
- Waste water analysis & recycling - rice industry
- Design of protection measures for safety of the bridge
- DPR vetting of Jamrani dam to Haldwani-Kathgodam water supply scheme
- Feasibility study report
- Reviewing the DPR for talghati drinking water & water body creation project, Pauri Garhwal



- Appraisal of detail project reports
- Nala/canal diversion report of coal mine block located in chandwa tehsil, lateha district of Jharkhand state
- Techno-economic review of updated dpr of keyi shp (2 x 11.5 mw) in district lower subansiri of Arunachal Pradesh
- Evaluation of cost escalation of shp projects by kreda in various location in kargil
- River training along gaula and nandhour river, nainital district
- Soft rock study for earthwork for railway formation for east west rail corridor from gevra road to pendra, south east central railway
- Development of ganga expressway (group-iii)-evaluation of binders
- Hydraulic model study
- Four laning of najibabad bypass
- Soil investigation
- River protection works
- Proof checking of buildings
- Investigation of mechanical characteristic of building materials
- Wind analysis
- Topographical survey
- Structural Audits
- Bridge design vetting
- Canal protection works
- Vetting of building design, material selection for ens compliance - residential colony for bro in leh
- Specialised services for construction of proposed major dhyanchand sports university at meerut uttar pradesh under uppwd on epc mode
- Preparation of gis based master plan for tripura state
- Plastic waste characterization in daily waste and market survey
- Universal accessibility for suburban stations of central and western railways
- Architectural safety review aspects of tata steel, sahibabad unit
- Vetting of i&d works at khalua nala

## Internal Funding for R&D

The Institute released funds to the tune of Rs. 5471.395 crores in total for R&D related activities. Funds to the tune of Rs 4.59 crores were sanctioned as FIG for initiation of research for new faculty members. The funds released by the Institute during the FY 2022-23 were distributed across the following areas:

- 1) Faculty initiation grant given to the new faculty members to provide funds for establishing research infrastructure for an individual.
- 2) SMILE - Scheme supports the procurement of major equipment above Rs 25 lakhs. For each proposal, at least two departments/centers must be involved to maintain the interdisciplinary nature. Application has to be from a group of faculty members from different departments/centers. A total of 25 projects have been sanctioned with a total amount of 49.815 Crore.
- 3) Matching Grant - Scheme supports the equipment procurement with 50% sanctioned grant from external agencies or Rs 20 lacs. Scheme can be availed by an individual faculty or a group of faculty. Under this scheme institute can provide a commitment letter with the proposal submission to external agencies. A total of 75 projects have been sanctioned with a total outlay of 5.773 crore.
- 4) Technology Readiness Level Booster Scheme was launched in April 2022, In order to boost the TRL of IIT Roorkee technologies, a total of 7 technologies proposal have been reviewed with a total outlay of 45 lakhs.
- 5) Facilitating grants to faculty members for filing patents, research publications and/or international travel
  - Leverage grants and bridge grants
  - Fellowships for PhD student
  - Conferences, seminars, exhibitions
  - Publications
  - Student research/ competition/ event

## Corporate Interaction

To showcase our Research & Innovation to the industry and corporates IIT Roorkee has participated in PANIIT PIWOT Global Virtual Technology Summit, DST-CII

Tech Summit, CII India Design Summit Exhibition, CII Advance Material Summit and DST - CII India Singapore Technology Summit. In order to leverage Industry-Academia linkages, institute continuously promotes the activities like participation in corporate summits, generating opportunities for students (internships, fellowships and work studentships), Research collaborations with corporate entities via execution of MoUs and MoAs with corporates. In this year total 41 MoUs were signed with various government and private entities. The list is as follows: -

- 1) Tata Consultancy Services Limited
- 2) Oil and Natural Gas Corporation
- 3) GE HTC & IIT-R
- 4) Himalayan Environmental Studies & Conservation Organization (HESCO)
- 5) ITDA, STF (Uttarakhand Police)
- 6) BEE & IITR
- 7) DRDO, IIT Roorkee Centre of Excellence
- 8) Ministry of MSME, GOI
- 9) RFRF Nagpur
- 10) National Highways & Infrastructure Development Corporation Limited
- 11) International Institute of Technology Bangalore Comet Foundation
- 12) SGRRU Dehradun
- 13) Nuclear Fuel Complex & IIT-R
- 14) John Deere India Private Limited
- 15) National Rail Transportation Institute
- 16) RDSO Lucknow
- 17) MORTH
- 18) Deloitte
- 19) HDFC Bank Limited & IIT-R
- 20) Partnership With NIET & IIT-R
- 21) Partnership With NIT Uttarakhand & IIT-R
- 22) Partnership With Graphic Era Institute & IIT-R
- 23) Partnership With COER & IIT-R
- 24) Partnership With SRHU & IIT-R
- 25) INFLIBNET Centre Gandhinagar- Shodhganga Project
- 26) BIA AND RSSIA
- 27) CIPET & IIT-R
- 28) Chellaram Diabetes Research Centre, Pune
- 29) NTTM Ministry of Textiles, GOI
- 30) NID Haryana & IIT-R
- 31) Kasper India Private Limited
- 32) Government of Odisha (Department of Water Resources)
- 33) IAF & IIT-R
- 34) CWC & IIT-R
- 35) SBL Specialty Coatings Private Limited
- 36) National Power Training Institute NPTI
- 37) The M. K. Morse Company, USA
- 38) Fare Labs Gurugram
- 39) Luit Renewable Solutions Private Limited
- 40) Doon University
- 41) MDS IndoCan Inc

### Some of the prominent MoUs are:

1. **CIPET** and **IIT Roorkee** signed an MoU to strengthen academic and **Research Cooperation** in the field of petrochemicals, plastics, polymers, chemical engineering and material science



2. Indian Institute of Technology (IIT) Roorkee and the **National Power Training Institute (NPTI)** have signed a Memorandum of Understanding (MoU) to develop a Center of Excellence (CoE) for research and consultancy in Supply Chain Management of Green Hydrogen at the IIT Roorkee's Greater Noida Extension Centre (GNEC).



3. MoU signed between **DRDO**, and **IIT Roorkee** to establish Centre of Excellence by conducting directed research in critical & futuristic advanced technology areas for defense & security.



4. IIT Roorkee has signed an MoU to develop indigenous defence technologies, and equipment via collaborative R&D. The rationale behind the partnership is to establish long-term relationships and work together to promote the development of indigenous technologies and equipment in the areas of obsolescence management, self-reliance, upgradations, and digitalization through indigenization of equipment. The aim is to realize the self-reliant Indian defence system. The MoU outlines the collaborative effort between IIT Roorkee and IAF to achieve the government's **'Make in India, Make for the World'** vision.



### 5. International Centre of Excellence for Dams

Building on the R&D potential of the institute, the Central Water Commission, Department of Water Resources, River Development & Ganga Rejuvenation, Ministry of Jal Shakti entered into a Memorandum of Agreement with IIT Roorkee for establishing an International Centre of Excellence for Dams to create an interdisciplinary platform where academia, industry, professional, civic bodies and other stakeholders would contribute in creating knowledge-based solutions to make dams on entire globe are safe. It is a synergetic concept and is expected to leverage the individual strengths of the multi-faceted players it encompasses. Under this MoA, the Ministry of Jal Shakti under DRIP Phase II and III has provided a Grant of Rs 108.99 crores to IIT Roorkee for establishing this unique Centre of Excellence.



This CoE promotes the "Make in India" initiative in the field of dam safety by engaging in cutting-edge research, developing technologies, and application products. This CoE accelerates the innovation to

provide the most appropriate solutions to various challenges in the dam safety and creates a pool of qualified personnel for dam owning agencies and equips industry with cutting-edge theoretical and practical know-how.

## 6. AZBIL Corporation

IIT Roorkee and The Azbil Corporation, Japan have signed a MoU to establish research collaboration. The Azbil and IIT Roorkee will engage in collaborative research and run internship programs in areas of mutual interest. The collaboration will involve joint academic activities, industry-led projects to promote digitalization, exchange of expertise and resources, and talent development in select STEM (Science, Technology, Engineering, and Mathematics) fields. This partnership aims to foster research and development, promote knowledge-sharing, and create opportunities for students to gain valuable experience.

## 7. M.Tech Semiconductor Technology in collaboration with Taiwan universities

To build the international collaboration and strengthen India's Semiconductor Technology and Manufacturing, and train manpower as per global Industry needs, as well as boost research capabilities and collaboration in semiconductors, IIT Roorkee has started a M.Tech program in Semiconductor Technology which will be jointly offered by the Dept of Electronics and Communication Engineering and the Dept of Physics at IIT Roorkee and select partner Universities of Taiwan. To this effect IITR has signed agreements with the National Tsing Hua University (NTHU), and National Yang Ming Chiao Tung University and National Taiwan Normal University.



## TechSarathi:

It is an initiative to support industrial units in and around Roorkee. It focuses on industries within a 175 km radius of IIT Roorkee to assist in adopting technically sound solutions, accelerating their growth, and achieving the “local to global” goal. This programme has been launched as part of the 175th anniversary celebrations to appraise industrial units to assess the existing level of technology, offer workable solutions to their issues, and suggest enhancements to increase overall efficiency. Via the I-STEM portal, IIT Roorkee offers access to its R&D resources to the industries. The initiative aims at creating opportunities in and around Roorkee by working with the small-scale industries which lack the resources required to take their products from local to global standards. It was conceptualized keeping in mind the major issue of lack of access to newer technologies and infrastructure to solve the issues that are stifling their growth.

Additionally, it identifies market and product potential, as well as evaluating a company's technology and intellectual property ownership. This programme was launched by the Honourable Chief Minister of Uttarakhand on April 8, 2022. The following organizations have come forward to support the initiative: CII Uttarakhand, Startup Uttarakhand, NASSCOM Uttarakhand, Directorate of Industries Uttarakhand, Udh yog Suvidha Kendra, SIDCUL Manufacturers Association, SIDCUL Entrepreneurs Welfare Society, Roorkee Small Scale Industrial Association, and Bhagwanpur Industrial Association. Under this scheme, IIT Roorkee has partnered with over 25 industries in and around Roorkee to discuss some of the technical issues that are stifling their growth. Following that, the faculty and students from the institute are assisting industrial units by proposing technical solutions to their problems that are also commercially viable in order to contribute to the development of the industries. IIT Roorkee is currently helping the local industry with capacity building, shop floor technology upgrades, and software development and apps for supply chain solutions, user experience, interface design, remote monitoring and control, web interfaces, and dashboards. Current work on technological improvements, better health and safety practices, pollution control and sustainable waste management practices, acquisition of needed technologies and expertise will have a greater impact on

the qualitative effect of socioeconomic development of local industries and, as a result, regional development.

## Intellectual Right Property Activities

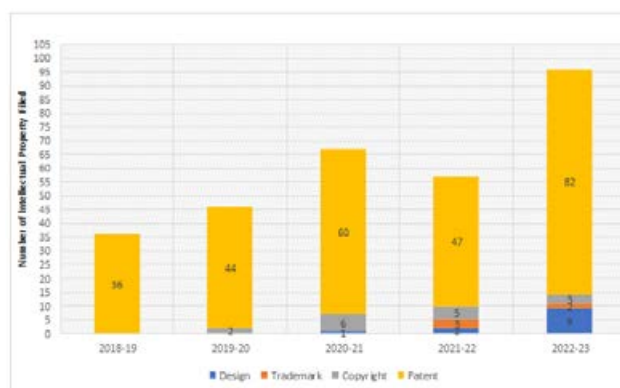
The Institute's IPR Cell is the focal point for all issues related to Intellectual Property. The range of work of the IPR Cell includes patent filing, copyright registration, design registration, patents publication, and preparation of patent examination response, which facilitates the granting process and transfer of technology. It regularly organizes different workshops, and other informative sessions to encourage students and faculty members to invest in IP. Particularly, sessions on use of Derwent Innovation software and XLSCOUT are the regular features of IPR cell webinars. Many competitions on IPR are also organized from time to time. This year, two short-term IPR certificate courses have been organized, and more advanced and core IPR courses are scheduled for the near future. In an effort to develop a holistic IP culture, several workshops, webinars and expert presentations were held. Recently two new policies were launched, one is Technology Readiness Level Booster (TRLB) scheme. The scheme is designed to support TRLs of technologies for which IP is filed and present TRL is 3 or 4 to boost to 7 or 8. A maximum amount of Rs 15 lakh for 1 year can be provided for boosting the TRL. The other scheme is Financial Support for Faculty led Startup, which is a seed fund support and is applicable to start the work of a startup. A faculty member or a group of faculty members can apply for this support on behalf of their startup. Under this scheme a maximum amount of Rs 15 lakh can be provided to a faculty led startup. The IPR Cell is continuously committed to smoothen and expediting the process of IP filing and granting. This year 82 patents are filed which is the highest number so far.

### Patent and other IP Filing:

During the period from April 2022 to March 2023, the IPR Cell received 130 Intellectual Property (patent, trademark, design and copyright) applications from students and academic members. Respective Intellectual Property Assessment Committees (IPACs) evaluated these disclosures. There have been 82 patents filed in total. An overview of IPs filed/registered

and granted during FY 2022-23 are given in table 1 and a graphical representation of year-wise growth in number of intellectual property applications filed in the last five years are given in Figure 1.

IP Type	Applications filed (No.)	Granted (No.)
Indian Patents	82	34
Patent Cooperation Treaty (PCT) Application	01	00
Trademark	2	2
Industrial Design	9	2
Copyright	3	1
<b>Total IPs</b>	<b>97</b>	<b>39</b>



### IPR Course Conducted:

The IPR Cell has also conducted two short-term certificate courses on Introduction to Intellectual Property Rights and Creativity Innovation & Intellectual Property Rights, where the participants were explained about the meaning, nature, significance, needs and management of Intellectual Property Right (IPR). Patent Law, Patentability requirements, Patentability search & strategic use of Patent information, Infringement etc.

### Impact Lecture Series Conducted:

The IPR Cell IIT Roorkee has conducted various Impact Lecture Series by inviting external experts on innovation, intellectual property rights, and start-ups. The objective of this series is to enhance faculty and student understanding of Innovation & Entrepreneurship (I&E) and IPR.



## Licensing Activities in FY 2022-23

### Support to Entrepreneurship

IIT Roorkee encourages creation of Scientific Enterprises in the campus and incubate such ventures in the Technology Innovation & Development of Entrepreneurship Support (TIDES). The start-ups created in IIT Roorkee in the last one year for translating the technologies include:

- Farmicorn India Private Limited
- Design Therapeutics, Inc.
- M/s Prayas Greentech Pvt. Ltd.
- CogXR Labs Pvt. Ltd.
- E-sense
- AGROCAM
- Sensing Bharat
- Radiant wave technology Pvt. Ltd.

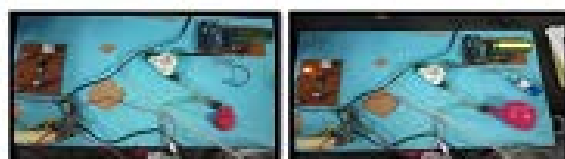
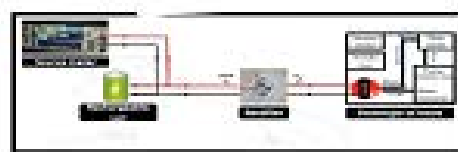
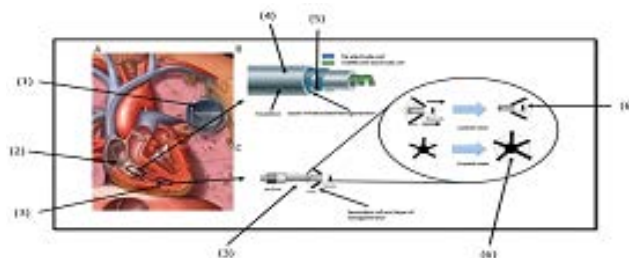
### Technology Licensed in the last one year (April 2022 - March 2023)

1. In-situ charging system for implantable pacemaker, licensed to Healagnostic Pvt. Ltd.

*By Prof. Indranil Lahiri, Siddharth Sharma, Prof. Debrupa Lahiri and Prof. Partha Roy (BSBE)*

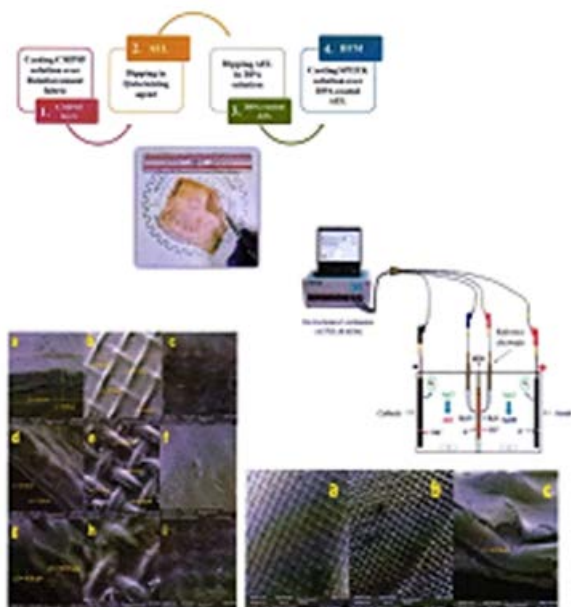
The present invention relates to a self-rechargeable battery system consisting of nanomaterials incorporated piezoelectric system as nanogenerator and a rechargeable battery to replace the classical non-rechargeable batteries used in the pacemakers. The piezoelectric system is essentially a piezoelectric polymeric mat attached to a full-wave bridge rectifier and a voltage multiplier. The rectified and modulated voltages from the piezoelectric system are fed to the rechargeable battery. Nanomaterials are incorporated as second phase reinforcement material to the piezoelectric system converts mechanical energy arising from the movement of the heart electrical energy and concomitantly generate voltage to replenish charge of the battery used in operating the pacemaker.

2. Low cost reinforced bipolar membrane fabricated with interface layer, licensed to Permionics Membranes Private Limited, Vadodara



*By Prof. Sujay Chattopadhyay and Bhuvanesh E. (PPE)*

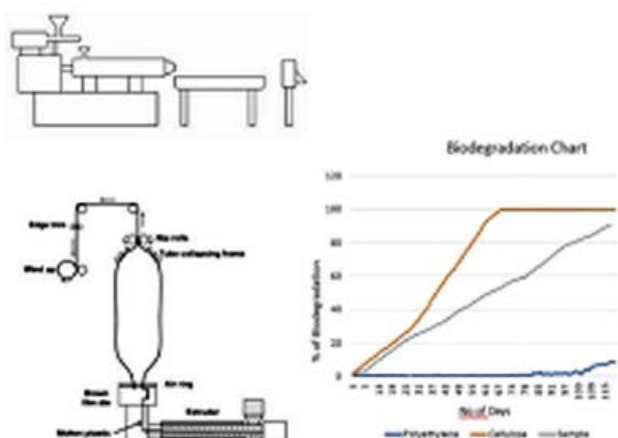
The present invention provides synthesis of a low cost bipolar membrane having superior performance by functionalization of base polymers of glass transition,  $T_g < \text{room temperature}$  and possessing good chemical, mechanical and thermal stability. Catalyst (2, 6) Pyridine dicarboxylic acid also called Dipicolinic acid, (DPA) layer is used for water dissociation. At normal pH ( $\sim 7.0$ ) DPA acts as deprotonated dicarboxylic acids anions ( $-\text{COO}^-$ ) and its presence at interface, water dissociation potential at  $100 \text{ mA}\cdot\text{cm}^{-2}$  gets reduced to 2.345 V from 2.65 V, while a commercial (FBM) BPM showed potential of 1.972 V. Application of nylon based woven fabric reduced the overall cost of BPM compared to PEEK based woven fabric as reinforcing material. DPA deposition increased current efficiency ( $\eta$ ) of BPM electro dialysis from 59 to 64 % (while the same  $\eta$  with Fumatech BPM is 81% and the energy consumption (E) got reduced from 11.56 to 10.26  $\text{kWh}\cdot\text{kg}^{-1}$



3. Development of formaldehyde modified thermoplastic starch and its blending with low density polyethylene (LDPE) for biodegradable packaging bags, licensed to Agrsar Innovatives LLP Greater Noida

By Prof. P. P. Kundu (ChED)

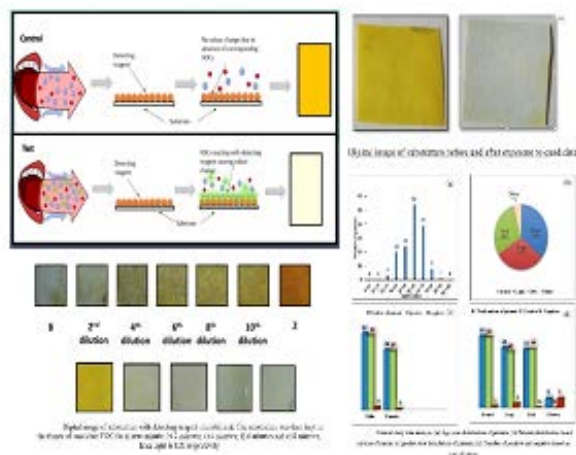
The present invention relates to formaldehyde modified thermoplastic starch and its blending with low density polyethylene (LDPE) for biodegradable packaging bags. The invention provides a method of making a thermoplastic starch, where the thermoplastic starch is a blend of starch with a plasticizer to improve gelatinization and another plasticizer to reduce retro gradation in a thermoplastic starch.



4. Biosensor for detecting cancer using exhaled breath, licensed to Tata Steel Limited

By Prof. Indranil Lahiri, Prof. Debrupa Lahiri, Prof. Partha Roy, Siddharth Sharma and Swati Haldar (MMED, CON and BSBE)

The current invention relates to the field of non-invasive early detection of cancer using exhaled breath. The current invention relates to a biosensor and method of early detection of breast, lung and oral cancers by monitoring of volatile organic compounds in the exhaled breath of cancer patients.

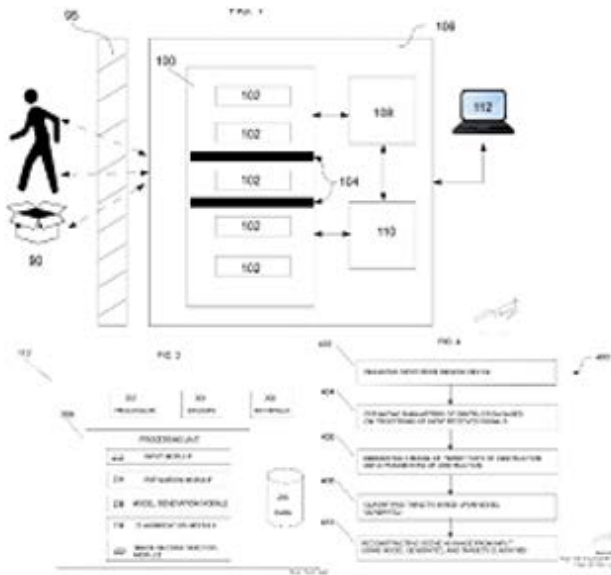


5. A system and method for through wall imagine, licensed to Dirghadhi Technology Pvt. Ltd.

By Prof. Dharmendra Singh, Bambam Kumar and Smitha Puthucheri (ECE)

A cost effective TWI system which has the capability to detect, identify and classify various living and non-living targets has been developed indigenously. The system is based on Stepped Frequency Continuous Wave (SFCW) radar concept and working from 1.5-3.5 GHz, which can provide good range resolution and cross range resolution, that can be used for imaging a target behind the wall. The scanning time to image the target is reduced by introducing the concept of array antenna and it is fabricated in our laboratory. The crosstalk in the antenna array is minimized by the coating of developed microwave absorber, which improved the image quality. An assembly of complete TWI system with developed algorithm and display system is designed and

the prototype is fabricated. The developed TWI prototype is successfully evaluated for various targets like different dielectric materials as well as for living targets.



- A water based ink formulation for rotogravure printing ink medium and pigmented ink, licensed to UFlex Limited

*By Prof. Yuvraj Singh Negi, Anurag Kulshreshtha, Brahma Prakash and Prof. Millie Pant (PPE, DPT and ASE)*

The present invention relates to the water based ink formulation for rotogravure printing ink medium and pigmented ink. The present invention provides the method of synthesis of acrylic copolymer resin. Properties of acrylic copolymer resin was discussed and analysed emphatically. Further the five types of waterborne inks were developed using neat acrylic copolymer resin. The physical properties of the waterborne inks including pH, viscosity and surface tension were analysed and further printing on the surface of the polyester film to evaluate their suitability and potential for printing application. The adhesion, rub resistance, drying time, gloss and colour values of the waterborne ink improved significantly.

- A water based ink formulation for magenta pigment application for elongated engraved cells

on rotogravure printing cylinder, licensed to UFlex Limited

*By Prof. Yuvraj Singh Negi, Anurag Kulshreshtha, Brahma Prakash and Sauraj Singh (PPE and DPT)*

The present invention relates to water based ink formulation for rotogravure printing ink medium and pigmented ink. The invention provides formulation of water-based ink basically for magenta pigment and use of additive for increasing the cross-linking, while printing and improve the adhesion and fast drying. In this invention we formulated the water-based ink the use of acrylic acid, butyl acrylate, methylmethacrylate and Maleic Anhydride as monomers.



National Start-Up Day

## IPR Newsletter

IPR Cell has launched the first ever newsletter, which provides all information pertaining to IP activities within the campus.



# Incubation Activities

## Technology Innovation & Development of Entrepreneurship Society (TIDES)

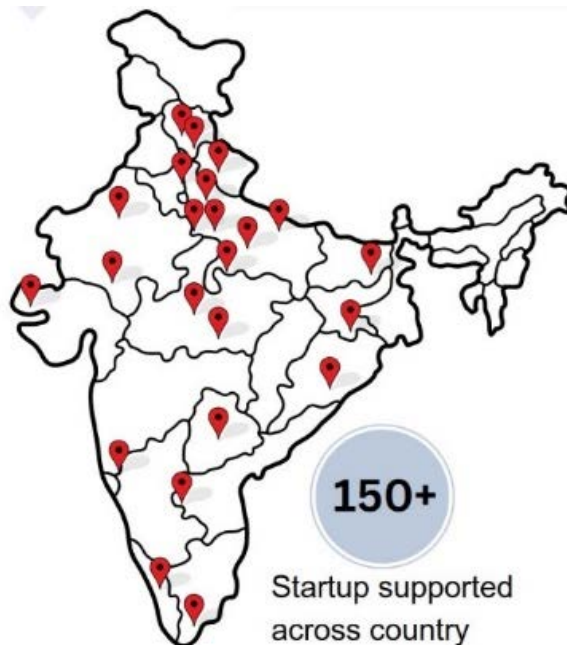
It is a Society formed under the Society Registration Act, 1860 to promote innovation and entrepreneurship at IIT Roorkee and local Uttarakhand region. TIDES runs and manages a Business Incubator “TIDES Business Incubator” at IIT Roorkee to facilitate incubation of new startups with innovative technologies by incubating them. TIDES Business Incubator is recognized as a leading Incubator by Government of India.

The TIDES team is led by: Prof. K K Pant, Chairman, Governing Body & Director, IIT Roorkee; Mr. Azam Ali Khan, CEO; Dr. Sanjeev Manhas, Faculty Incharge; and other members from academia and industry.

### Startup Portfolio

TIDES is offering two type of incubation programs as given below:

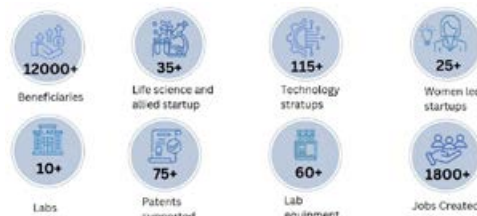
- Pre-incubation at TIDES, IIT Roorkee offers aspiring entrepreneurs a platform to refine their startup ideas. It provides mentorship, resources, and access to industry experts. Pre-incubation supports early-stage ventures, helping them develop business models, validate ideas, and prepare for the incubation program.
- Incubation at TIDES, IIT Roorkee nurtures startups through resources, mentorship, and infrastructure. It provides office spaces, labs, prototyping facilities, and connects startups with industry experts. TIDES offers workshops, training, and access to investors. It

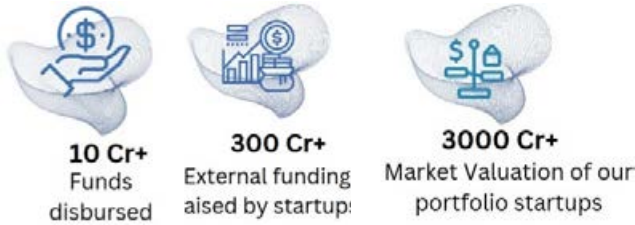


has a track record of supporting successful ventures in various sectors, fostering entrepreneurship and innovation.

Overall, TIDES has incubated over 150 deep tech startups across India. These startups are working on innovative solutions to some of the most pressing challenges facing the country.

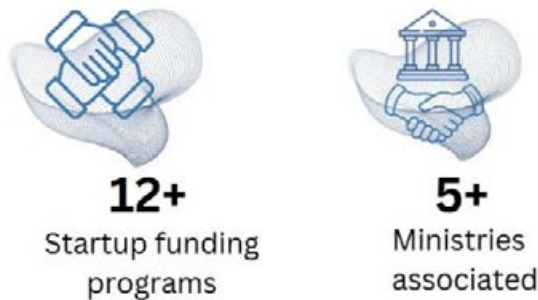
TIDES has positively impacted more than 12,000 beneficiaries through its innovative initiatives. The incubator has supported over 35 life science and allied startups, 115 technology startups, and 25 women-led startups. TIDES has also equipped startups with over 60 advanced lab instruments, supported over 75 patents, and disbursed over 10 crore funds. The incubator’s portfolio startups have achieved a remarkable market valuation of over 3000 crore.





**Funding and Acquisition**

TIDES is running 12+ startup funding programs in collaboration with more than 5 ministries such as DST, MEITY, BIRAC etc.



**Partnerships & Collaborations**

TIDES’ partnerships with over 50 partner ecosystems help to create a strong and vibrant entrepreneurship ecosystem in India. These partnerships provide entrepreneurs with the resources they need to succeed, and they help to promote innovation and economic growth.

**50+**  
Ecosystem partners



**iHUB DivyaSampark, TIH, IIT Roorkee**

iHUB DivyaSampark a section 8 company (Non-Government Organization) is a Technology Innovation Hub, at IIT Roorkee was set up as a result of 2019 union budget announcement under National mission NM-ICPS initiated by Department of Science & Technology (DST) to build innovative solutions, to train manpower and encourage entrepreneurship for the world’s current challenges. It aims to promote and enable interdisciplinary, collaborative, and translational innovation in smart devices, materials, technology and the broad area of cyber-physical systems.

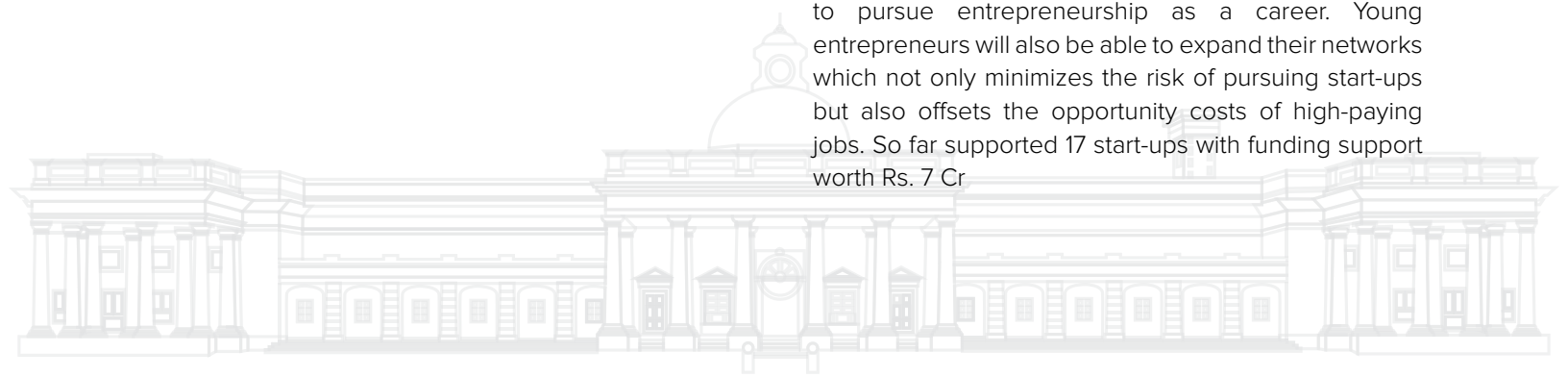
**Focus Area:**

- Affordable health care
- Industry 4.0
- Sustainable smart cities

**Activity Focus Area:**

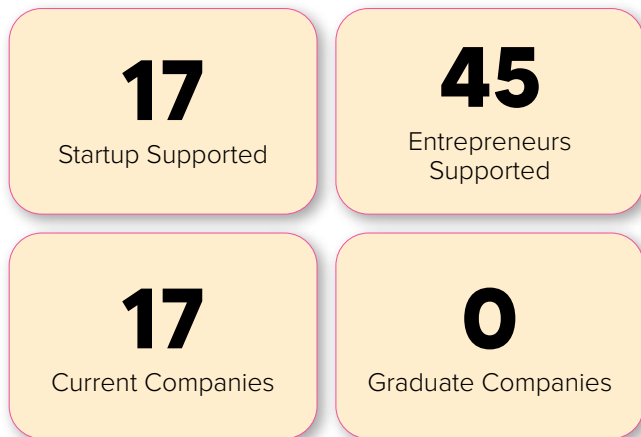
- **Entrepreneurship**

We encourage and support young entrepreneurs to pursue entrepreneurship as a career. Young entrepreneurs will also be able to expand their networks which not only minimizes the risk of pursuing start-ups but also offsets the opportunity costs of high-paying jobs. So far supported 17 start-ups with funding support worth Rs. 7 Cr



We provide support via:

- Incubation Support
- Acceleration Program (up to Rs. 2Cr)
- Seed Funding (up to Rs. 50 lakhs)
- Entrepreneurship-in-Residence (EIR)



\*All companies are not graduate as all our on its initial stage.



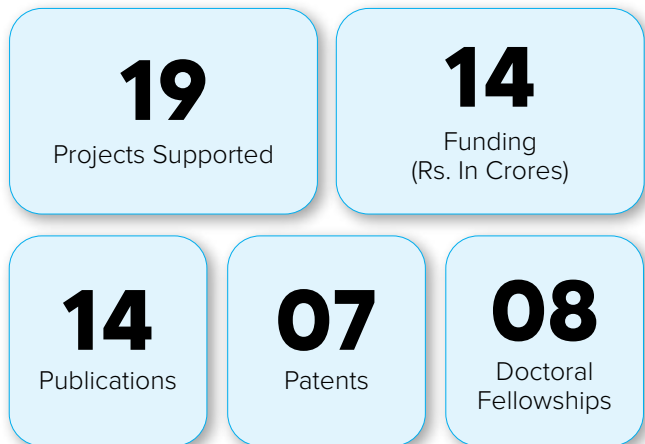
Our one startup Evigway Technologies Pvt. Ltd. selected as one of the Top 35 Startups in “Emerging Technologies” by the Ministry of Electronics & IT, Govt of India in “Digi-Week 2022”

Our Two startups DTown Robotics Pvt. Ltd & TechXR making into the list of top 30 deep-tech startups



## Technology/Product Development

iHUB DivyaSampark works as a bridge between Indian academia and industry, encouraging disruptive technologies to benefit the masses by identifying the need for technology in CPS and developing a solution based on the same



Also supporting **150+ young** and innovative minds via Chanakya UG Fellowships

## Skill Development

The iHUB DivyaSampark initiative prepares young people in less-developed areas for technological and digital changes in the future. We also provide students with the opportunity to interact with experts from academia and industry through a variety of short-term training programs.

So far, we have trained **8000 + Students & Faculties** via training programs in emerging technologies.





All these activities are focused on New-age smart technologies (CPS), including IoT, Robots, Drones, AI, ML Blockchain, and similar smart devices for Industry 4.0, Smart cities, and Digital health.

These efforts have established a **research base of 120 individuals in cyber-physical systems** and **generated 144 job opportunities.**

## INTERNATIONAL COLLABORATION

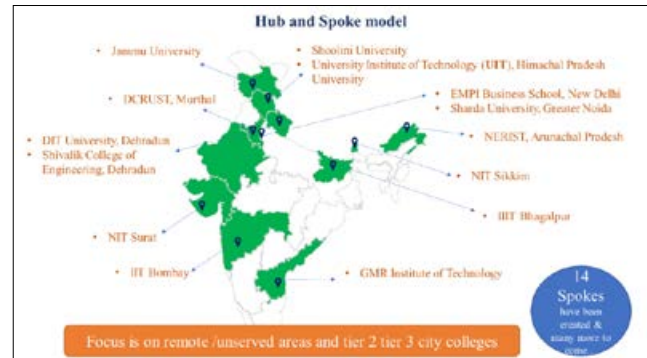
### Microelectronics and Information Research Centre, NYCU, Hsinchu, Taiwan

- Top-up Fellowship for Dual-Degree Program in semiconductor devices is launched in association with IIT Roorkee.
- Skill Development Program for the semiconductor industry is being discussed.

#### Alliances (Hub Spoke Model)

We firmly believe that innovation knows no bounds and can originate from any corner of the world and up until now, we have established 14 spoke hubs, which

serve as extension arms of iHUB DivyaSampark and IIT Roorkee. These spokes are predominantly established in remote regions, aiming to ensure that innovation can reach a wide range of individuals.



## Awards received by the Startups associated with the Institute

- Powerzest had been selected by AICTE India Council for Technical Education) and the Ministry of Technology's Innovation Council to showcase their ground-breaking technology at the National Technology Week, a prestigious event organized by the Government of India.
- National Health Agency (NHA) report highlights a ground-breaking innovation in eye screening: Logy. AI (TIDES's startup) Eye Screening Solution!
- Ovolo IT Building Solutions Pvt. Ltd. ('Ek Inch' application) has signed a MoU with Construction Skill Development Council of India (CSDCI) to enhance the skill development landscape in the construction industry.



- Ednam Solutions Pvt. Ltd. has received funding of 26 lakhs through the prestigious Startup India seed Fund Scheme (SISFS)
- Invitante Solutions Pvt. Ltd. (Gofresh) has been selected as one of the promising startups under the prestigious NextGen Startup Challenge Contest (CHUNAUTI 4.0) organized by Next Generation Incubation Scheme (NGIS)
- Bhoomicam Pvt. Ltd. has been selected among the top 5 best startups in the Indian Geospatial Industry under the esteemed GW Startup Catalyst program. As part of this recognition, they have been awarded a prize of \$10,000 for a media, communications, and outreach package pro bono.
- Indi-Energy has been selected to represent India at Viva Tech 2023, Europe's biggest exhibition for startups and technology!
- In just 11 months, Hypekar Pvt. Ltd. has provided exceptional services to 125+ clients across Dehradun, Uttarakhand, and achieved a revenue of 4.5 lakhs.
- Log9 Materials, the pioneers in graphene-based nanotechnology, have been making waves recently with their latest project named India's first EV cells.
- Indienergy have participated in Elecrama Award 2023 and showcased their products/technologies related to sodium batteries and won the first prize of Rs 10 lakhs in Electraverse Sparks Competition at the prestigious Elecrama Award 2023.
- Prof. Sidhartha Khare, founder of Bhoomicam Pvt. Ltd. incubated at TIDES, IIT Roorkee, has been awarded research project funding of 76.10 lakhs by the IIT Bhilai Innovation and Technology Foundation (BITF).
- Tri-OM adaptive solutions has been selected under the Startup Srujan Seed Support (S4) Programme to Build their prototype on - DNA-D Construction Technology. Recently, they also got the funding of 20 lakhs under "Startup India Seed Fund".
- E3Biocleantech Pvt. Ltd. for winning the best startup award at Uttarakhand Udyog Mahotsav (UKUM-2023) held on 18th March at Quantum University.
- Institute Innovation Council Regional Meet 2022: IIT Roorkee received the best poster award for the finest Innovation Ecosystem.
- Clean-tech start-up Log9 incubated at IITR has bagged the 'Best EV Tech of the Year' award by the Society of Manufacturers of Electric Vehicles (SMEV) in Delhi.
- Jaan Innovation Pvt. Ltd., our accelerated start-up awarded "Company of the Year" 2021 by CIO magazine.
- Heal-Agnostic startup has been featured among the top 25 Innovative companies of 2020 in the CII Industrial Innovation Awards 2020.
- Seismic Hazard and Risk Investigations Pvt Ltd, another start-up by IITR won India-Israel Industrial R&D and Technology Innovation Fund (I4F) worth 6.0 Cr.
- Greengrahi Solutions got various achievements such as being selected among top 10 start-ups at Europe's biggest accelerator Program Climate KIC, been awarded Nidhi Prayas Grant 2020, Awarded Kellogg Social Impact Grant in Evanston, US 2021 and awarded Zell fellow's program by Kellogg school of management, U.S.
- Vidcare Innovations for winning the P&G Health Vision Award at SLINGSHOT2021 @ Singapore Week of Innovation & Technology.
- Indi Energy – an Indian Institute of Technology (IIT) Roorkee, startup has won the prestigious National Startup Awards 2022 in the category of 'Energy Storage.'
- Brainovative Pvt Ltd is developing VANI, a wearable silent speech assistive device converting muscle response to voice, winning the National Innovation Contest 2020 and receiving a Rs. 6,00,000 grant.
- Indi Energy team, TIDES, IIT Roorkee-based startup, working in the space of Na-ion Battery Technology. The startup won the First prize (10 lakh rupees) in DRDO, Ministry of Defence, Govt. of India Dare to Dream 3.0, open innovation challenge, nationwide. Also won the first prize in the Spark Startups Competition at Electroama Award 2023 for their Sodium-ion battery technology.



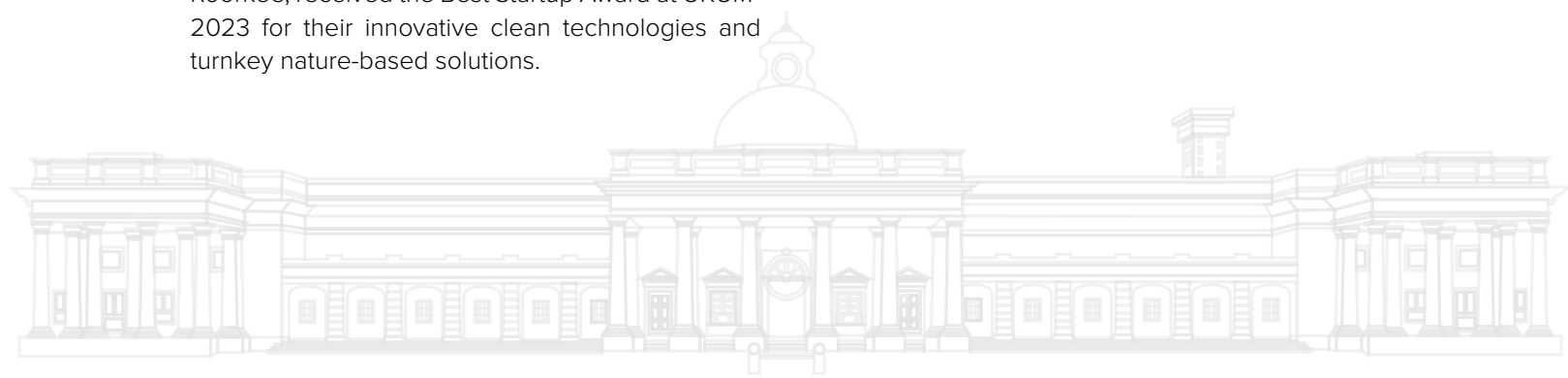


- UMA ROBOTIC TECHNOLOGY, RavenEye Geospatial Pvt. Ltd., and Indi Energy were recognized at DEFEXPO\_2022 for their innovative contributions in the defense sector.
- During IUHC2022, Vivek Prajapati founder, TRI-OM Adaptive Solution presented their construction technology to dignitaries, garnering significant interest in the innovation.
- Fermentech Labs, incubated at TIDES Business Incubator, IIT Roorkee, emerged as winners of the AgLIVE 2022- Innovators Pitch Competition organized by CII FACE.
- Startup Bhoomicam Pvt Ltd., incubated at TIDES Bio Incubator, secured first place in the AABTonics 2022 competition and received a Rs. 50,000 reward and pitching opportunity.
- The Startup Expo 2022 at IIT Roorkee showcased 129+ startups, inspiring young entrepreneurs to use deep technologies for addressing real-world issues and achieving "Make in India innovative" solutions. Among 129+ start-ups supported at IITR, Indi Energy, Cypher and Super Good Nano AI incubated at TIDES, IIT Roorkee secured the winning position of "Best Startup Award in the Startup Expo 2022."
- TIDES-incubated startup NSMR Pvt. Ltd. secured Rs. 55.50 lakh funding from NRDC's Technology Development and Commercialization APEX Program for their solid liquid bio-Nano materials in healthcare.
- Log9 Materials, a startup founded at IIT Roorkee, raised \$40mn in funding, led by Amara Raja Batteries Limited and PETRONAS Ventures, valuing the company at \$250mn.
- Gohempture, a startup incubated at TIDES, IIT Roorkee, qualified for the BIG Grant from BIRAC 2022, advancing their market-ready hempcrete building technology.
- E3BioCleanTech Pvt. Ltd., incubated at TIDES, IIT Roorkee, received the Best Startup Award at UKUM-2023 for their innovative clean technologies and turnkey nature-based solutions.

## Other Prominent Institute Awards

Following are the awards received by IIT Roorkee in terms of getting recognized for the Academics, R&D and other activities.

1. Department of Architecture, IIT Roorkee has emerged at Rank #1 in the National Institutional Ranking Framework (NIRF) Rankings for 2023. This is the third consecutive time IIT Roorkee Architecture department has been ranked #1 in NIRF India ranking.
2. CII Innovation Award 2022: IIT Roorkee has been conferred the CII Innovation Award 2022 as the most Innovative Technical Institution of India along with the Grand Jury Award. IIT Roorkee has received this award for the third consecutive year.
3. IP Questel Award 2022: IIT Roorkee received the Questel Intellectual Property Excellence Award 2022.
4. In NIRF Innovation Ranking 2023, IIT Roorkee has secured 5th position for the third consecutive year.
5. Eat Right Campus award 2022: IIT Roorkee has bagged it the Eat Right Campus award 2022 from the Food Safety and Standards Authority of India (FSSAI)



# Administration Affairs

The Office of the Dean (Administrative Affairs) oversees the Institute's administration processes and services as well as manpower management for non-faculty and non-project employees (permanent, temporary, and outsourced). In light of this, the agency is in charge of developing regulations for administrative structures/links, evaluation of staffing/manpower needs at various levels, defining duties/ responsibilities and authority levels, job functions/profiles, recruitment policies, career/promotion stages, and allocating and sanctioning of optimal manpower resources to various units, as well as related staff hiring/recruiting. Department wise list of academic staff is provided here. Additionally, kindly refer to the list of non-teaching officers below.

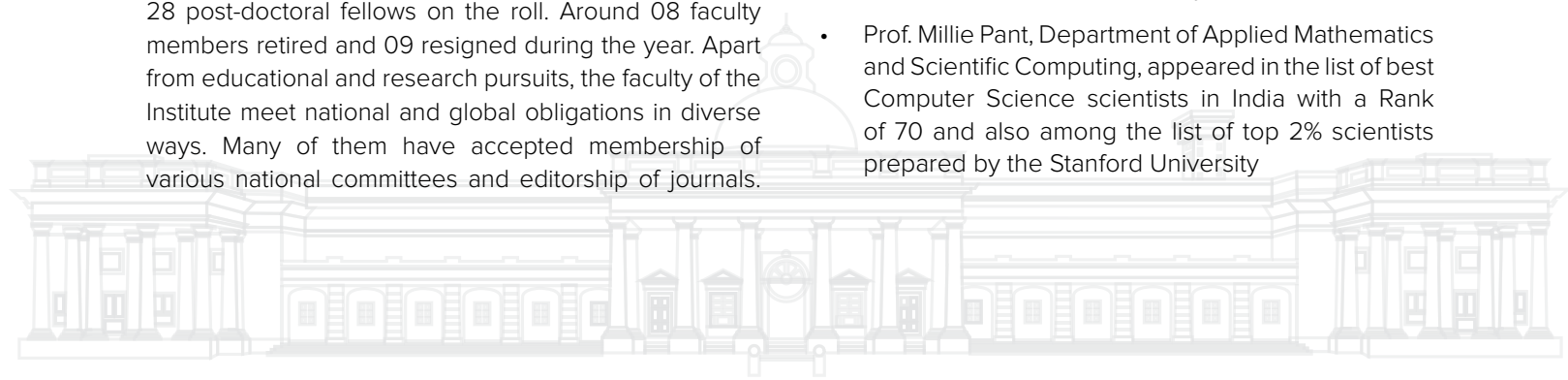
Sr. No.	Month	Group			Staff Count
		A	B	C	
1.	April 2022	0	0	0	0
2.	May 2022	0	11	32	43
3.	June 2022	0	18	43	61
4.	July 2022	0	1	2	3
5.	August 2022	0	1	2	3
6.	September 2022	0	4	0	4
7.	October 2022	0	0	8	8
8.	November 2022	0	1	2	3
9.	December 2022	0	2	3	5
10.	January 2023	3	0	1	4
11.	February 2023	0	1	0	1
12.	March 2023	0	0	3	3
Total		3	39	96	138

## Faculty Awards & Recognition

During the year, 22 faculty members (13 Assistant Professor Grade I) on regular basis and 08 on Assistant Professor Grade II joined the Institute. The number of full-time faculty members on the roll of the Institute as risen to 515 comprising 180 Professors, Nil Professor (Contract), 125 Associate Professors, 173 Assistant Professors (Grade-I), and 37 Assistant Professors (Grade-II). In addition, there are 25 adjunct faculty members and 28 post-doctoral fellows on the roll. Around 08 faculty members retired and 09 resigned during the year. Apart from educational and research pursuits, the faculty of the Institute meet national and global obligations in diverse ways. Many of them have accepted membership of various national committees and editorship of journals.

They also review manuscripts for publications. We are proud that their efforts have received recognition in the form of many awards and distinctions, some of which are listed below:

- Prof. Gaurav Raheja, Department of Architecture & Planning, has been conferred the DAAD Research Ambassadorship for the second time at the Embassy of Federal Republic of Germany, New Delhi.
- Prof. Millie Pant, Department of Applied Mathematics and Scientific Computing, appeared in the list of best Computer Science scientists in India with a Rank of 70 and also among the list of top 2% scientists prepared by the Stanford University



- Prof. R. P. Singh, Department of Biosciences and Bioengineering, has been nominated as DBT-Nominee by Institute Biosafety Committee, FRI Dehradun.
- Prof. Kiran Ambatipudi, Department of Biosciences and Bioengineering, has been selected as fellow in the National Academy of Dairy Science of India
- Prof. Krishna Mohan Poluri, Department of Biosciences and Bioengineering, has been awarded with SERB Science and Technology Award for Research (SERB-STAR-2022) from SERB-DST
- Prof. Pranita P. Sarangi, Department of Biosciences and Bioengineering, has been awarded with Travel for Technique Award, American Association of Immunologists. USA. She was also featured in the "Women in STEM: Vanguard of India @75" published by Confederation of Indian Industry (CII) "on the occasion of 75 years of Indian Independence."
- Prof. Amit Agrawal, Department of Civil Engineering, has been awarded Outstanding young faculty for 2022 by Institute.
- Prof. Kaustav Chatterjee, Department of Civil Engineering, has been awarded the IEI young Engineer award 2022 by Institute of Energy.
- Prof. Anjaneya Dixit, Department of Civil Engineering, has been awarded Ramanujan Fellowship for 2022 by SERB.
- Prof. Sanjay Kumar Ghosh, Department of Civil Engineering, has been awarded Satish Dhawan Award for 2022 by Indian Society of Remote Sensing.
- Prof. Satyendra Mittal, Department of Civil Engineering, has been awarded International Academic Achiever Award for 2022 International Award Committee. In addition, he also awarded Teacher with highest potential in same year by Dubai University
- Prof. Indrajit Ghosh, Department of Civil Engineering, has been ASEM-DUO fellowship for 2022 by ASEM-DUO, South Korea
- Prof. Kamal Jain, elected as Vice President of the Executive Council of the Indian Society of Geomatics, by Indian Society of Geomatics.
- Prof. Siddhartha Khare, Department of Civil Engineering, has been awarded the Bronze Award for I- CON Contest with a Cheque of Rs. 10,000/-, by Indian Society of Remote Sensing (ISRS) at GEOSMART International Conference 2022. In addition, he secured first rank in AABTonics National Level Geospatial Competition and received a cash prize of Rs. 50,000/- by GIS multinational company AABSys IT.
- Prof. Praveen Kumar, Department of Civil Engineering, awarded with Best Paper on Road Research Award by Indian Roads Congress. In addition, he has been elected as President of India Nominee (Visitor's Nominee) by IIT Bhubaneswar, IIT Hyderabad, Academic Staff in NITs and IEST, Shibpur
- Prof. Anumita Mishra, Department of Civil Engineering, has been awarded the ASCE 2021 Reviewer Award by Journal of Hazardous, Toxic and Radioactive Waste, ASCE.
- Prof. Rajat Rastogi, Department of Civil Engineering, has been awarded with Best Paper Award on Sustainable Transportation by 2nd International Conference on Transportation Infrastructure Projects – Conception to Execution (TIPCE2022).
- Prof. Nikhil Saboo, Department of Civil Engineering, has been awarded with Certificate of Merit Award by 2nd Global Road Construction and Safety Conference.
- Prof. Narendra Kumar Samadhiya, Department of Civil Engineering, has been awarded the Indian Geolegend Award by Indian Geotechnical Society, Kochi during IGC- 2022.
- Prof. Ravindra Pandey, Department of Chemistry, has been awarded with Institute Young Scientist Award.
- Prof. Sayanti Chatterjee, Department of Chemistry, has been awarded DST-INSPIRE Faculty Fellowship Award.
- Prof. Debasis Banerjee, Department of Chemistry, has been awarded Bronze Medal by Chemical Research Society of India (CRSI- 2023).
- Prof. M. Sankar, Department of Chemistry, has been awarded Bronze Medal by Chemical Research Society of India (CRSI- 2023).
- Prof. M. Sankar, Department of Chemistry, has been elected as a Member, Board of Studies, by NIT Delhi.
- Prof. K K Pant, Department of Chemical Engineering, has been appointed as Editor of Chemical

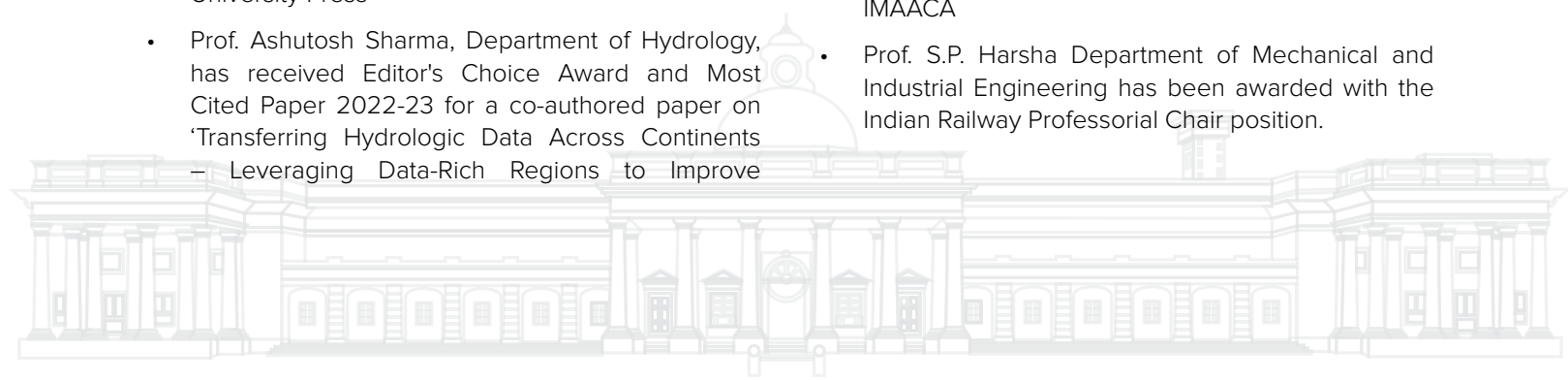
Engineering Science and Food and Byproducts Processing.

- Prof. Amit Dhiman, Department of Chemical Engineering, has been appointed as Editorial Board member of Heat Transfer. In addition he has been also joined as member of the editorial board of Journal of Computational and Applied Mechanics (JCAM), Hungary events
- Prof. Hari Prakash Veluswamy, Department of Chemical Engineering, has been awarded the Amar Dye Chem Award for Excellence in Research and Development in Chemical Engineering (under 35 years) in 2022 by Indian Institute of Chemical Engineers (IICChE).
- Prof. Hari Prakash Veluswamy, Department of Chemical Engineering, has been awarded the Shrimati Saroma Sanyal Memorial Prize (IEI).
- Prof. Shabina Khanam, Department of Chemical Engineering, has been awarded the Outstanding Teacher Award under UG category.
- Prof. Vimal Chandra Srivastava, Department of Chemical Engineering, has been awarded the Herdillia Award for “Excellence in Basic Research in Chemical Engineering”, by Indian Institute of Chemical Engineers (IICChE). In addition, he has been recognized as Top 2% Scientists, by Stanford University ranking. In continuation he has been appointed as Editor of Editor, Transactions of Indian National Academy of Engineers
- Prof. Shishir Sinha, Department of Chemical Engineering, has been awarded the CDS award, by Indian Institute of Chemical Engineers (IICChE)
- Prof. Sumana Ghosh, Department of Chemical Engineering, has been awarded Institute Research Fellowship for Outstanding Young Faculty
- Prof. N.S.M. Reddy, Department of Chemical Engineering, has been awarded Institute Research Fellowship for Outstanding Young Faculty
- Prof. P.P. Kundu, Department of Chemical Engineering, has been recognized as Top 2% Scientists, by Stanford University ranking
- Prof. R.P. Bharti, Department of Chemical Engineering, has been appointed as Associate Editor of Frontiers in Chemical Engineering
- Prof. Ranjana Pathania, Joint Faculty, Centre of Excellence in Disaster Mitigation and Management, has been elected as a fellow of the National Academy of Sciences, India, (NASI).
- Prof. Kamal Jain, Joint Faculty, Centre of Excellence in Disaster Mitigation and Management has been elected as ‘Vice-President’ of the Indian Society of Geomatics Executive Council (ISG-EC).
- Prof. Roopam Shukla, Centre of Excellence in Disaster Mitigation and Management, has joined the editorial board of Community Science Journal.
- Prof. Nachiketa Rai, Department of Earth Science, has been awarded with Outstanding Teacher Award 2022, IIT Roorkee.
- Prof. B.K. Maheshwari, Department of Earthquake Engineering, has been awarded with IAMSG John Baker Medal in 16th Int. Conference of the Int. Association for Computer Methods & Advances in Geomechanics, Torino, Italy.
- Prof. B.K. Maheshwari, Department of Earthquake Engineering, has been the part of a multi-institutional team constituted by USDMA (Uttarakhand State Disaster Management Authority) to undertake geological and geotechnical investigation around Joshimath town in Chamoli district of Uttarakhand. Had field visit to Joshimath during August 16-18, 2022 and January 5-7, 2023.
- Prof. Ravi Jakka, Department of Earthquake Engineering, received quadranial ‘ISET TG Sitharam Mid-career Research Award for Innovations in Geotechnical Earthquake Engineering’ in the year 2022 from the Indian Society of Earthquake Technology.
- Prof. Ritesh Kumar has been awarded as E4F Fellowship from Imperial College London, UK.
- Prof. Biplab Sakar
- Prof. R. Balasubramanian, Department of Computer Science and Engineering was awarded with Faculty Chair.
- Prof. R. Balasubramanian, Department of Computer Science and Engineering was awarded with Ramkumar Prize for Outstanding Teaching and Research 2022
- Prof. R. Balasubramanian, Department of Computer Science and Engineering was awarded

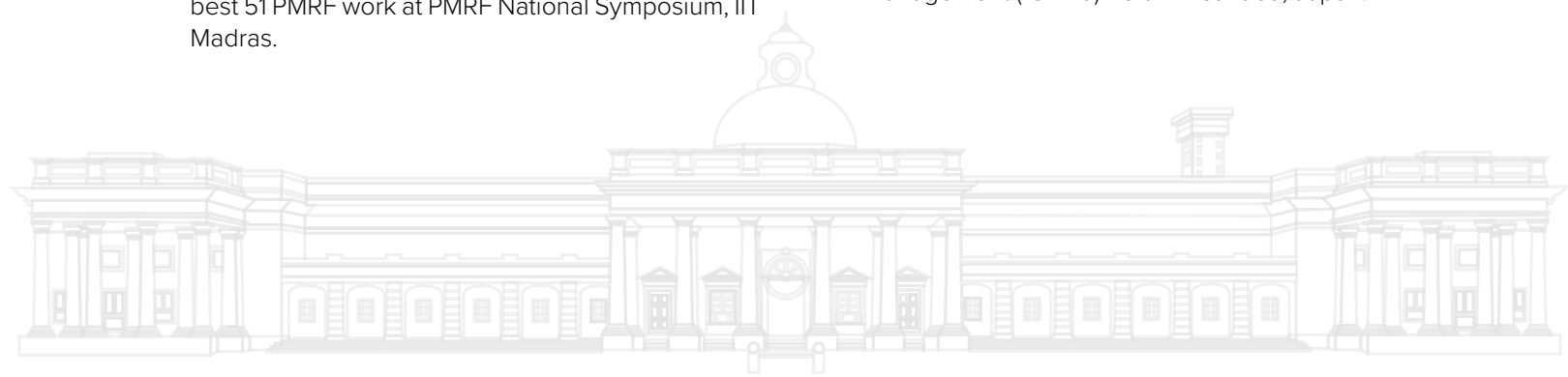
- with awarded with ICPC Coach Award in 45th International Collegiate Programming Contest, Dhaka, Bangladesh.
- Prof. Balasubramanian Raman, Department of Computer Science and Engineering, elected as Guest Professor/Visiting Researcher at Institute for Document Analysis Knowledge Science (IDAKS), Osaka Metropolitan University (Formerly Osaka Prefecture University), Osaka, JAPAN (Feb'20 - Mar'24)
  - Prof. Apurv Kumar Yadav, Department of Electrical Engineering, has been appointed as Associate Editor, IEEE Transactions on Transportation Electrification.
  - Prof. Abdul Saleem Mir, Department of Electrical Engineering, has been awarded with IEEE PES Technical Committee Working Group Recognition Award for Outstanding Technical Report.
  - Prof. G.K. Singh, Department of Electrical Engineering, Secured rank 2 in India and 563 world ranking (top 0.103%) in the area 'Artificial Intelligence', and 557 world ranking (top 0.103%) in 'Electrical and Electronics Engineering', in 2022 as per Stanford University Report.
  - Prof. N.P. Padhy, Department of Electrical Engineering, has been awarded with Global Lifetime Achievement Award for outstanding contribution to the Academics, Research, and the Society at The Maldives National University, Male City, Maldives.
  - Prof. Biplab Sakar, Department of Electronics and Communication Engineering, has been awarded with "New Faces in Compound Semiconductors" in, Compound Semiconductor Week 2022, University of Michigan, USA.
  - Prof. Gowrish Basavarajappa, Department of Electronics and Communication Engineering, has been awarded with RIDE Young Scientist of the Year Award – 2022.
  - Prof. Tharun Kumar Reddy Bollu, Department of Electronics and Communication Engineering, has been the winner of silver and gold medals in Epilepsy and MDD challenges, BIOMAG 2022
  - Prof. Meenakshi Rawat, Department of Electronics and Communication Engineering has received the Institute Research Fellowship (IRF).
  - Prof. Brijesh K Yadav, Department of Hydrology, received the Ramanujan Fellow award conferred by DST, Govt. of India.
  - Prof. Brijesh K Yadav, Department of Hydrology, has been selected for Association of Global Groundwater Scientists (AGGS)-Fellow award for his contributions in the areas of Groundwater Hydrology
  - Prof. Brijesh K Yadav, Department of Hydrology, has been nominated as the Chairperson of the "Expert Committee on Groundwater" by the Sikkim Government on the recommendation of the Honorable High Court of the state.
  - Prof. Brijesh K Yadav, Department of Hydrology, has been nominated as AGGS (Association of Global Groundwater Scientists) Fellow for his contributions in the area of Groundwater Hydrology.
  - Prof. Brijesh K Yadav, Department of Hydrology, has been elected 'Secretary General' of the Association of Global Groundwater Scientists (AGGS)
  - Prof. Brijesh K Yadav, Department of Hydrology, has been nominated as a member of the state committee of Dams Safety of Uttarakhand State.
  - Prof. Brijesh K Yadav, Department of Hydrology, has been nominated as the Chairperson of the "Expert Committee on Groundwater" by Sikkim Government on the recommendation of the Honorable High Court of the state.
  - PProf. Himanshu Joshi, Department of Hydrology, has been an invited Member, National Board of Accreditation, GOI.
  - Prof. D.S. Arya, Department of Hydrology, has been nominated as a member of the state committee of Dams Safety of Maharashtra State.
  - Prof. Manoj K. Jain, Department of Hydrology, has been nominate as a member of the state committee of Dams Safety of West Bengal State.
  - Prof. Sumit Sen, Department of Hydrology, has been selected to serve on the WMO HydroHub Think Tank for the next couple of years.
  - Prof. Sumit Sen, Department of Hydrology, has been nominated as a technical committee member for spring shed mapping of Indian Himalayan Region including mountainous regions of the country by Ministry of Jal Shakti, New Delhi.



- Prof. Ankit Agarwal, Department of Hydrology, has been awarded the 2023 Division Outstanding Early Career Scientist Awards of the European Geosciences Union (EGU).
- Prof. Ankit Agarwal, Department of Hydrology, has joined the Water security Journal as a guest Editor for Water Security for Sustainable Development.
- Prof. Ankit Agarwal, Department of Hydrology, has received SYSTA Award by IAHS at the IAHS Scientific Assembly 2022 at Montpellier.
- Prof. Ankit Agarwal, Department of Hydrology, has been nominated as a selection Panel member for the DAAD Falling Lab 2022. <https://www.dwih-newdelhi.org/en/event/falling-walls-lab-india-2022/>
- Prof. Ankit Agarwal, Department of Hydrology, has received DAAD Research Ambassador title in an orientation meeting on 18–20 September 2022 at the German Embassy New Delhi.
- Prof. Ankit Agarwal, Department of Hydrology, has been nominated as a technical committee member for the 8th R&D International Conference on “Global Trends in Water Resources, Power and RE Technologies”, from 20-23rd December 2022 at IIT Gandhinagar by the Central Board of Irrigation & Power, New Delhi.
- Prof. Ankit Agarwal, Department of Hydrology was the first Indian to receive the Outstanding Early Career Scientist Award from European Geosciences Union on 23-28 April 2023 for his contributions to the field of hydro-climatic extremes
- Prof. N.K. Goel was awarded Ravi Mohan Mangal Institute Chair Professor of IIT Roorkee.
- Prof. Ashutosh Sharma, Department of Hydrology, has joined the Water Security Journal as a guest Editor for Water Security for Sustainable Development.
- Prof. Ashutosh Sharma, Department of Hydrology, has been selected as Editor in the Editorial Board of Cambridge Prisms: Water Journal of Cambridge University Press
- Prof. Ashutosh Sharma, Department of Hydrology, has received Editor's Choice Award and Most Cited Paper 2022-23 for a co-authored paper on ‘Transferring Hydrologic Data Across Continents – Leveraging Data-Rich Regions to Improve Hydrologic Prediction in Data-Sparse Regions’ in Water Resources Research (WRR) journal
- Prof Arun Kumar, Department of Hydro and Renewable Energy awarded by Niti Aayog as a member for Advisory group, Increasing viability of hydropower projects in North eastern region
- Prof Arun Kumar, Department of Hydro and Renewable Energy awarded by Ministry of Power, as a member for Committee to increase viability for hydropower projects
- Prof Amit C. Bhosale, Department of Hydro and Renewable Energy, received "Invited Missionary" at University Paris Saclay.
- Prof Sonal K. Thengane, Department of Hydro and Renewable Energy, awarded SERB SIRE Fellowship, for working in Purdue University, USA.
- Prof. Ramesh Chandra, Institute Instrumentation Centre was felicitated for his contributions towards Developing Technology for DRDO by DRDO, New Delhi & by Hon'ble Defense Minister Shri Rajnath Singh Ji on 07.06.2023
- Prof. A Ramesh, Department of Management Studies has been awarded as outstanding teacher award in 2022.
- Prof. A. Tariq, Department of Mechanical and Industrial Engineering has been awarded the HAL Professorial Chair position.
- Prof B.K. Gandhi Department of Mechanical and Industrial Engineering has been awarded with the NHPC Professorial Chair position.
- Prof. D.K. Dwivedi Department of Mechanical and Industrial Engineering has been awarded with INSA Teachers Award 2022 by the Indian National Academy of Sciences
- Prof. P.M. Pathak Department of Mechanical and Industrial Engineering has been awarded with the Best Paper Award for “Path Planning and Control for Omni-directional Mobile Robot using Q-Learning and CLIK Algorithm for Home Environment” in IMAACA
- Prof. S.P. Harsha Department of Mechanical and Industrial Engineering has been awarded with the Indian Railway Professorial Chair position.



- Prof. Sneha Singh Department of Mechanical and Industrial Engineering has been honored as the "20 Young Women leaders in India in the year 2022" by British Council (selected for Platinum Jubilee Women in Leadership Program in South Asia).
- Prof. S. Ganpule Department of Mechanical and Industrial Engineering has been awarded with the Institute Research fellow.
- Prof. Varun Sharma Department of Mechanical and Industrial Engineering has been awarded with the outstanding young faculty, 2023.
- Prof. Anjan Sil, Department of Metallurgical & Materials was felicitated as Eminent Academician for his significant contributions to the field of Materials Engineering, in a "National Conference on Emerging Trends in Materials Chemistry (NCETMC)", Jiwaji University, Gwalior, during 27-28 February 2023.
- Prof. Debrupa Lahiri, Department of Metallurgical & Materials was felicitated as "CII-Women in STEMM" by the Confederation of Indian Industry.
- Prof. Anil Kr Gourishetty, Department of Physics awarded with "Sanskrita Vrati" by Central Sanskrit University, New Delhi
- Prof. Soumitra Satapathi, Department of Physics received Fulbright Faculty Fellow on Climate Change and Fellow of Energy Institute (FEI)
- Prof. Davinder Kaur, Department of Physics honored with Institute Chair Professor.
- Prof. Dharm Dutt, Department of Paper Technology, honored by Gujrat Paper Mills Association with a cash of Rs. 1.50 lakh and a Memento.
- Prof. Subhash Chander Sharma, Department of Paper Technology, conference paper has been selected for the best paper award at IEEE International Conference Organized Graphic Era Deemed to be University, Dehradun.
- Prof. Chhaya Sharma, Department of Paper Technology, One of the Ph.D. work is selected in the best 51 PMRF work at PMRF National Symposium, IIT Madras.
- Prof. Kirtiraj K. Gaikwad, Department of Paper Technology, Received FSSAI Research Award 2022 from Food Safety & Standards Authority of India (FSSAI), Prize includes a certificate of excellence and a cash prize of 5 lakh INR
- Prof. Pradip Maji, Department of Polymer and Process Engineering received the JSPS invitational fellowship of Japan.
- Prof. Gaurav Manik, Department of Polymer and Process Engineering, invited as visiting faculty at Khalifa University, Abu Dhabi, UAE.
- Prof. Sham S Ravindranath, Department of Polymer and Process Engineering, received the Prof. B. B. Pandey Memorial Award by Hon'ble Minister for Road Transport & Highways, Mr. Nitin Gadkari Ltd.
- Prof. M. L. Kansal, Department of Water Resources Development and Management received Best Poster Paper Award during the IWA World Water Congress & Exhibition, Copenhagen, Denmark.
- Prof. M.L. Kansal, Department of Water Resources Development and Management received Best Paper Award in International Conf. on Innovation in Smart and Sustainable Infrastructure (ISSI-2022), in Gandhinagar.
- Prof. Ashish Pandey, Department of Water Resources Development and Management served as Chairman, The Institution of Engineers (India), Roorkee Local Centre.
- Prof. Ashish Pandey, Department of Water Resources Development and Management served as Executive Vice President (HQ), Indian Water Resources Society (IWRS).
- Prof. Ashish Pandey, Department of Water Resources Development and Management served as Editor, Indian Journal of Soil Conservation.
- Prof. Mohit Prakash Mohanty, Department of Water Resources Development and Management received the International Travel Grant from UNESCO for attending the 9th International Conference on Flood Management (ICFM9) held in Tsukuba, Japan.



# Students Affairs

In 2022–2023, students maintained an elevated sense of responsibility and discipline while performing exceptionally well academically. We at Student Affairs have adapted to many fresh approaches to work and have operated steadily to help students live balanced lives in harmony with their teachers, other students, and families. By enabling re-boarding gradually, it was made sure that the fresher's could adjust to their surroundings without difficulty. At the start of the academic term, orientation programmes were organised. The counselling service offered advice to students on issues relating to their personal lives, challenges resulting from financial difficulty, and psychological and emotional issues that were interfering with their academic goals. All of the activities done by Student Affairs is done with the aim of supporting students' academic endeavours as well as encouraging general personality development, realising their potential, and supporting their ideas, with a focus on responsible student leadership.

## Student Affairs Council (SAC)

The Students Affairs Council is active throughout the academic year around. Regular meetings are held by SAC officials to guarantee that all pertinent information about student issues is covered. In order to increase student involvement in Institute matters, the representatives communicate with student senators and members of other SAC committees. Many student-related issues were addressed and resolved in the years 2022–2023 as well as new initiatives. Here are a few examples of these:

### Bhawan App:

Successful Implementation of Bhawan App Project in association with IMG under the guidance of CCB Chairman for proper grievance redressal mechanism of all issues faced by Bhawan Inmates. Bhawan App has Data of all the students of Bhawan, complaint redressal system, Online guest room booking, Timings for all the Bhawan workers and staff and Bhawan Notice Board and calendar for each student

### Appetizer:

The Appetizer app has been updated with a digital Mess system, focusing on quality assurance and user experience. The app has been implemented in 12 messes, providing real-time menu views and leave applications. With 5000 active users, the app generates a rebate of 10 lacs annually, potentially reducing financial burdens and improving mess operations.

### Bhawan Monitoring Committee:

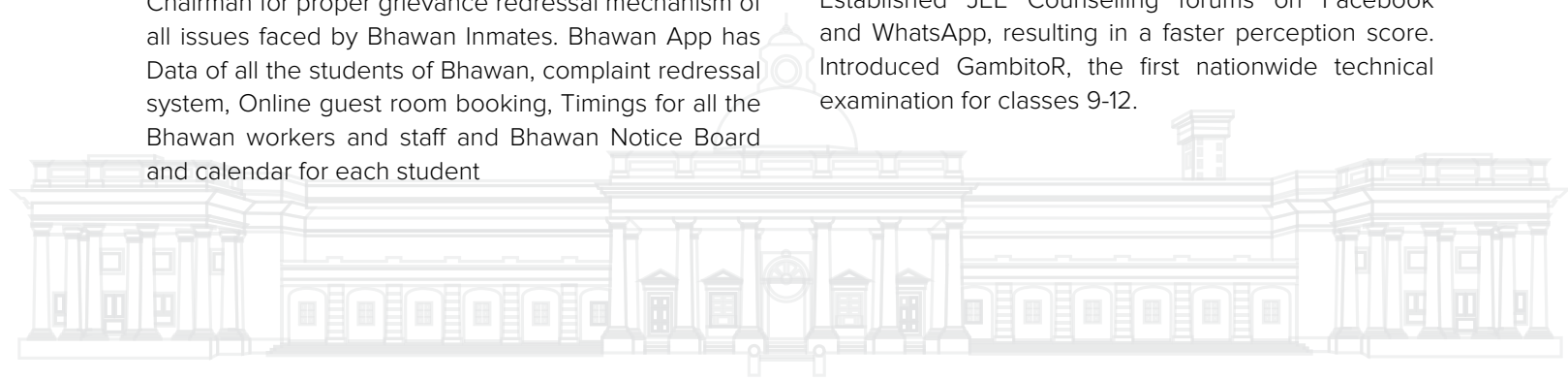
The Bhawan Maintenance & Monitoring Committee addresses student representative challenges by conducting regular checkups and surprise visits to ensure compliance with fire safety, health, hygiene, and performance norms. The committee's active participation in inspections prevents health and hygiene irregularities and aids the Office of Dean Administration in identifying construction-related problems

### Mess Monitoring:

The Mess & Canteen Monitoring Committee is established to address mess quality and standards in food outlets. The committee conducts regular checkups and surprise visits, with active participation from chief wardens. This prevents health and hygiene irregularities, improving students' perception of mess quality and enforcing FSSAI norms.

### Outreach Cell, IIT Roorkee:

Led the students' run Outreach cell to improve IIT Roorkee's academic reputation among JEE qualified and appearing students. Visited coaching institutes in Kota, Chandigarh, Hyderabad, and Indore, invited top 250 JEE Advanced students, held an open house, and utilized social media platforms. Sought college information and spoke with KOTA counsellors. Established JEE Counselling forums on Facebook and WhatsApp, resulting in a faster perception score. Introduced GambitoR, the first nationwide technical examination for classes 9-12.





## Wellness Centre

The Wellness Centre comprises a dedicated team of professionals committed to supporting the well-being of IIT Roorkee community. The Wellness team at IIT Roorkee has provided 3135 counseling sessions, with 984 new registrations and 2151 follow-ups. They have organized events like orientation programs, online training, and the opening of the Biofeedback facility and Brain Gym room. They have also provided physical hearing aids to students with hearing disabilities, enhancing their communication abilities and overall well-being. In June 2022, the team organized an interactive group session on exam stress, an expert talk program on mental health issues, a seminar for married research scholars, an open-mic night event, seminars on digital detox and productive mind training, and a Mentors' workshop to enhance participants' mentoring skills. The team has played a crucial role in promoting mental health and well-being among students and staff at IIT Roorkee.

The Student Mentorship Program (SMP) is a student-run initiative that aims to induct freshmen undergraduates into the institute ecosystem by assigning experienced senior students to mentees. The program includes activities such as mentor recruitment, mentor workshops, ice-breaking sessions, and the introduction of branch coordinators. Mentors are provided with a mentor guidelines handbook, and a departmental cross-mentorship drive is organized to avoid monotony and generate interactions. Mentor evaluations are conducted annually to assess mentors' performance and effectiveness in guiding their mentees. Career Talks are annual events designed to help students explore diverse fields and develop a better understanding of various career paths. The SMP Web Development team is working on a new official website and is working on a new initiative called the SMP-AMP Collaboration. Campus Connect is a mobile application designed to facilitate communication between first-year students and SMP mentors at IITR. It features features such as uploading meeting data, providing feedback, and a mentor search function. The app also features SMP core team members who can be contacted with queries.

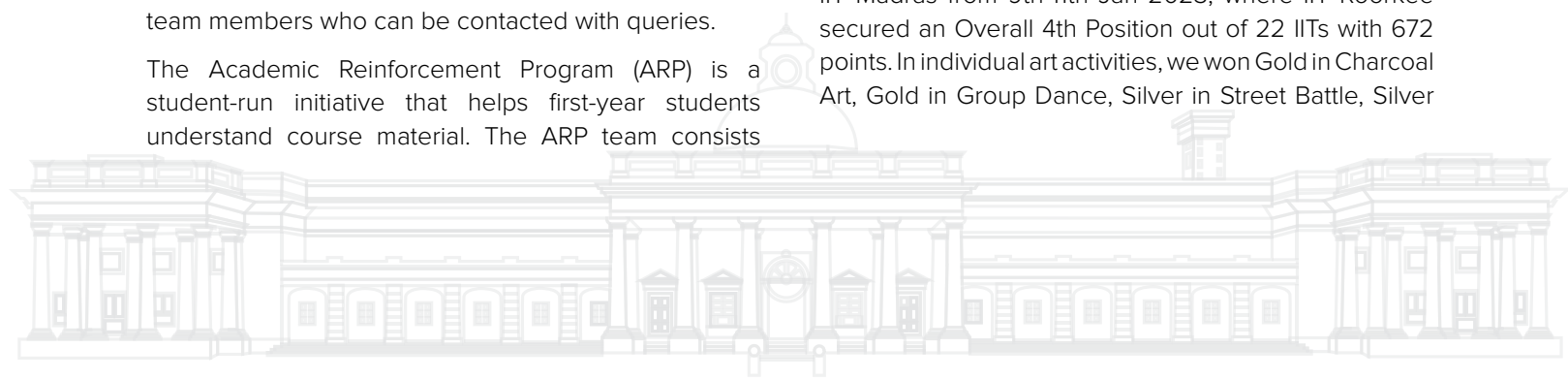
The Academic Reinforcement Program (ARP) is a student-run initiative that helps first-year students understand course material. The ARP team consists

of undergraduate teaching assistants (UGTAs) with a CGPA of at least 8 and good communication skills. They receive feedback from freshmen students and track their progress through regular meetings. The program has conducted various events this year, including a webinar on GATE and competitive exams, a Progate Orientation Session, a Demystifying CAT webinar, and a Gateway to Study Abroad seminar. The Web Development team is constantly improving the website, and social media handles have been covered during the academic year 2022-23. The team also works on team wellness, which consists of undergraduate and postgraduate students, research scholars, and Bhawan assistant wardens. They help students reach out to mental health professionals and provide support for those hospitalized for psychological/psychiatric reasons. The Students' Aid Committee (StAC) was established in 2017 to provide financial support to needy students in financial distress. The total institute-approved financial assistance recommended during the financial year 2022-2023 was Rs 3,08,39,211/-, with 418 students receiving financial aid this year.

## Cultural Society

Cultural Council or Cultural Society, popularly referred to as 'Cul-Soc,' is a student body responsible for all the cultural events in the institute. Currently, there are 15 active cultural groups under the Cultural Society. Students under the Cultural Society participated in national level activities. India's largest Digital Arts festival was organized by the Film and Media Council (FMC) of IIT-BHU, where students from On-Rec and Photography sections won first (Rant it, Infinite Tales) and second positions (Trim it up, straight from site). IRMUN (International Republic Model United Nations) group won the best delegate (1st Position) as Russia in MUN-IIT BHU and 3rd and 5th positions in ICFAI Dehradun. Among several academic institutes, Choreography Group won the Footloose competition in Thomsos'22.

IIT Roorkee participated in Inter-IIT Cultural Meet 5.0 at IIT Madras from 9th-11th Jan 2023, where IIT Roorkee secured an Overall 4th Position out of 22 IITs with 672 points. In individual art activities, we won Gold in Charcoal Art, Gold in Group Dance, Silver in Street Battle, Silver





Best Delegate as Russia at MUN-IIT BHU

in Canvas Painting, Silver in Costume Design, Bronze in English Slam Poetry, Bronze in Improvisational Comedy, and Bronze in STEW. Our Choreography group won the Dance Arts Cup with the highest score considering all dance forms. As feedback from the inter-IIT Cultural meet, two new groups, namely “Fashion” and “Improve,” were created to provide expression to these art forms, which are being practiced in other premier institutes. Celebrating the great presence and progress of India in G20, with the theme of the event - “Vasudhaiva Kutumbakam,” a three-day exhibition “DARPAN 2023” was organized by the Fine Arts group from 24th March 2023- 26th March 2023.



Winners of Inter-IIT Cultural Meet 5.0.



Darpan 2023 by Fine Arts

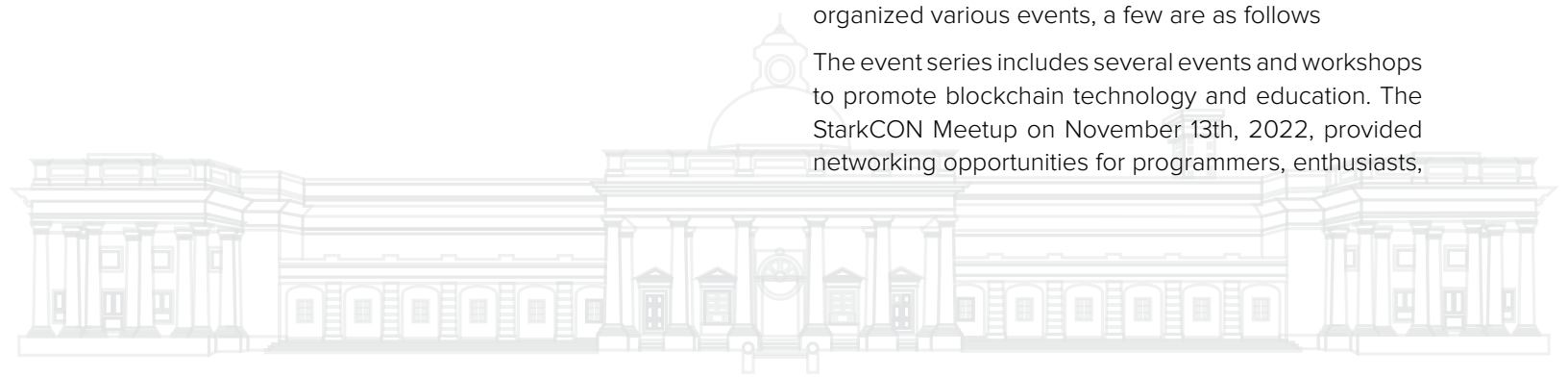


Performing arts festival activities by various cultural groups

## Technical Affairs

**Blockchain Society:-** There are currently 44 members in the Blockchain Society IITR. The society have been organized various events, a few are as follows

The event series includes several events and workshops to promote blockchain technology and education. The StarkCON Meetup on November 13th, 2022, provided networking opportunities for programmers, enthusiasts,



and future creators of CAIRO in the web3 ecosystem. The Lumos X Blockchain Society on December 15th, 2022, offered beginner-friendly sessions on web3, blockchain, and NFTs. WAGMI x BlocSoc on December 27th, 2022, introduced Siddharth Chinoy, VP of engineering at Mudrex, about Web3.0 and launched WAGMI, a student-led Web3.0 community in top-tier colleges. In January 2023, BlocSoc held an intro talk for IITR freshers, introducing them to the world of blockchain technology. The Summer of Bitcoin Experience with Shashwat Vangani on January 10th, 2023, provided an online session for students aiming to participate in the Summer of Bitcoin 2021. Workshops on January 16-20, 2023, covered Saylor Academy's Course PRDV 151: Bitcoin For Everybody, introduced Solidity, and Azure Dev Day. A recruitment talk and test were held on March 11th, 2023, to help freshers explore career opportunities in blockchain and how BlocSoc can assist them in their professional growth. Blogs on April 4th, 2023, provided insights into the Elliptic Curve Digital Signature Algorithm, while lectures on April 12th and May 10th, 2023, shared opportunities with Web3 and the Inter-Computer Protocol (ICP) blockchain.

**Projects:-** Inter IIT Tech Meet 11.0 : Metamask Snaps, Wagbi, Refi Next, WageWiseX, Satchel, Cross Chat, TransiFy, BlockGpost, EAStore, Quantum NFT Bridge

**BlocSoc Achievements:** Team members won ETHIndia 2022 grand prize, "Best DeFi Project" in Polygon Track, Graph Prize Pool, Connex Track, Push Protocol Pool Prize, and zkBob Track. MIT Bitcoin Club members won MIT Hackathon twice, earning \$2500, 1000, and 1000 prizes. Inter-IIT tech meetup gold medal, ETHForAll FVM track 18th, and \$1500 prizes. Members have secured numerous fellowships, including Summer of Bitcoin, yAcademy Fellowship, ETHIndia Fellowship, Polygon Fellowship, ETHIndia Grants, Des Femmes Mentorship, and Starkware Grants.

#### Competitions:

- A 48 hour long Hackathon, conducted during Cognizance 2023. It was an open themed hackathon, where participants built web3 applications to win fellowships worth Rs. 3 Lakhs.



- Collaborating with E-summit'23, we hosted a Web3 hackathon where students eagerly competed for a chance to win Rs. 2,00,000 in prizes. Their enthusiastic participation aimed to find inventive solutions to our problem statements.



**ACM Student Chapter:-** There are currently 03 groups ACM - 26 Members. QCG - 30 Members, BlocSoc - 44 Members and VLG - 25 Members. The society have been organized various events, a few are as follows

The QCG has organized various events and workshops to promote the field of quantum computing. These include Open Projects, Amazon Braket Workshops, PaAC x QCG Student Talk Series, Dead & Alive Hackathon, QCG Intro Talks, StarkCON Meetup, Workshop on AI Generated Art, Talk on Peek into the Contemporary AI Era, VLG Intro Talks, VLG Recruitment Talks, Project Discussions, Foundational Discussions, and Decoding Research Internships. Open projects have been implemented, with 20 projects completed. These projects focus on various topics, such as BB84 protocol, VQA, quantum memories, quantum teleportation, Amazon Braket Workshops, and many more. Research paper discussions have been conducted on various topics, such as quantum analogues, quantum memories, and quantum teleportation. Advance discussions on Authentication of Hybrid PUFs have also been conducted. QCG Recruitments 2023 have been conducted, with 9 1st and 2nd year UG students being recruited. Members of QCG publish blogs and Qbytes to keep the public updated on the latest developments in the quantum sphere. Workshops on AI Generated Art have been held to explore the principles and techniques behind creating art using AI algorithms. Talks on Peek into the Contemporary AI Era have explored the possibilities and potential challenges in the AI field. VLG Intro Talks have provided an introduction to deep learning and its applications in various fields. Recruitment Talks have introduced freshers to deep learning topics and provided opportunities to apply for VLG core teams. Fundamental discussions have focused on various AI topics, empowering individuals with the necessary basic knowledge to navigate further in these fields. These discussions cover topics such as generative modeling, vision and language models, trustworthy machine learning, federal learning, and reinforcement learning. SMP's Career Talks featured Jitesh Jain as a speaker, discussing undergrad research and his journey. VLG presented AI Manga Generation and Sensorium projects at Techzibition, a technical exhibition hosted by STC. Online demos were also showcased.

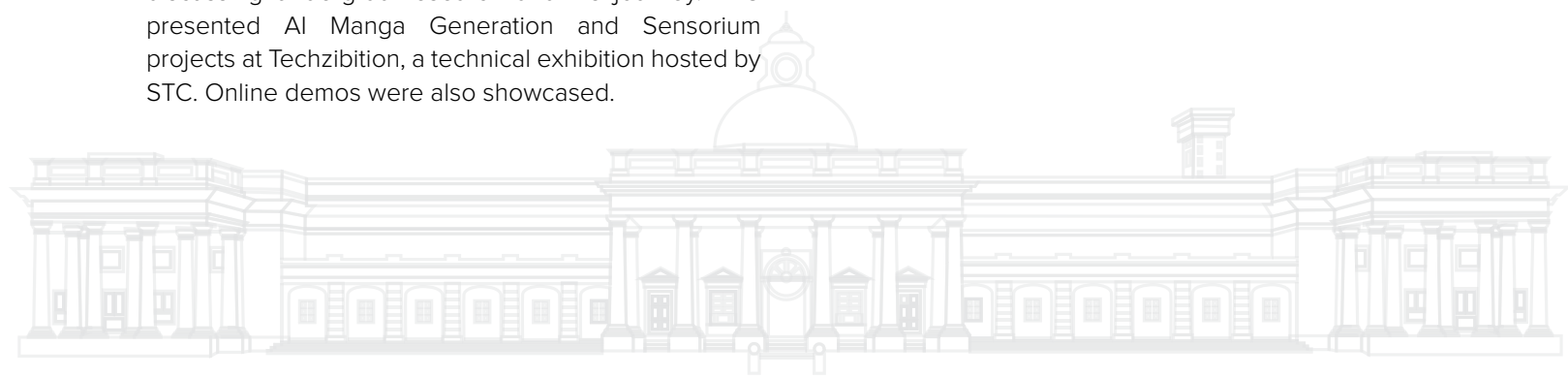
**Projects:-** Quantum Machine Learning, Quantum Hardware: Superconducting Qubits, Using RNN to assist optimization of Quantum Neural Nets, Quantum State Preparation and **Forward-Forward Project**

**Competitions:** Various competition were organized including QHack'23, Quantum Science and Technology Hackathon 2022, IBM Quantum Challenge 2022 and Quantum Lock: A Provable Quantum Communication Advantage

**Achievements:-** "OneFormer's Universal Image Segmentation and Neural Implicit Surface Reconstruction from Noisy Camera Bservations are accepted in CVPR 2023, AAAI STUDENT ABSTRACT 2021, NEURIPS 2022, DevRev, Grow Simplee, and CloudPhysician.

## MOTORSPORTS

IIT Roorkee Motorsports is a technical group that participates in the world's largest Inter-Collegiate Engineering competitions, Formula Student and FSAE, by designing and fabricating an open-wheel formula-style electric race car. The team has participated in various events, including the EV Expo 2022, Daimler India Commercial Vehicles Hackathon 2022, and Thomso. In January 2023, they won the MathWorks Modelling Award and participated in the Formula Bharat competition. In February 2023, they organized an Intro Talk for first-year students and showcased their vehicles at the Uttarakhand Udyog Mahotsav. In April 2023, they unveiled their new formula-style race car, RMSE 23, at a ceremony attended by IIT Roorkee's Director. In July 2023, they made a comeback at FSUK, achieving notable results, including first among Asian teams in Engineering Design, Cost and Manufacturing, and Top 3 overall.



## iGEM

The team won the Gold Medal at the CRISPRLY iGEM Competition in Paris, developing a rapid, sensitive diagnostic kit for high-risk HPV detection. They worked for over a year to develop a webapp and machine learning model for predicting guide RNA binding accuracy. The team participated in the All India iGEM Meet 2022, winning the Best Education Award and networking with other Indian teams. CRISPRLY was presented at the Inter IIT Tech Meet 2022-23 and received the Best Paper award. The team collaborated with UBA, AIIMS Rishikesh, and Stony Brooks University to spread awareness about cervical cancer. CRISPRLY was published in an international journal and a news service. The team also received a Promega Grant worth 2000USD to aid their experiments.

## Design Studio

The design studio has been involved in design branding for various cult, tech, and sport meet-ups across Bhawans. They have also participated in the Pan-IIT Design Association, which aims to form collaborations and events on an independent scale for design. They have proposed new events for design in Inter IIT tech and cult meets and have represented IITR in design-specific problem statements at Inter IIT Cult Meet. The studio has participated in competitions such as World Usability Day Design Challenge, VIT Palette, and has represented IITR in various cultural and technical fests. They have also participated in GODOT Game Jam, winning the “Best Gameplay” award last year. The studio plans to go outside IITR for industry projects and has hosted guest lectures by alumni from top design companies. They have also hosted workshops, including AfterEffects, Illustrator, Photoshop, and Blender, with over 200 participants. The studio has also participated in competitions and hackathons, such as the 72-hour design hackathon HEXCODE and the 48-hour branding sprint. The 55th Inter IIT Sports Meet branding project involved a 3-4 month-long project, delivering a website, mobile app, banners, flexes, posters, handbook, medals, certificates, and jerseys.

## ENACTUS

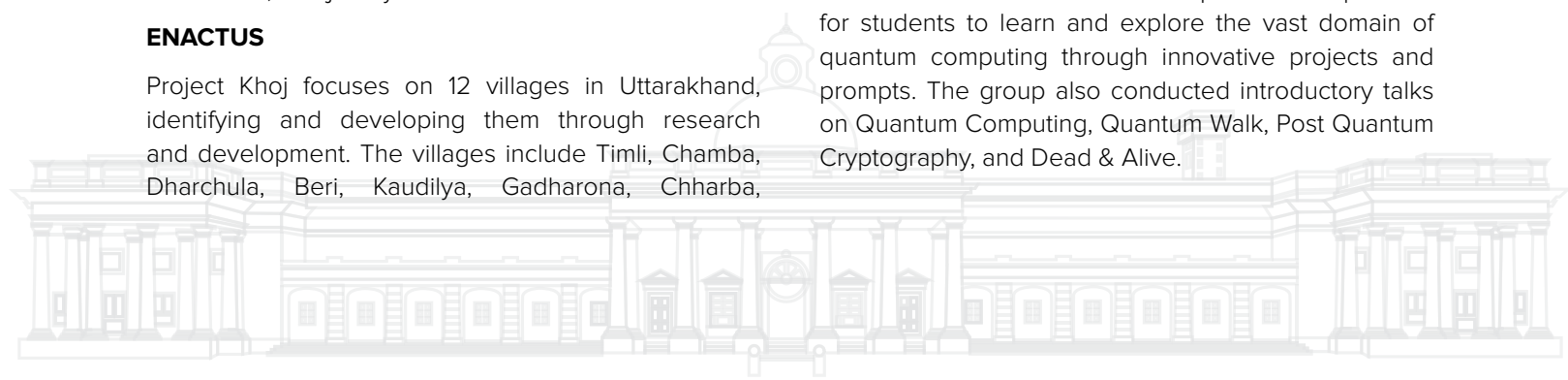
Project Khoj focuses on 12 villages in Uttarakhand, identifying and developing them through research and development. The villages include Timli, Chamba, Dharchula, Beri, Kaudilya, Gadharona, Chharba,

Kumati, Talwari, Dhikuli, and Chakrata. The project has conducted on-paper reports on the market, tourism attraction, regional, religious, and traditional aspects. The project has also discussed with the Panchayat of Gadharona village, exploring tourism potential and the unexplored places. The project has also conducted corporate level interactions with companies, business travel, target customers, and developed a unique selling proposition. It has also received support from the Indian and Uttarakhand Tourism Ministry. Articles and blogs about the visit to Timli have been released. Project ARK has focused on creating products from flower waste, prototyping bamboo-less incense sticks, and researching patents. The project has visited Haridwar for market research and has collaborated with various temples and NGOs for employment. Project Anushruti has launched an extension for video calling and plans to build a business model by charging a fee per month or the number of hours used. The project has also participated in events like Enactus Nationals, Inter-IIT Tech meet, and Hultz Prize.

## Quantum Computing Group

The Quantum Computing Group (QCG) is a student-run group at IIT Roorkee, aiming to instill and elevate the culture of quantum computing among its 25 members.

The Quantum Computing Group (QCG) organized open projects for students to complete over a four-week period. Two projects were released, based on Grover's Algorithm and MEV protocol, and 20 projects were completed. The group also conducted online discussions on BB84 protocol, Variational Quantum Algorithms (VQA), and quantum teleportation. QCG collaborated with AWS-Amazon to conduct workshops on quantum algorithms and their implementation on QPUs and HPC hardware using Amazon Braket. QCG also collaborated with the Physics and Astronomy Club (PaAC) to conduct seminars on Many-Body Quantum Theory and its implications in Quantum Computation and Information. The annual Qiskit Fall Fest Hackathon, “Dead & Alive,” was held in collaboration with IBM Qiskit in IIT Roorkee. The hackathon provided a platform for students to learn and explore the vast domain of quantum computing through innovative projects and prompts. The group also conducted introductory talks on Quantum Computing, Quantum Walk, Post Quantum Cryptography, and Dead & Alive.



**Projects:-** Quantum Machine Learning improves NP-Hard problems accuracy using QAOA. Quantum Hardware studies transmon qubits' Hamiltonian and qubit control, implements basic gates on Qiskit Pulse, and optimizes Quantum Neural Nets using RNNs, CNNs, and graph NNs. Quantum State Preparation uses uniformly controlled rotation gates.

**Achievements:-** QCG members secured 34th rank in QHack 2023, QHack 2022, and QHack 2022, with a quantum solution for accelerating genome mapping. They also participated in IBM Quantum Challenge 2022, an annual challenge. We use the optimal classical machine-learning attacks to forge both the CPUFs and HLPUs, and we certify the security gap in our numerical simulation for construction which is ready for implementation.

### Software Development Section

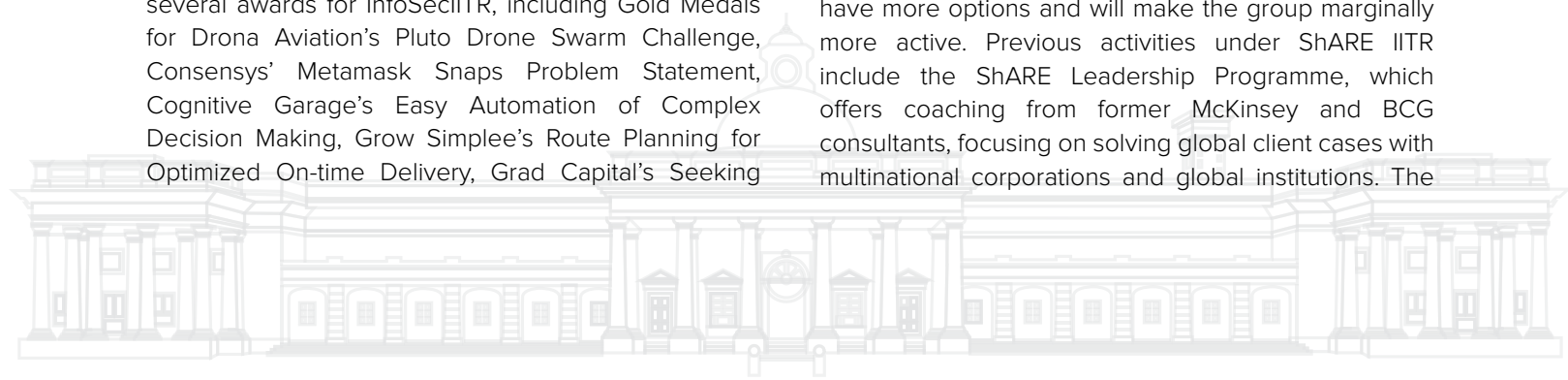
The Winter off Code is a month-long coding extravaganza for freshers, preparing them for GSoC proposals and selection. The Syntax Error Hackathon is a 2-3 day overnight hackathon promoting innovation culture on campus. The Blogathon is an event where students write blogs on their favorite machine learning models, sharing their knowledge and insights with the wider community. Bring Your Own Project is a month-long sprint where individuals try to manifest their ML project proposals with code. The Global Game Jam is an offline site for the world's largest game jam event. Makers is a month-long event where students work on curated ideas or bring their own plans to life. Lectures and workshops are offered throughout the year, including Linux Party, Introduction to Development, Web Development, JavaScript, and more. Competitions include Hackentine CTF, Backdoor CTF, Algophobic, Noobematics, Numberphile, n00bCTF, Codeblitz, Insomnia, Endgame, Project Gauss, Starter's Hypothesis, and Code-off. Applications have been launched, including playCTF, Quizio, Beast, Vibe, Enchant, AMMR, ISLR2Julia, and Al Kavach.

**Achievements :-**The Inter IIT Tech Meet 2023 saw several awards for InfoSecIITR, including Gold Medals for Drona Aviation's Pluto Drone Swarm Challenge, Consensus' Metamask Snaps Problem Statement, Cognitive Garage's Easy Automation of Complex Decision Making, Grow Simplee's Route Planning for Optimized On-time Delivery, Grad Capital's Seeking

Secrets to Startup Stardom, The Paradime Product Challenge, and more. The LFX Mentorship Program and MHL Fellowship Selections were also recognized. The Solana India Fellowship Program was a hands-on 8-week program for developers to learn to build on Solana, the fastest blockchain in the world. IIT Roorkee consistently bagged the highest GSoC selections globally, with a majority of members being members of SDS. InfoSecIITR secured 6th place globally in Hackday CTF Qualifiers 2023 and qualified for the final rounds in Paris. SDSLabs was the overall winner at ETHIndia Hackathon 2022 and won 2 sponsor tracks. Three teams from India qualified for the Sejong CTF 2023, achieving 1st place in both CSAW CTF 2022 qualifiers and finals. The Data Science Group (DSG) members published research papers in numerous international conferences, including AAAI, WACV, ACM Multimedia Asia, Microsoft Membership Inference Competition, and CSAW 2022 Embedded Security Challenge. Team "Kaala Khatta" won the ICPC Gwalior - Pune regionals, representing IIT Roorkee and India in the ICPC World Finals in Egypt.

### Society of Business (i-ShARE)

The IIT Roorkee community is increasingly interested in management consulting, making it a highly desirable career path. The Society of Business IITR plays a crucial role in nurturing the campus community's passion for consulting and other business-related fields by spearheading various enriching activities throughout the year. They take the initiative in organizing domain-specific events and competitions, aiming to foster a strong community of adept problem solvers and bolster the flourishing culture on campus. The collective vision is to empower students with essential skills and create a cohesive network of individuals who excel in tackling challenges and finding effective solutions. Recently, ShARE IITR was rebranded to Society of Business IITR to cater to not only Management Consulting but also other allied domains like Product Management and Data Analytics. This will give the students in the group higher career-related incentives as they will have more options and will make the group marginally more active. Previous activities under ShARE IITR include the ShARE Leadership Programme, which offers coaching from former McKinsey and BCG consultants, focusing on solving global client cases with multinational corporations and global institutions. The



programme aims to enhance students' initiative-taking abilities and foster an entrepreneurial spirit. Junior team members are tasked with preparing consulting presentations within a 4-week timeframe, focusing on diverse problem statements from various sectors, such as Energy, Technology, Mobility, and the Global Economy. Intra-ShARE involves teams of 5 forming teams of 5 and receiving guidance from 3 mentors. Collaborations include the Consulting and Analytics Club IIT Guwahati, Associate Dean of Corporate Affairs and Data Science Group IITR, and TiDES IITR. Startup projects include Food Darzee, ALYF, Let's Transport, Ekinch, and Business Baazigar. On-campus initiatives include the Leadership Programme, PM Mentorship Program, Business Baazigar, and Business Baazigar. These initiatives aim to develop students' skills, create a cohesive network of individuals, and foster a strong career path in management consulting and other business-related fields.

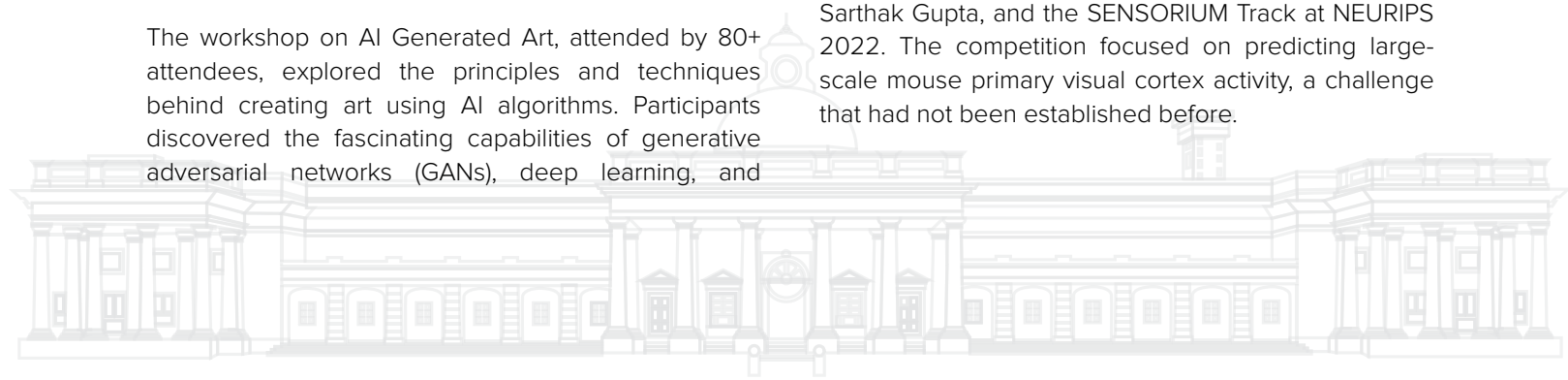
The campus community has introduced two new verticals, Product Management and Data Analytics, alongside the existing Consulting vertical. These verticals focus on consulting, data analytics, and product management, aiming to cultivate a comprehensive business culture and foster a well-rounded business mindset among students. A comprehensive in-house curriculum was developed for each vertical, incorporating hands-on projects and expert input from alumni and industry professionals. These verticals aim to provide students with opportunities to explore diverse areas and develop skills in various business domains.

**Achievements :-** The individual has won numerous awards, including national finalists in KPMG ideation challenges, ZS Campus Beats Challenge, B-Plan competition, Ericsson Innovation Award, and "Trash to Treasure" hackathon. They have also won silver medals in various tech entrepreneurial competitions, supply chain case studies, product case studies, and case study challenges. They have also won gold and silver medals at the 11th InterIIT Tech Meet.

### **VISION AND LANGUAGE GROUP**

The workshop on AI Generated Art, attended by 80+ attendees, explored the principles and techniques behind creating art using AI algorithms. Participants discovered the fascinating capabilities of generative adversarial networks (GANs), deep learning, and

computer vision in the context of art generation. The talk also discussed the remarkable possibilities and potential challenges in the world of AI, highlighting how AI has transformed various fields like healthcare, transportation, and finance. The ethical implications of contemporary AI and its impact on society were also analyzed. An intro talk was conducted for IIT Roorkee students, introducing VLG and its achievements. A recruitment talk was conducted for freshers, introducing them to deep learning topics and their future scope. A recruitment test was conducted to shortlist candidates and test their knowledge on topics such as deep learning, machine learning, and thinking ability. Project discussions covered topics such as model inversion attacks, image restoration, neural radiance fields, OpenAI Whisper, mechanistic interpretability, Language Models (LLMs), and GANs. The event provided an opportunity for attendees to learn about AI and its potential applications in various fields. The conference focused on fundamental AI topics, aiming to empower individuals with the necessary basic knowledge to navigate further in these fields. The sessions covered topics such as generative modeling, vision and language models, trustworthy machine learning, federal learning, and reinforcement learning. VLG and ArIES hosted a seminar on "Decoding Research Internships," where Dhruv Grover guided students on pursuing research internships in programs like MITACS, DAAD, and EPFL. Jitesh Jain delivered an informative session on pursuing research as an undergrad. VLG presented two projects for Techzibition, AI Manga Generation and Sensorium, and presented online demos. Open projects were released in various AI domains to help people explore deep learning and resume building. Four projects were released: AI image detection, image matching, multilingual recommendation model, and stable diffusion. The Forward-Forward Project (March'23 - Present) explored new ways to build and train neural networks. Achievements and competitions included "OneFormer: One Transformer to Rule Universal Image Segmentation" by Jitesh Jain, "Neural Implicit Surface Reconstruction from Noisy Camera Observations" by Sarthak Gupta, and the SENSORIUM Track at NEURIPS 2022. The competition focused on predicting large-scale mouse primary visual cortex activity, a challenge that had not been established before.



## E-Cell

E-Cell IIT-Roorkee, established in 2006, aims to promote entrepreneurship among India's youth by fostering ideas and providing guidance in the startup ecosystem. With 80 members and two secretaries, the team has organized events and initiatives in 2022-23. Despite the pandemic, E-Cell IIT Roorkee has shifted its focus to interactive offline activities, attracting over 2500 students. The team has conducted interactive programs like Sector Analysis, Weekly AMA, and Startup Internship Session, with a team size of 90+ members. As the world returns to normalcy, E-Cell IIT Roorkee will continue to offer engaging, interactive learning and fun activities for its members and the entire Rland Junta, spreading entrepreneurial culture on campus.

**Events:-** The Endeavour Entrepreneurship event, organized by E-Cell IIT Roorkee, was a five-day competition for first-year UG and PG students. Over 275 students participated, including brainstorming sessions, workshops on Business Model Canvas and Pitching, and a final pitching round. The event celebrated the perseverance and struggles of entrepreneurs to bring value or create value from preexisting things. Other competitions include IdeaStorm, Productathon, Saleable, Investor's Vista, Design Case Challenge, and Campus Ambassador Program. The event received over 1000 applications and 764 selected, with the best ambassadors receiving free attendance at E-Summit and internship opportunities in startups participating in the startup expo.

**Initiatives:-** The Entrepreneurship Club IIT Roorkee is a student-run organization that aims to provide a conduit for members to access entrepreneurial resources, network with community entrepreneurs, and share ideas. The mission is to foster entrepreneurship thinking, promote business knowledge, and technical skills, and enhance confidence among the members. The club hosts a series of discussions to solve problems faced by different teams, with an audience count of 7500+ people weekly. Startup Weekly Digest is a weekly email newsletter for IIT Roorkee students, keeping them updated on startups, fundings, acquisitions, partnerships, and announcements by the GOI. E-Network is a network for E-Cells from various colleges and universities, providing mentorship and networking opportunities. E-Community is a community

of like-minded individuals on WhatsApp and Discord, sharing daily newsletters and engaging with like-minded individuals. The Alum Talk Series is an initiative of Entrepreneurship Cell IIT Roorkee to spread awareness about alumni and their commendable work in the field of entrepreneurship. Five alumni have been given talks, including Aman Bhandula, co-founder Farmako, Akshay Singhal, Shivam Gupta, Lavika Aggarwal, Sonesh Jain, and Sambhav Jain. Delta IIT Roorkee is an opportunity portal that connects students to professionals in the outside world. It regularly updates IIT Roorkee students with new freelance projects, internships/jobs, upcoming competitions, and other opportunities from various companies and startups. The Summer Internship Programme (SIP) is an annual internship program organized by Ecell IIT Roorkee, connecting students with internship opportunities in various industries and start-ups. The event took place from April 9th-10th, 2022, and all processes were completed.

E-Cell IIT Roorkee offers intra-team webinar sessions in May to help young members learn the basics of the startup world. These sessions, led by experienced seniors, provide ideas to test new skills. Investor shoe is an intra-team activity where teams conduct market research and analysis for their respective startups in the Indian market. The sessions cover various sectors, including Agritech, Healthcare, Fintech, E-commerce, Fashion, and sports, providing in-depth analysis of industries, driving them, and niche sectors for growth. Weekly discussions aim to improve analytical skills and startup knowledge, with two people leading discussions on topics like Byjus, Lenskart, and Nykaa.

The E-Summit 2023 event featured various partners, including TIH and UNESCO, to boost participation. NPCI was the title partner, BLU Smart Mobility was the travel partner, and IVY Growth was the accelerator and consulting partner. Services partners included Give My Certificate, Yes Startups, Tricycle, Crater. Club, Zing Bus, Henry Harwin, and Media Partners Amar Ujala, The Times of India, and Entrepreneur India. Event partners included Productathon, Junior Hachathon, and Community Partners.

**Cognizance 2022** was a successful edition integrating virtual and in-person experiences showcasing the event's commitment to recognizing excellence in the





industry. In addition, Cognizance 2022 conducted several social initiatives, including food distribution drives called FIFA (Food Initiative for All), drives to raise awareness if single-use plastics, and Green Week, reflecting the event's commitment to promoting social and environmental awareness and responsibility.

**Thomso '22** - was organized after a three-year gap and surpassed all its previous editions in quantity and quality. Thomso '22 extended its outreach to renowned NGOs like Milan Foundation, DKMS BMST, PETA India, and CRY, who participated enthusiastically in events, generating awareness regarding sensitive societal issues. Thomso's association with these NGOs was based on its core values of creating awareness about social causes such as women's empowerment, child education, cancer patients, and poverty alleviation.

**Inter IIT Tech Meet 11.0:-** The Inter IIT Tech meet 11.0 was organised by IIT Kanpur from 10th to 12th February 2023. The event saw participation from 23 IITs. IIT Roorkee's contingent also participated in the meet and won 12 medals in the 13 problem statements (which was the highest by any IIT). Overall, IIT Roorkee was the first runner up and bagged Silver in in the General Championship.

**Techshila - Inter Bhawan Technical Meet:-** For the first time in IIT Roorkee an Inter Bhawan Technical Meet - Techshila was organised. The event included 8 problem statements spread over varied proficiencies which saw huge participation from all Bhawans. A two -day exhibition was also organized to showcase the various notable projects of all technical groups

## SPORTS COUNCIL

Sports and games are important components of human resource development because they promote excellent health and a spirit of healthy competition, which has an impact on student affairs. Youth have a positive and deep impact on the holistic development of their personality- a potential source of energy, passion, and creativity. Sports, as a practical method of education, promote recreation, develop social harmony, and instill discipline and dedication in general life. The Institute Sports Council (ISC) was in charge of this critical component for the development of the campus's sports environment. The Institute Sports Council (ISC) is a constituent body of the Student Affairs Council. It is responsible for

the coordination of the various sports activities in the institute. It ensures that adequate facilities are given to sports persons.

**Facilities:** - Inauguration of new lab, equipment, PVC flooring, wooden weightlifting platform, LED lighting, synthetic flooring in tennis, basketball, stairs, squash courts, fencing, and unisex restroom at LBS stadium.

**Notable Achievements:** 55th Inter IIT Sports Meet (for Students) held at IIT Roorkee & IIT Delhi, December 2022. IIT Roorkee won the Overall General Championship in 55th Inter IIT Sports Meet.

**Notable Achievers of the contingent in the Inter-IIT meet:** Badminton (Women & Men) – Gold; Athletics (Women) — Silver; Basketball (Women)- Gold; Cricket (Men) Bronze; Football (Men) Gold; Hockey (Men) Gold; Squash (Women) Bronze; Volleyball (Men) – Gold; Basketball (Men) – Gold; Volleyball (Women) – Bronze & (Men) Gold; Weightlifting (Men)- Gold; Athletics (Men)- 4th; Tennis (Women & Men) – 4th.

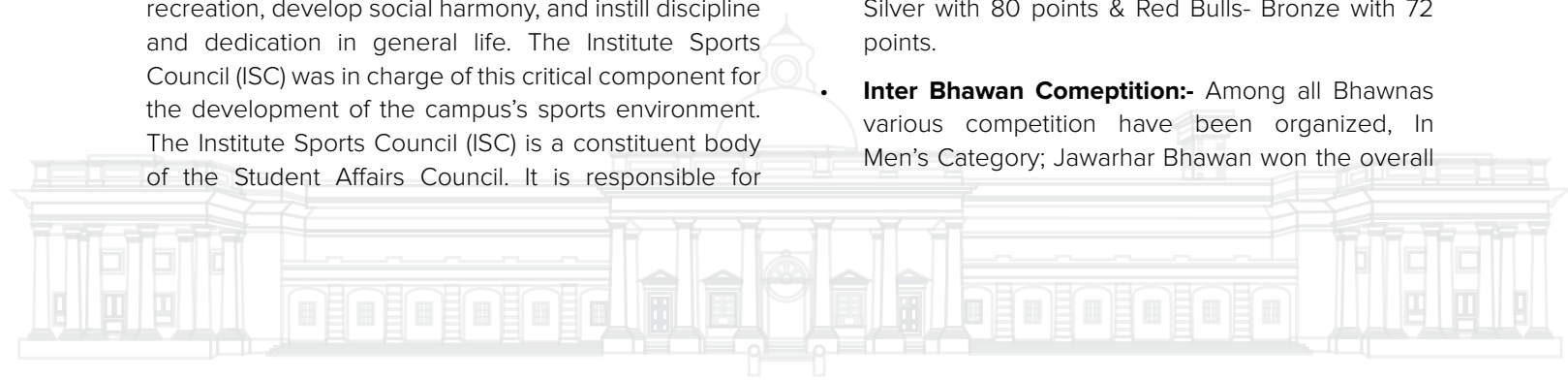
IIT Roorkee players have been achieved the best player Individual Award (Men) in 6 categories namely; Football, Hockey, Volleyball, Weight lifting, Badminton and Basketball.

Notable Achievers of the contingent in the Inter-IIT staff meet: In Badminton (Women) – Gold; Cricket (men) – Gold; Football (men) – 4th; TT (men) – 3rd; Athletics (men): 100 & 200 meters – Gold, Shot Put (Men) – Silver and Javelin Throw (Men)– Silver; Athletics (women): Silver in 100 meters. Long Jump (Women)-Silver

Notable Achievers of the contingent in the Aquatic meet: 36 th Inter IIT Aquatic Meet held in, October 2022; 100 M Back Stoke (Men)- Bronze; 100 M Butterfly (Men)- Bronze; 200 M Individual Medley (Men) –Bronze.

## Internal Competition

- Institute Colours Trophy Tournament & Open tournaments were conducted from January 2023 to March 2023. Blue Hawk team won Overall champions –Gold with 136 points, Black Mamba-Silver with 80 points & Red Bulls- Bronze with 72 points.
- **Inter Bhawan Comeptition:-** Among all Bhawnas various competition have been organized, In Men's Category; Jawarhar Bhawan won the overall



championship with 96 points (first), followed by Rajiv Bhawan with 76 points (Second) & Radha Krishna Bhawan with 72 points (third).

In Women's Category; Kasturba won the overall championship with 136 points (first), followed by Sarojini KIH with 96 points (Second) & Vigyan Kunj with 78 points (third).

- **Annual Athletic Meet:-** The meet has been organized for various competitions; long jump, pole vault, high jump, shotput, discus throw, javelin throw, 100- 500 m. The students have judged by all over performance and can be awarded with Lion's Trophy, Stampe Cup, Barnett Cup, Vijya Nagram and Krishna Hudda Cup.
- **Institute Open Championship:** - Various open championship have been organized in the year 2022-2023, the categories included Badminton (Men & Women), TT (Men & Women), Squash, Weightlifting and Power lifting. Students have performed remarkably in all categories.

## Alumni Awards

For the past several years, the following alumni awards have been bestowed to students for their outstanding performance in the respective areas.

- **KCPL AWARD FOR PLAYERS IN FOOTBALL & CRICKET:-** The award shall be given to the best cricketer of the year/best footballer of the year, to be decided on the basis of his performance in the Inter IIT Sports Meet. Rs. 10,000/- is to be awarded to the best cricketer and best footballer.
- **ANOOP SINGH KHURANA MEMORIAL TROPHY (FOR INSTITUTE SQUASH OPEN CHAMPIONSHIP) :-** A Trophy is to be awarded to the winner and runner of the institute open competition. Rs. 30,000/- and Rs. 20,000/- are to be awarded to the winner and runner respectively.
- **JAIKAMAL AWARD FOR THE BEST ATHLETE (MALE & FEMALE) OF THE YEAR :-** Jaikamal Award for the Best Athlete of the Year" established by Mr. Jai P Agarwal, an alumnus of the IIT Roorkee (BE-1959-Civil Engg.), In Rs. 10,000/- is to be awarded to the best athlete in the male and female categories respectively.

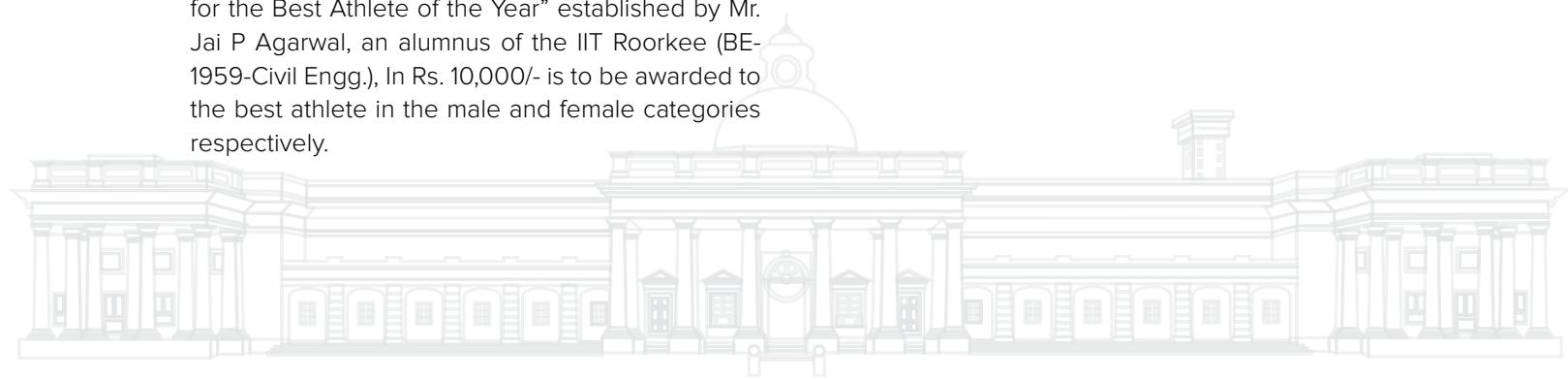
- **1968-BATCH AWARD FOR OVERALL BEST ATHLETE (FEMALE):-** The Award for overall Best Athlete (Female). Rs. 10,000/- is to be awarded.
- **DR. K.V. MITAL MEMORIAL AWARD (FOR MEN) FOR INSTITUTE TENNIS OPEN CHAMPIONSHIP :-** Dr. K.V Mital Memorial Award (for men) and Mrs. Sushila Mital Memorial Award (for women) cash Prize of Rs. 5000/- will be given to the Institute Open Tennis championship winners in the men & women categories.
- **1959 Batch Award for Excellence in Badminton:** 1959 Batch Diamond Jubilee Award for Excellence in Badminton of the year, established by Dr. Prem Krishna, an alumnus of the IIT Roorkee (BE-1959 Batch) specifically given a Trophy, to the winners and runners of the Institute open competition.

## Other Events organized by ISC-

- **Workshop on Cardio Pulmonary Resuscitation (CPR):-** The Institute Sports Council (ISC), in collaboration with the Indian Resuscitation Council Federation and the Indian Medical Association Roorkee branch, organized a Cardio Pulmonary Resuscitation (CPR) training workshop for faculty members, staff, and students at the Open Air Theatre of IIT Roorkee. During the Workshop the participants learned the vital techniques to provide a primary rescue service in the event of any emergency relating to heart during any sports activity or accident.

## Cinema Club

**Cinema Club came out of hiatus imposed by COVID period and "URI-The Surgical Strike" and "Rocketry: The Nambi Effect"** were screened for IIT Community on 13th August and 14th August to celebrate and commemorate 75 years of independence of India. Till March 2023, "Karthikeya" and "Bhediya" were screened as per popular demand and "Kantara" was screened keeping diversity of IIT Community in focus.



## Society for the Promotion of Indian Classic Music and Culture Among Youth (SPIC MACAY)

After being closed for two years, SPIC MACAY (Society for the Promotion of Indian Classic Music and Culture Among Youth) IIT Roorkee section has been very active in this session. SPIC MACAY IIT Roorkee chapter has organized workshops under ‘Dashank Shrankhla’ for students from various academic institutes near IIT Roorkee between 14th to 19th November as initialization workshops.



Workshops held under Dashank Shankhla

IIT Roorkee SPIC MACAY section organized Shruti Amrut as part of Azadi ka Amrit Mahotsav on 4th and 5th February 2023 under G-20, which was promoted by the Ministry of Culture. The event included excellent performances and interaction with artists such as Padma Shree awardee Ustad Shahid Parvez and Vidushi Hema Badthwal.

SPIC MACAY IIT Roorkee section has organized the biggest SPIC MACAY event of Uttarakhand, “VIRASAT,” from 6th February to 13th February, under G-20 activities. These performances included Sattriya dance form, flute recital, Qawwali, Kathak, and Carnatic Vocal art forms, along with workshops for Kalighat painting, Paper Mache and Sattriya Dance. Several children from schools near IIT Roorkee have attended these workshops.



Performances under Shruti Amrut Series



Virasat: A series of performances, interactions, and workshops.

## NCC

The National Cadet Corps is an organisation aiming at the development of leadership, character, comradeship, spirit of sportsmanship and the ideal of service, among the youth in educational institutions. The motto of NCC is “Unity and Discipline”.

On World Health Day, NCC IIT Roorkee organized a blood donation camp in collaboration with NSS IIT Roorkee, promoting door-to-door campaigns and bringing blood banks to the campus. A mass yoga event was held at Lal Bahadur Shastri Stadium, sharing basic yoga techniques and benefits. A visit to the Bengal Sappers, an Indian military regiment, was held to teach students about soldiers’ lives and ammunition. A rally was organized to celebrate 75 years of independence, raising awareness about ‘Vocal for Local’. A flag march was held on 12th August, urging people to participate in the ‘Har Ghar Tiranga’ campaign. A poster-making



competition was held for students of Adarsh Bal Niketan (ABN) school, and a fire simulation exercise was hosted. NCC Day celebrations included a blood donation camp in association with HDFC Parivartan as our contribution to society. NCC cadets participated in a one-week training camp, A run for Nation Marathon on the occasion of Swami Vivekananda's birth anniversary, attended a seminar on Army Day, and held a self-defense workshop at IIT Roorkee's Taekwondo Hall.

## NSS

NSS IIT Roorkee has organized various initiatives to promote national pride and freedom among young minds in Roorkee. These include the Quiz Competition "Udbhav: Swatantrata ka Sangrah" on Independence Day, the Plantation Drive to raise awareness about greenery and environmental conservation, the NSS Day visit to Bal Kunj Orphanage, the E-Waste Collection Campaign to address the growing issue of toxic electronic waste, and the Mind Over Matter initiative to provide emotional support. The Pragati test series, introduced in 2023, aims to assess students' knowledge, identify areas for improvement, and enhance their preparation for the upcoming JEE Main examination. The series was highly effective, with 15 students qualifying in JEE Main 2022, achieving over 90%ile scores. The Pragati test series also featured an interaction session on climate issues and Gross Environment Product by Dr. Anil Prakash Joshi, highlighting mental well-being and reducing stigma surrounding mental health issues. Campus MUN 1.0, organized by NSS IIT Roorkee, is an intellectually stimulating event commemorating National Youth Day. The Model United Nations (MUN) simulation fosters global citizenship, diplomacy, and active participation among young individuals. The event also hosted an inaugural Live Webinar on "Defensive Riding Techniques" to promote road safety during National Road Safety Month 2023. NSS IIT Roorkee also organized the Mock Road Safety Audit for National Road Safety Month 2023, in collaboration with iRAP, to raise awareness about road safety and promote proactive approaches to identifying and addressing potential hazards. The events also featured various events to commemorate National Road Safety Month 2023, including quizzes focused on various road safety themes, case study competitions, workshops, Slow Bike

Racing, and an Ideathon competition on "Don't Drive when Drunk." These initiatives aim to promote a culture of safety and adherence to road safety guidelines.



NSS IIT Roorkee organized various events to commemorate National Road Safety Month 2023, focusing on road safety themes, promoting a culture of safe practices, and promoting responsible behavior among individuals. The event included quizzes, case studies, workshops, and an Ideathon competition on "Don't Drive when Drunk." The webinar, hosted by Prof Mark Stevenson, focused on the intersection of safe and sustainable transport and population health. NSS IIT Roorkee also collaborated with FIAPPO to create

an inspiring webinar on "Farmed Animals and Us" and "Role of Youth in Protecting Street Animals." The event emphasized the importance of understanding and improving the relationship between humans and farmed animals, emphasizing compassion and ethical treatment. In February 2023, NSS IIT Roorkee organized an event on "Health and Hygiene" in Mubarikpur village near Hastinapur, showcasing students' artistic abilities and understanding the constitution. The National Social Summit 2023 was an annual event promoting social engagement, innovation, and creativity. The Mega Mentorship Program was launched to provide guidance and support to students from across the country, attracting approximately 250 students. The Education team at NSS IIT Roorkee organized a comprehensive program to assist students preparing for JEE and Navodaya entrance exams, including study materials, practice tests, and mock exams. The second Sustainability Conclave 2023 focused on sustainable futures and environmental conservation, featuring a Career Guidance Workshop and an Orphanage Visit.



## Himalayan Explorers club (HEC)

### 1. New Initiatives Undertaken

- Organizing Rock-Climbing Course: The institution has introduced a new initiative by organizing a rock-climbing course. This course aims to provide students with an opportunity to

learn and develop their skills in rock climbing. It promotes physical fitness, teamwork, and adventure spirit among the students. The course may include both theoretical and practical session, where participants will learn about climbing techniques and safety measures and practice climbing on artificial or natural rock surfaces.

- Trips to Engage Campus Students: Another initiative the institution took was organizing a trip to Jim Corbett National Park. This trip is intended to engage campus students in wildlife conservation, environmental awareness, and experiential learning. It provides students with an opportunity to explore the rich biodiversity of the park, observe wildlife in their natural habitat, and understand the importance of conservation efforts.

## 2. Important Achievements

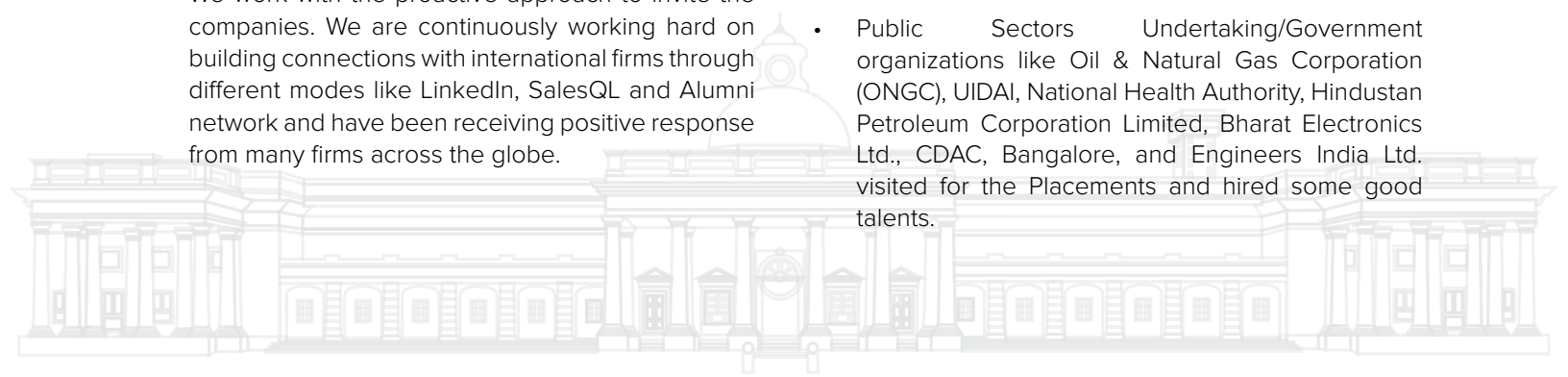
- Friendship peak expedition in September 2022: One of the notable achievements of the club was the successful Friendship Peak Expedition in September 2022. This expedition involved a group of students and faculty members who undertook a challenging trekking expedition to Friendship Peak (5289 m), a mountain peak located in the Himalayas. The expedition showcased the institution's commitment to promoting adventure activities and providing students with opportunities for personal growth and self-discovery.
- Organized 10 Treks and Trips with more than 1000 Participants: The club has organized a series of treks and trips, involving more than 1000 participants. These outdoor adventures not only provide students with recreational opportunities but also help them develop skills such as leadership, teamwork, resilience, and problem-solving.
- Annual Club Day Attended by Chief Guest Baljeet Kaur: Club's Annual Club Day served as a significant event, graced by the presence of Chief Guest Mountaineer Baljeet Kaur. This occasion celebrated the achievements of various clubs within the institution.

# Placement

IIT Roorkee has the privilege of embracing the finest students to its management, science, and engineering programmes. The Placement and Internship cell is the nodal point for recruitment of students from Institute. The placement season at IIT Roorkee was in hybrid mode throughout the Year. The placement and Internship activities continue to grow in continuum. A core Placements and Internship team of student/staff along with the Placement Advisory Council work round the year to look after the smooth execution of the activities. The selected students have been successful in exceeding the demands of the international recruiters. IIT Roorkee students can excel and advance in the competitive job market thanks to the institution's top-notch research facilities, extensive institute-industry collaborations, good international exchange programmes, interdisciplinary scientific research collaborations, and excellent industrial training opportunities.

## Highlights:

- The necessity of diligent preparation has been consistently communicated to the aspirants. Placement & Internship Cell has successfully partnered with over 1000 esteemed companies that registered for placements and internships. As a result of these collaborations, our students have secured more than 1984 combined offers, providing them with exceptional opportunities to explore.
- Multiple sessions of campus recruitment on each day were conducted. We managed to conduct the processes of over 50 top notch companies in hybrid mode across the globe on the first day of Placements (December 1, 2022).
- More than 4500 companies were contacted for the campus placements.
- We work with the proactive approach to invite the companies. We are continuously working hard on building connections with international firms through different modes like LinkedIn, SalesQL and Alumni network and have been receiving positive response from many firms across the globe.
- 1233 job offers till now have been materialized. As the recruitment process for the session 2022-23 is still on, many organizations are expected to come.
- 751 internship offers (for all the registered students) could be gained this year.
- 279 Pre-Placement Offers including 2 international offers were received.
- 133 companies for summer Internship recruitments and 279 companies for Placements participated in campus (as the recruitment process for the session 2022-23 is still on, many organizations are still expected to come).
- Out of 279 companies 63 companies were the first time visitors.
- More than 1126 'A' Category job offers (for the first time) were received. 'A' category jobs offer CTC > Rs. 8.0 lacs.
- Placement and Internship Cell has been conducting many negotiations with company officials to extend Branch Eligibility, lowering the CGPA cut offs, for extending waitlist and have been organizing walk-in interviews at the last moment (through hybrid mode) post results of online tests to allow greater pool of students to appear for interviews, which enabled a positive situation for students as well visiting companies.
- Complete computerization of the placement processes along with Placement and Internship Cell app to ensure efficient utilization of our resources has been done.
- In collaboration with IMG Team, a complete optimization of placement portal (Channeli) is being done to make it more user friendly for virtual mode, to provide more facilitation for sharing information and to reduce paperwork and for increasing the overall performance.
- Public Sectors Undertaking/Government organizations like Oil & Natural Gas Corporation (ONGC), UIDAI, National Health Authority, Hindustan Petroleum Corporation Limited, Bharat Electronics Ltd., CDAC, Bangalore, and Engineers India Ltd. visited for the Placements and hired some good talents.



- Some of the companies which hired interns from the campus for the first time include – Blume Global India Pvt. Ltd., DevRev Cloud India Pvt. Ltd., FactWise, JM Fiancial Services Ltd., Lime.ai, Nimbleedge Pvt. Ltd., NK Securities Research, Plaid, Qube Research & Technology, Zepto, etc.
- Major MNC's which participated in the Campus Placement for the first time for Placements are 91Squarefeet, Barclays, Bert Labs Pvt. Ltd., Bhanzu, Blume Global India Pvt. Ltd., Boston Consulting Group (India) Pvt. Ltd., Candor Health, ClimaJo Pvt. Ltd., CNH Industrial, DeNA, Digit Insurance, Ginco, Godrej Properties, GoKwik, Haber, Intellect Design Arena, JM Financial, Jungleegames, Luminous, Power Technologies Pvt. Ltd., Max Life Insurance, Prototyze, Quintics Management Consultancies Pvt. Ltd., Reliance Industries - New Energy, Rystad Energy India Pvt. Ltd., SEDEMAC Mechatronics Pvt. Ltd., Sun Petrochemicals Pvt. Ltd. (SunPetro), Tata Projects Limited, Vedanta Limited, Zee Entertainment Enterprises Ltd. etc.
- Virtual/Physical Meetings of Professor-in-Charge, Placement and Internship Cell with companies for establishing relationships and contacts at the highest level are being organized regularly.
- The Placement and Internship Cell, with the help of DORA, signed an MoU with companies like Alphgreps and Blume Global to start their Scholarship of (Rs. 25 lacs) for the final and pre-final year students.
- The Placement and Internship Cell collaborated with several companies like Google organized a STEP internship for software developers, particularly those historically underrepresented in the field. This program aims to bridge the gap between academic study and professional internships. JP Morgan Chase hosted a workshop in the field of Quantitative Research, while Flipkart facilitated a Buddy Program to prepare students for case challenges. Publicis Sapient organized a workshop intended to improve our students' competitive programming and analytical skills. Goldman Sachs held a Women Emerging in Finance (WEiF) workshop to assist our female students in establishing their careers in the finance sector. ENGAGE, a program by Microsoft, provides multiple engagement and evaluation

touchpoints where participants can interact with Microsoft mentors, leaders, and interns throughout the program. Uber's She++ is an outreach program designed to create a platform for young women in technology, enabling them to connect with technology leaders at Uber and participate in inspiring conversations about exploring careers in technology and many more.

- Even though some regular recruiters didn't visit this year due to low current market scenario, the Placement & Internship team was able to compensate for their absence by partnering with new top notch companies with equal or greater stature. It is requested to note that the team could retain about 100% of Placement and Internship offers.

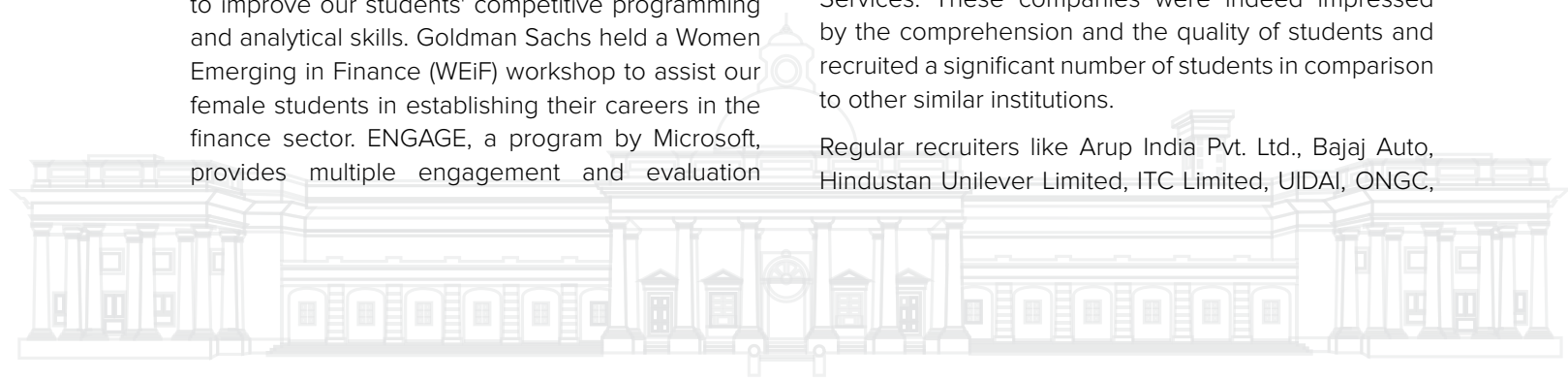
### Important Features:

Since the start of 'on-campus recruitment' (Hybrid Mode) for the session 2022-23, from 1st December 2022, 279 companies participated in the campus placement and 2nd Phase of campus recruitment is still on.

Some other key companies that participated in the campus recruitment programme were

Tata Projects Limited, Microsoft, American Express, EXL Service, Standard Chartered, Oracle, Axis Bank Ltd., Blume Global India Pvt Ltd., Larsen and Toubro Limited, BNY Mellon Technology, Jio Platforms Limited, AECOM, Enphase Energy, Wells Fargo International Solutions Private Limited, Amazon Development Center, Intel Technologies, Samsung R&D Delhi, Jio Platforms Limited, Bajaj Auto Limited & Chetak Technology Limited, Qualcomm, Navi, SAP Labs India Pvt. Ltd., JP Morgan Chase & Co, Google India, ICICI Lombard General Insurance Co. Ltd., Bank of America, Vyas Edification, Sprinklr, Axxela, Goldman Sachs, Schlumberger Asia Services Limited, Reliance Industries, Reliance Industries Limited, Deloitte, Société Générale, Jaguar Land Rover, Edgeverve Systems, Mastercard India Services Pvt. Limited, CNH Industrial, Ramboll India, Tata Consultancy Services. These companies were indeed impressed by the comprehension and the quality of students and recruited a significant number of students in comparison to other similar institutions.

Regular recruiters like Arup India Pvt. Ltd., Bajaj Auto, Hindustan Unilever Limited, ITC Limited, UIDAI, ONGC,



JSW Group, Tata Steel Ltd., Cairn Oil & Gas, Enphase Energy, Midas Research and Development Center India Private Limited, Trident Limited, Texas Instruments, Maruti Suzuki India Limited, Mahindra & Mahindra Ltd., Jaguar Land Rover India, Tata Motors, Ramboll India, Applied Materials, nVidia, Intel Technologies, SRF Ltd., Larsen & Toubro Ltd., Tata Advanced Systems Limited, John Deere India Pvt. Ltd., etc. followed the same trends as the past few years and hired students for their operations pertaining to core engineering.

## Programme wise Statistics

A glance at overall placement statistics in the following table and the figure clearly reflects that the campus placement for the year 2022-23 has been quite satisfying despite the low market scenario across the globe.

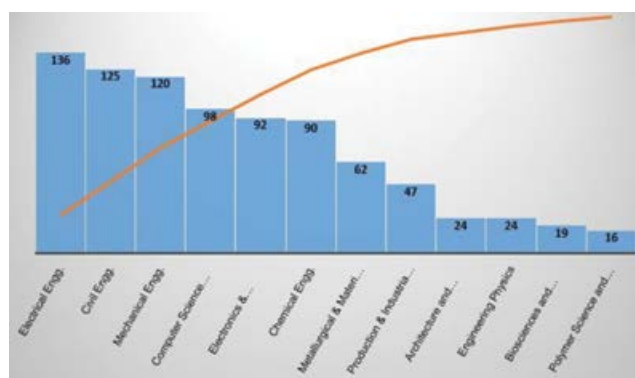
Academic Programme	Number of students registered for Placement	Number of offers made
B.Tech./B.Arch.	853	828
IDD	3	2
IMT	47	45
IMSc	55	45
M.Tech./MBA/ MURP/M.Arch.	324	238
M.Des./MIM	18	8
M.Sc.	110	61
Ph.D.	-	6
Total	1410*	1233*

Programme wise registered students & Offers 2022-23



## Department wise Statistics

S. N.	Degree	Registered	Effective Placement (A)	Total Offers (B)
1	Architecture and Planning	24	10	10
2	Biosciences and Bioengineering	19	14	14
3	Chemical Engg.	90	85	92
4	Civil Engg.	125	105	111
5	Computer Science Engg.	98	96	111
6	Electrical Engg.	136	123	140
7	Electronics & Communication Engg.	92	86	101
8	Engineering Physics	24	19	24
9	Production & Industrial Engg.	47	41	48
10	Mechanical Engg.	120	105	115
11	Metallurgical & Materials Engg.	62	47	50
12	Polymer Science and Engineering	16	11	12
<b>Total B.Arch/B. Tech</b>		<b>853</b>	<b>742</b>	<b>828</b>

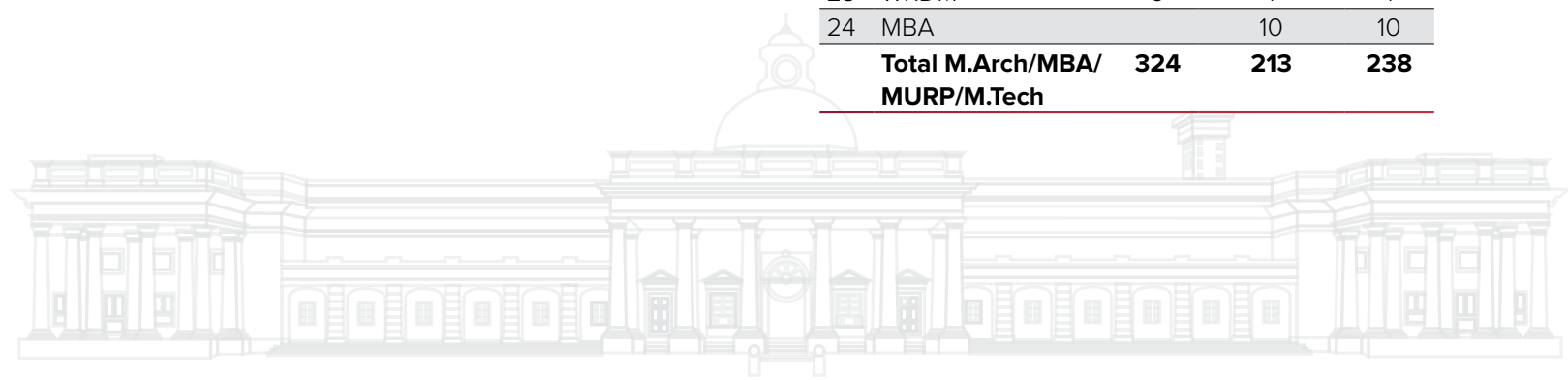


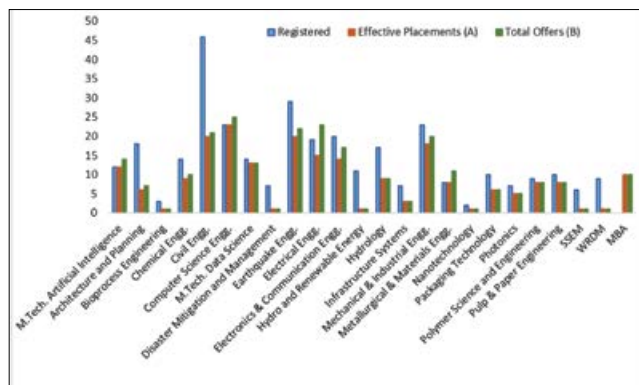


## Sector Wise Statistics

Degree	Regis-tered	Effective Placement (A)	Total Offers (B)
IDD – B.Tech (Civil Engineering) & M.Tech. (Data Science)	1	1	1
IDD – B.Tech. (Computer Science and Engineering) and M.Tech. (Computer Science and Engg.)	1	1	1
IDD B.Tech. Engineering Physics & M.Tech. Photonics	1	0	0
<b>Total IDD</b>	<b>3</b>	<b>2</b>	<b>2</b>
Int. M.Tech Geological Technology	18	16	17
Int. M.Tech Geophysical Technology	29	26	28
<b>Total IMT</b>	<b>47</b>	<b>42</b>	<b>45</b>
Int. M.Sc. (Applied Mathematics)	33	25	27
Int. M.Sc. (Chemistry)	8	6	6
Int. M.Sc. (Physics)	14	11	12
<b>Total IMSc</b>	<b>55</b>	<b>42</b>	<b>45</b>
M.Des. in Industrial Design	16	8	8
Master in Innovation Management	2	0	0
<b>Total M.Des./MIM</b>	<b>18</b>	<b>8</b>	<b>8</b>
M.Sc. Appl. Geology	17	11	11
M.Sc. Biosciences and Bioengineering	17	6	6
M.Sc. Chemistry	24	19	20
M.Sc. Economics	11	4	4
M.Sc. Mathematics	23	12	13
M.Sc. Physics	18	7	7
Total M.Sc.	110	59	61
Ph.D.		6	6

	Degree	Reg-is-tered	Effective Placement (A)	Total Offers (B)
1	M.Tech. Artificial Intelligence	12	12	14
2	Architecture and Planning	18	6	7
3	Bioprocess Engineering	3	1	1
4	Chemical Engg.	14	9	10
5	Civil Engg.	46	20	21
6	Computer Science Engg.	23	23	25
7	M.Tech. Data Science	14	13	13
8	Disaster Mitigation and Management	7	1	1
9	Earthquake Engg.	29	20	22
10	Electrical Engg.	19	15	23
11	Electronics & Communication Engg.	20	14	17
12	Hydro and Renewable Energy	11	1	1
13	Hydrology	17	9	9
14	Infrastructure Systems	7	3	3
15	Mechanical & Industrial Engg.	23	18	20
16	Metallurgical & Materials Engg.	8	8	11
17	Nanotechnology	2	1	1
18	Packaging Technology	10	6	6
19	Photonics	7	5	5
20	Polymer Science and Engineering	9	8	8
21	Pulp & Paper Engineering	10	8	8
22	SSEM	6	1	1
23	WRDM	9	1	1
24	MBA		10	10
<b>Total M.Arch/MBA/MURP/M.Tech</b>		<b>324</b>	<b>213</b>	<b>238</b>

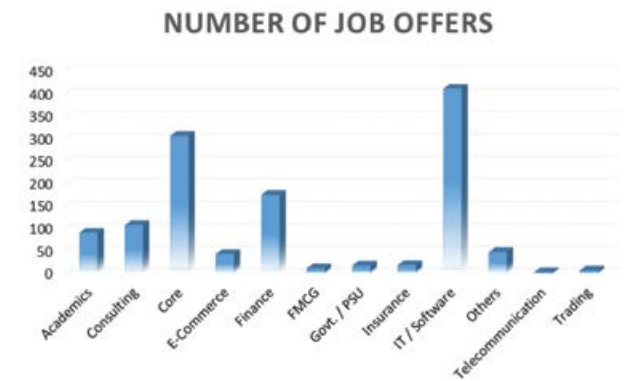




S. No.	Sector	Job offers (Nos.)
8.	Insurance	19
9.	IT / Software	411
10.	Others	48
11.	Telecommunication	3
12.	Trading	7

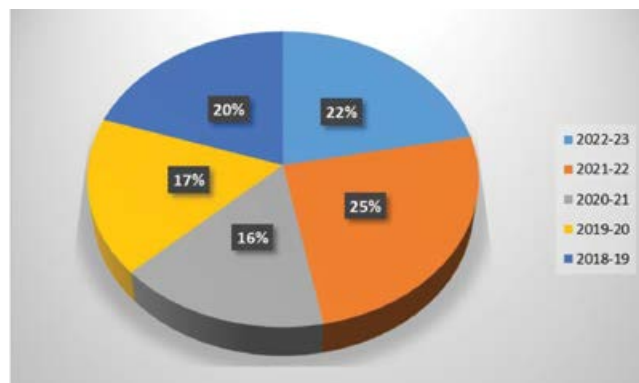
**Summary**

A = Effective Placements      Grand Total of A = 1114  
 B = Jobs Offered              Grand Total of B = 1233



**Year wise Placement**

Year	2022-23	2021-22	2020-21	2019-20	2018-19
Job offers (Nos.)	1242	1426	910	975	1127



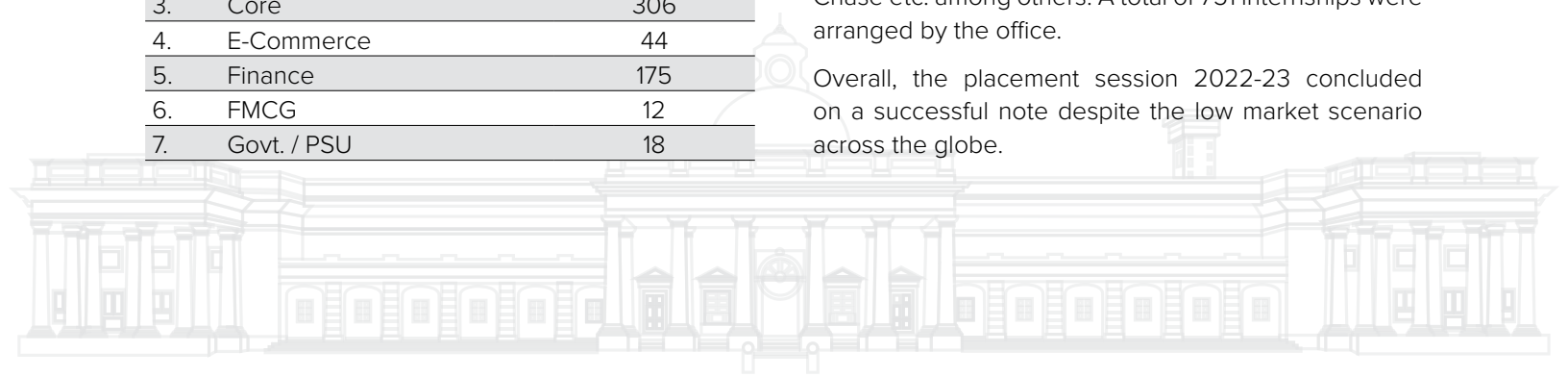
**Sector wise Placement**

S. No.	Sector	Job offers (Nos.)
1.	Academics	91
2.	Consulting	108
3.	Core	306
4.	E-Commerce	44
5.	Finance	175
6.	FMCG	12
7.	Govt. / PSU	18

**Internships:**

The Placement & Internship Cell was also able to secure significant number of offers for the mandatory summer internships of the pre-final year students from companies such as Microsoft, Futures First, PricewaterhouseCoopers Private Limited, Amazon, Sprinklr, Jio Platforms Limited, Texas Instruments, Samsung R&D Institute, Bangalore, Goldman Sachs Services Private Ltd., American Express, Samsung R&D Delhi, Oracle India Pvt. Ltd., Qualcomm, Tata Steel, Zomato Ltd., JP Morgan & Chase, Google, Cisco, Enphase Solar Energy Pvt. Ltd., Axtria Inda Pvt. Ltd., Vedanta Limited, Cairn Oil & Gas, Kotak Mahindra Bank Ltd., Quadeye Securities, ITC Limited, Wells Fargo, Bajaj Auto Ltd., Zepto, Adobe, Nimbleedge Pvt. Ltd., Chetak Technology Ltd., Citibank, Blume Global India Pvt. Ltd., D.E Shaw, Jaguar Land Rover India Ltd., BNY Mellon, Standard Chartered GBS India Pvt. Ltd., Axxela, Rodic Consultants Pvt. Ltd., Reliance Industries Limited, Avua International Pvt. Ltd., Salesforce, JP Morgan & Chase etc. among others. A total of 751 internships were arranged by the office.

Overall, the placement session 2022-23 concluded on a successful note despite the low market scenario across the globe.



# International Relations

The Institute is committed to international cooperation and has been actively involved in partnering with countries to develop initiatives in the fields of engineering, applied sciences, social science, and management education. The International Relations Office coordinates all international activities of IIT Roorkee. There have been 86 International students who were enrolled at the Institute in the academic year 2022-23. There are 14 distinct nationalities that are represented by these students. Overall the on-campus strength of International students is 210, which represents 28 different nationalities.

## International MoUs signed

S. No.	Organization	Country	IIT Roorkee Champion	Date of execution
1	Faculty of Engineering of University of Porto (FEUP)	Portugal	IR Office	05-04-2022
2	UK Centre For Ecology & Hydrology (UKCEH)	United Kingdom	IR Office	12-05-2022
3	The University of the Philippines Los Banos	Philippines	IR Office	30-05-2022
4	The Ecole speciale des Travaux Publics, du Batiment et de l'Industrie (ESTP Paris)	France	IR Office	01-06-2022
5	National Taiwan University	Taiwan	IR Office	24-08-2022
6	Wollega University	Ethiopia	IR Office	08-09-2022
7	Ambo University	Ethiopia	Prof. Sandeep Singh	08-09-2022
8	Haramaya University	Ethiopia	Prof. Himanshu Joshi	08-09-2022
9	University of Gondar	Ethiopia	IR Office	08-09-2022
10	Addis Ababa Science and Technology University	Ethiopia	IR Office	08-09-2022
11	University of Lausanne (UNIL)	Switzerland	IR Office	11-09-2022
12	Queensland University of Technology	Australia	IR Office	01-10-2022
13	The Royal University of Bhutan	Bhutan	Prof. Kamal Jain	06-10-2022
14	Osaka Metropolitan University	Japan	Prof. V. C. Srivastava	24-10-2022
15	Addis Ababa University	Ethiopia	IR Office	15-11-2022
16	Hanyang University, Seoul	South Korea	Prof. Bhaskar Jyoti Deka	23-11-2022
17	Queen's University at Kingston (Canada)	Canada	Prof. Ashish Pandey	30-11-2022
18	K.N. Toosi University of Technology	Iran	Prof. Sandeep Singh	28-12-2022
19	Astana IT University (AITU)	Kazakhstan	Prof. V. C. Srivastava	02-02-2023
20	University of Saskatchewan	Canada	IR Office	03-02-2023
21	Niigata University	Japan	Prof. Bal Krishna Maheshwari	21-02-2023
22	Indian Council for Cultural Relations (ICCR)	India	Prof. Rajdeep Chatterjee	24-02-2023
23	MDS IndoCan Inc.	Canada	IR Office	29-03-2023

## Joint Degree Programmes/Joint/Dual Master's Degree Programmes

Joint Doctoral Degree Programmes at present, IIT Roorkee has Joint Doctoral Degree Programme (JDDP) Agreements with the following universities:

1. University of Alberta, Canada
2. University of Strasbourg, France
3. Asian Institute of Technology, Thailand
4. National Tsing Hua University, Taiwan
5. IIT Roorkee has signed Joint/Dual Master's Degree Program with Taiwanese universities.

S. No.	Name of the Student	Department	Host Institute
1.	Mr Rishi Jain	Department of applied mathematics & scientific computing.	AIT, Thailand
2.	Mr. Vijay Saini	Mechanical & Industrial Engineering	University of Alberta, Canada
3.	Mr. Praveen K. Vidyarthi	Department of Hydro & Renewable Energy	University of Strasbourg, France
4.	Mr. Soumya R. Nath	Electrical Engineering	University of Ontario Institute of Technology, Canada

Students selected for Commonwealth Split-site Scholarships for January 2022 session (12 months), United Kingdom

S. No.	Name	Year of PhD	Study Program/ Department/Year	PhD Supervisor at IITR	Host Institute
1	Ranjana Rathaur	4	Chemical Engineering/4th yr	Prof Sumana Ghosh	Cranfield University
2	Simran Kaur Dhillon	3	Chemical Engineering/3rd yr	Prof Patit Paban Kundu	University of Bath
3	Rahul Gautam	3	Polymer and Process Engineering/3rd yr	Prof U K Ghosh	University of Birmingham
4	Aakriti Gupta	2	WRDM/2nd yr	Prof Thanga Chelliah	Loughborough University
5	Chetna	2	Architecture and Planning/2nd yr	Prof Shubhajit Sadhukhan	Loughborough University
6	Ravi Verma	3	Civil Engineering/3rd yr	Prof P K Garg	Cranfield University
7	Sumit Parvate	3	Polymer and Process Engineering/3rd yr	Prof Sujay Chaatopadhyay	Loughborough University
8	Ramesh Kumar	5	Physics/ 5th yr	Prof Monojit Bag	Cranfield University
9	Isha Rathore	3	Architecture and Planning/3rd yr	Prof E Rajasekar	University of Bath
10	Abinesh G.	2	Hydrology/2nd yr	Prof. Ankit Agrawal	University of Birmingham
11	Priyanka Singh	3	Hydrology/3rd yr	Prof. Himanshu Joshi	University of Birmingham



S. No.	Name	Year of PhD	Study Program/ Department/Year	PhD Supervisor at IITR	Host Institute
12	Anshul Yadav	3	Hydrology/3rd yr	Prof. Sumit Sen	University of Birmingham

Nominations for DAAD Scholarships under the “Combined Study and Practice Stays for Engineers from Developing Countries (KOSPIC) with Indian IITs 2022/23” (December 2022 to July 2023 max. 6 months), Germany

S. No	Students Name	Departments	Host Institutes
1.	Rushikesh Mundane	Paper Technology	Technische Universität Dresden
2.	Manish Kumar Yadav	Civil Engineering	Technische Universität München
3.	Mayank Gautam	Polymer and Process Engineering	Technische Universität Dresden
4.	Rangoli Goel	Civil Engineering	Leibniz Universität Hannover
5.	Aadil Hamid Bhat	Paper Technology	Technische Universität Dresden

## International Relations Office Recent Launches

The International Relations Office has introduced a range of online applications to facilitate a streamlined and paperless application process. Presented below are the tables showcasing the latest online application releases

S. No.	Application	To Whom	Launch Date
1	Web Calling (Click to Call) through IR Portal (Intl. Students Admission Applications and IRO Staff)	International Relations Office & IITR Departments	June 2022
2	Online Screening Process for Exchange/Internship programs	International Relations Office	October 2022
3	MoU Template	International Relations Website	August 2022

## IR Office Participation in Various Events

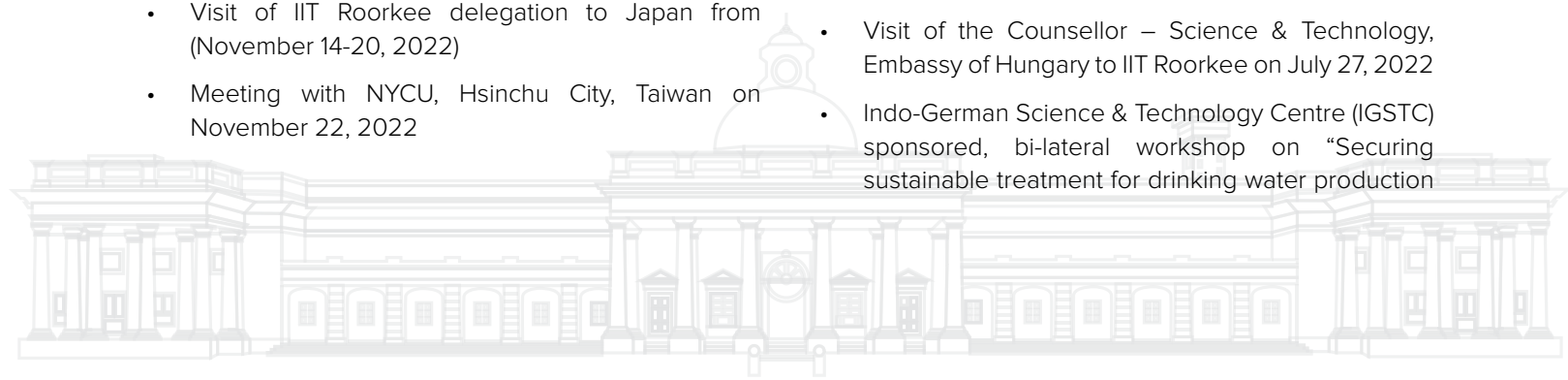
- Online meeting with Diponegoro University, Indonesia on March 28, 2023
- IIT Roorkee Participated in iHED Conference 2023 Related to Internationalization on March 3, 2023
- A meeting between IIT Roorkee and the University of Alberta on February 14, 2023
- Meeting between Dept of Physics, NTNU (Taiwan) and IIT Roorkee on January 19, 2023
- Meeting to Discuss Collaborations between IIT Roorkee and NYCU on January 18, 2023
- IR Office participated in the QS Higher Ed Summit: Asia Pacific 2022, Indonesia held on November 9-10, 2022
- IIT Roorkee Actively Participated in the UNESCO-India-Africa (UIA) Hackathon- Study in India Education Fair (22-25th November 2022)
- IR Office Participated in the French Day Celebrations at French Embassy, New Delhi on July 14, 2022
- HIMGIRI APARTMENT FOUNDATION DAY CELEBRATION ON 25th SEPTEMBER, 2022
- The Indo-German Publication – CANDIDE – 13 on September 8, 2022
- Independence Day Celebration at Himgiri Apartments on August 16, 2022
- International Football Tournament-2022 on July 23, 2022



- Farewell of International Students, 15th June 2022
- IIT Roorkee celebrates the 175th Year of Foundation in Kathmandu, Nepal on June 9, 2022

#### **Visits (IITR Delegations, International Delegations)**

- The delegation from the University of Adelaide, Australia visited IIT Roorkee on March 31, 2023
- Visit of Prof. Kevin Deluzio from Queen's University, Canada to IIT Roorkee on March 30, 2023
- Meeting between IIT Roorkee Delegation and H.E. Mr P Harish, Ambassador of the Indian Embassy in Berlin, Germany on March 25, 2023
- IIT Roorkee delegation visited the Freie Universitat Berlin(FU Berlin), Germany on March 24, 2023
- Delegates from IR Office Visited to IR Office, University of Potsdam, Germany on March 21, 2023
- Signing of Student Exchange Agreement between IIT Roorkee and Niigata University, Japan on February 21, 2023
- Mobility & Dialogue Mr. Ibai Rigby's from the RWTH Aachen University, Germany, Visit to IIT Roorkee on January 27, 2023
- Visit of Prof. K.D.P. Nigam from IIT Delhi (University of Adelaide) to IIT Roorkee on January 24, 2023
- The Delegation from the University of Montpellier and IRD France visited IIT Roorkee on January 9, 2023
- Visit of the Delegate from the University of Surrey, UK to IIT Roorkee on December 26, 2022
- MoU Signing Ceremony between IIT Roorkee and UK Centre for Ecology and Hydrology (CEH) on December 05, 2022
- Meeting with NTNU, Taiwan: IIT Roorkee Outreach Visit on November 23, 2022
- The Delegation from IIT Roorkee Visited NTHU, Hsinchu City, Taiwan on November 23, 2022
- Visit of IIT Roorkee delegation to Japan from (November 14-20, 2022)
- Meeting with NYCU, Hsinchu City, Taiwan on November 22, 2022
- Visit of the delegates from IAHS to IIT Roorkee on November 22, 2022
- The University of Peradeniya, Sri Lanka Signs MoU with IIT Roorkee on November 15, 2022
- Visit of Prof. Umesh Garg from the University of Notre Dame, USA to the International Relations Office on 28 Oct 2022
- MoU signing Ceremony between the National University of Uzbekistan and IIT Roorkee
- Visit of the delegation from France to IIT Roorkee on October 7th, 20
- Collaboration Meeting between IKCRI and IIT Roorkee on September 22, 2023
- IIT Roorkee Delegates Visited the University of Surrey, UK to Strengthen Collaborations on September 22, 2022
- Meeting between Imperial College London, UK and IIT Roorkee on September 22, 2022
- IIT Roorkee Commorated 175th Year Anniversary in London, UK with Alumni Meet on September 20, 2022
- Visit of Delegates from the Institute of Engineering (IOE), Tribhuvan University, Nepal to IIT Roorkee on September 18, 2022.
- MoU Signing Ceremony between IIT Roorkee and Arizona State University on September 15, 2022
- Visit of Prof Praveen Linga, National University of Singapore to IR office on September 9, 2022
- Visit of the Delegation of University of Alberta to IIT Roorkee on August 17, 2022
- A meeting was organized between the delegation of UoA and Director, Dy. Director, Dean, Faculty members of IITR.
- Visit of Prof Catherine Button, from the Newcastle University, United Kingdom to IIT Roorkee on July 29, 2022
- Visit of the Counsellor – Science & Technology, Embassy of Hungary to IIT Roorkee on July 27, 2022
- Indo-German Science & Technology Centre (IGSTC) sponsored, bi-lateral workshop on “Securing sustainable treatment for drinking water production



and water recycling with focus on anionic contaminants: SuWaRec” on July 22, 2022

- Meeting between IR Office Delegates & Taipei Economic and Cultural Center on July 14, 2022
- Visit of Prof. Fadhel Ghannouch from the University of Calgary, Canada, to IIT Roorkee on July 6, 2022
- The delegation from Tribhuvan University Visited IR Office on June 22, 2022
- IIT Roorkee at NAFSA 2022 in Denver, Colorado, USA on June 3, 2022
- Visit of Dr Fabien Chareix, the Attaché for Academic and Scientific Cooperation, Embassy of France in

India / French Institute in India to IIT Roorkee on May 26, 2022

- Visit by Prof Tetsuo Kidokoro, University of Tokya, Japan to IR Office on May 22, 2022
- Visit of Prof. Praveen Linga, Professor in the Department of Chemical and Biomolecular Engineering at the National University of Singapore (NUS), to IIT Roorkee on April 21, 2022
- Visit of Dr Sanjeev K Varshney, DST to IIT Roorkee on April 11, 2022
- Visit by Prof. Jhuma Sadhukhan from the University of Surrey (UK) on April 9, 2022

## Exchange Programmes

### Nominations for HSLU Spring 2022 semester (February to July), Switzerland AY 2022-23

S. No.	Name	Email	Study program/ Department/year	Country
1	Karnik Advaiya Ashok	karnik_a@pp.iitr.ac.in	BTech/Chem Engr/3rd yr	Switzerland

### Nominations for Student Exchange Program at HSLU, Fall 2022/23 Semester (September 2022 to February 2023), Switzerland

S. No.	Name	Email	Study program/ Department/year	Country
1	Avantika Verma	avantika_v@ar.iitr.ac.in	BArch/Architecture/3rdyr	Switzerland
2	Janani R. G.	janani_r@ar.iitr.ac.in	BArch/Architecture/3rdyr	Switzerland
3	Shreyes Gupta	shreyes_g@ar.iitr.ac.in	BArch/Architecture/3rdyr	Switzerland

### Students selected for Mitacs Scholarship for May to October 2023 session (12 weeks), Canada (22-23) May 23 Oct 23

S. No.	Name	Department	Year	Host University	Email (IITR)	Course (BTech, MTech etc.)
1	Vaibhav Sharma	ME	3rd	University of Alberta	vaibhav_s@me.iitr.ac.in	BTech
2	Riya	Earth Sciences	3rd	University of Lethbridge, Lethbridge, Alberta	riya@es.iitr.ac.in	Int. MTech
3	Apoorva Verma	Electronics and Communications Engineering	3rd	Universite Laval	apoorva_v@ece.iitr.ac.in	BTech

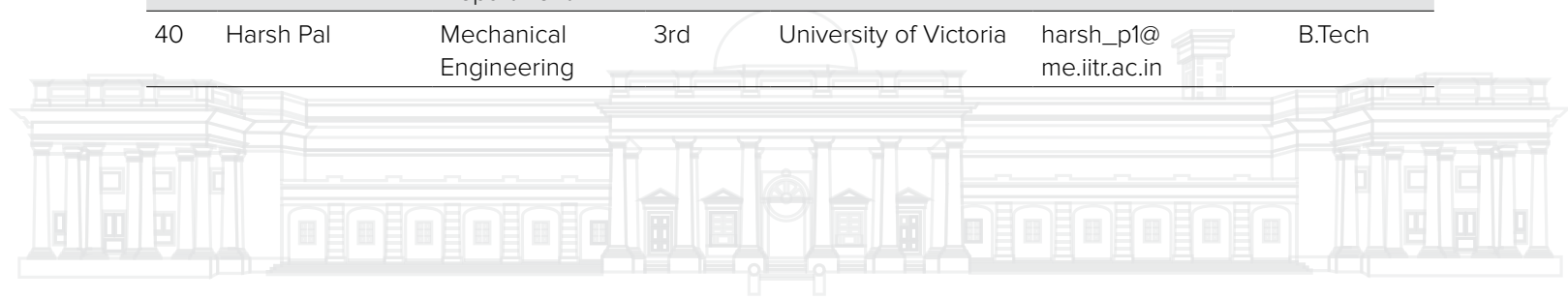


S. No.	Name	Department	Year	Host University	Email (IITR)	Course (BTech, MTech etc.)
4	Masoob Alam	Metallurgical and Materials Engineering	3rd	University of Windsor	masoob_a@mt.iitr.ac.in	BTech
5	Sourabh Motiani	Earth Sciences	3rd	Western University	sourabh_m@es.iitr.ac.in	Integrated MTech
6	Saana Tandon	Chemical Engineering	3rd	University of Calgary	saana_t@ch.iitr.ac.in	BTech
7	Amisha Kumari	Earth Sciences	3rd	Athabasca University	ms.amisha_k@es.iitr.ac.in	Integrated M.Tech
8	Nitin Sengar	Mechanical	3rd	Athabasca University	nitin_s@me.iitr.ac.in	Btech
9	Priyansh Rathi	Electronics and Communication	3rd	University of British Columbia - Vancouver	priyansh_r@ece.iitr.ac.in	BTech
10	Vishal Trivedi	Mechanical Engineering	3rd	Simon Fraser University	vishal_t@me.iitr.ac.in	B.Tech
11	Ritvik Mahajan	EE	3rd	Queen's University	ritvik_m@ee.iitr.ac.in	BTech
12	Sameer Talwar	Electrical Engineering	3rd	York University	sameer_t@ee.iitr.ac.in	BTech
13	ABHAYANK BANSAL	Civil	3rd	Laval University	abhayank_b@ce.iitr.ac.in	BTech
14	Manik Goyal	Civil Engineering	3rd	York University	manik_g@ce.iitr.ac.in	B.Tech
15	Manuvansh Rai	CIVIL ENGINEERING	3rd	UNIVERSITY OF WINDSOR	manuvansh_r@ce.iitr.ac.in	B.TECH
16	Akhil Agrawal	Civil Engineering	3rd	University Laval	akhil_a@ce.iitr.ac.in	BTech
17	Urvi Gupta	Civil Engineering	3rd	UBC, Okanagan	urvi_g@ce.iitr.ac.in	Btech
18	Rylan Fernandes	Metallurgy	3rd	Toronto Metropolitan University	rylan_cf@mt.iitr.ac.in	Btech
19	Ayushi Raj	Chemical	3rd	University of Windsor, Ontario	ayushi_r@ch.iitr.ac.in	BTech
20	Khushi Jain	Chemical	3rd	UBC	khushi_j@ch.iitr.ac.in	Btech
21	Eeshan Punde	Chemical Engineering	3rd	Simon Fraser University	eeshan_gp@ch.iitr.ac.in	BTech
22	Anet Maria P	Earth Science	3rd	McMaster University, Hamilton	anet_mp@es.iitr.ac.in	Int Mtech





S. No.	Name	Department	Year	Host University	Email (IITR)	Course (BTech, MTech etc.)
23	Anand Jee Choubey	Earth Science	4th	Athabasca University	anand_j@es.iitr.ac.in	Integrated M.Tech
24	Harsh Kumar	Mathematics	3rd	Toronto Metropolitan University	harsh_k@ma.iitr.ac.in	Int Msc
25	Kamal Utlal	Physics	3rd	McMaster University	kamal_u@ph.iitr.ac.in	Btech
26	Harshita Verma	Biosciences and Bioengineering	3rd	Dalhousie University	harshita_v@bt.iitr.ac.in	B.Tech
27	Pratyush Jha	Engineering Physics	3rd	McGill University	pratyush_j@ph.iitr.ac.in	BTech
28	Abhishek Sharma	Civil engineering	3rd	Toronto Metropolitan University (Formerly Ryerson University)	abhishek_s1@ce.iitr.ac.in	B Tech
29	Achhar Sharma	Civil	3rd	Queens University	achhar_s@ce.iitr.ac.in	BTech
30	Harshini	Civil engineering	3rd	University of Calgary	harshini_s@ce.iitr.ac.in	Btech
31	Harshini Paranjape	Physics	4th	University of British Columbia	harshini_p@ph.iitr.ac.in	Integrated Msc
32	Abhishek Kumar	Mechanical and Industrial Engineering	3rd	UQAM Montreal	abhishek_k@me.iitr.ac.in	BTech
33	Antara Das	Chemical Engineering	3rd	Queen's university, Kingston	antara_d@ch.iitr.ac.in	B.tech
34	Sambit Prabhu	Electrical	3rd	Lakehead University, Thunder Bay	sambit_p@ee.iitr.ac.in	BTech
35	Shreshth Mehrotra	EE	3rd	York University	shreshth_m@ee.iitr.ac.in	BTech
36	Ekansh Nayak	Chemical	3rd	University of Waterloo	ekansh_n@ch.iitr.ac.in	Btech
37	Shubham Chittora	Mechanical Engineering	3rd	McMaster University	shubham_c@me.iitr.ac.in	BTech
38	Aadarsh Raj	Civil Engineering	3rd	University of Saskatchewan	aadarsh_r@ce.iitr.ac.in	BTech
39	Parth Sharma	Mechanical and Industrial Engineering Department	3rd	University of Regina	parth_s@me.iitr.ac.in	BTech
40	Harsh Pal	Mechanical Engineering	3rd	University of Victoria	harsh_p1@me.iitr.ac.in	B.Tech



S. No.	Name	Department	Year	Host University	Email (IITR)	Course (BTech, MTech etc.)
41	Vanshita jaikrishna rawat	Chemical Engineering	3rd	University of regina, regina, Saskatchewan	vanshita_jr@ch.iitr.ac.in	Btech
42	Arnav Arora	Physics	3rd	Waterloo	arnav_a@ph.iitr.ac.in	Btech
43	Apurba Prasad Padhy	ECE	3rd	University of Waterloo	apurba_pp@ece.iitr.ac.in	BTech
44	Chaitany Raghav	Electrical Engineering	3rd	Carleton university	chaitany_r@ee.iitr.ac.in	BTech
45	Siddhant Malik	Earth Sciences	4th	UQAM	siddhant_m@es.iitr.ac.in	Int. MTech
46	Aashi Jain	Mechanical	3rd	University of Windsor	aashi_j@me.iitr.ac.in	Btech

#### Selected students for DAAD WISE Scholarship, Germany AY 2022-23

S. No.	Student Name	Class/Year/Department	Duration	Country
1	Atal Agrawal	IMSc./ 3rd/Physics	May 15, 2023 - July 20, 2023	Germany
2	Ms Medha Maudgil	IMSc./3rd /Mathematics	May 10, 2023 - July 14, 2023	Germany

#### Nominations for ANU - FRT 2022 Program (Remotely supervised between May - August 2022 for 10-12 weeks), Australia

S. No.	Name	Email	Studyprogram/ Dept./Year	Country
1	Vinit Singh Yadav	vyadav@ec.iitr.ac.in	PhD/ECE/4th yr	Australia
2	Priyanka Chaudhary	pchaudhary@ph.iitr.ac.in	PhD/Physics/3rd yr	Australia



# RESOURCE & ALUMNI AFFAIRS

## Description:

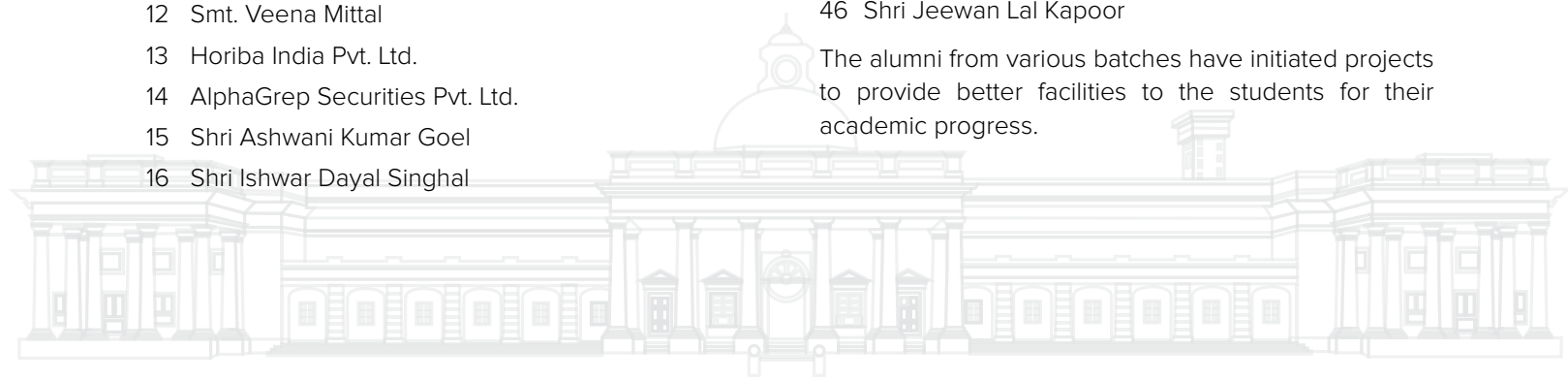
Dean of Resources and Alumni Affairs office is the nodal office for alumni connect in IIT Roorkee and is currently headed by Prof. R.D. Garg, the Dean, Resources and Alumni Affairs. The office also works extensively towards arranging financial resources in the form of donation to promote research and academic excellence at IIT Roorkee, honouring and awarding alumni with various awards, in-campus alumni meets etc. During 2022-23, the Institute received a total donation of Rs. 106,895,835.50/- through DORA office. The Institute expresses its deep gratitude and appreciation for the constant support shown by our alumni and other well-wishers of IIT Roorkee. The major donors for the last financial year were Shri Ashok Soota, Shri Om Prakash Kulshreshtha, Dr. Surendra Goel & Kusum Goel, Dr. Sushil Sharma & Shri Mohinder L. Nayar, Shri Pradeep Kumar Kapse to name a few. There were Batch Donations from 1996 and 1997 Batches, too.

## The Donations received are as under:

- 1 Shri Ashok Soota
- 2 Shri Mohinder I. Nayar & Dr. sushil Sharma
- 3 Dr. Surendra K Goel & Smt. Kusum L goel
- 4 Shri Om Prakash Kulshreshtha
- 5 Prof. Kewal K Saluja & Mrs. Neeta Saluja
- 6 Dr. Purnima Parida and Prof. Manoranjan Parida
- 7 Shri Virendra Gupta
- 8 Shri Pradeep Kumar Kapse
- 9 Shri Umesh Bajaj
- 10 Blume Global Pvt Ltd
- 11 Shri Niraj Kalsi
- 12 Smt. Veena Mittal
- 13 Horiba India Pvt. Ltd.
- 14 AlphaGrep Securities Pvt. Ltd.
- 15 Shri Ashwani Kumar Goel
- 16 Shri Ishwar Dayal Singhal

- 17 Shri Pradeep Kumar Kapse
- 18 Mrs. Krishna Kumari Kapoor w/o late shri Suresh Kapoor
- 19 Shraman Foundation
- 20 Prof. Manoranjan Parida & Dr. Purnima Parida
- 21 Shri A. K. Sabarwal
- 22 Ms. Giruba Beulah SE
- 23 Shri Narendra Swarup Agarwal
- 24 Shri. Atul Kumar Gupta
- 25 Shri Prabhat Kumar Sinha
- 26 Smt. Manju Gupta
- 27 Shri Anand Kumar Jain
- 28 Shri Manmohan Kumar Nagalia
- 29 Shri Manmohan Kumar Nagalia
- 30 Shri Vijay Kumar Dutt
- 31 Mr. Arvind Nayak & Mrs. Sangita Nayak
- 32 Shri Arvind Kumar Jain
- 33 Shri Anandroop Bhattacharya
- 34 Mrs. Margaret Cilamkoti & Mr. Chandra Mohan Cilamkoti
- 35 Smt. Manasi Patwardhan
- 36 Dr. Hira Prasad singh
- 37 Shri Adarsh Kumar Pradhan
- 38 Shri Pradeep Kumar Kapse
- 39 Shri Pradeep Kumar Kapse
- 40 Shri Swami Saran
- 41 Lt. Col. Kuldip Singh Dahia
- 42 Shri Trilochan Singh Kohli
- 43 NMDC Ltd
- 44 Shri Lakshmi Sampath & Smt. Shree Ayengar
- 45 Ms. Ambalika Sharma
- 46 Shri Jeewan Lal Kapoor

The alumni from various batches have initiated projects to provide better facilities to the students for their academic progress.



The contributions by a Class have always been critical in the growth and eminence of their Alma-mater. During the FY 2022-23, keeping up with their philanthropic gesture, the following batches left their legacy behind by making a unified donation towards the academic needs of the students:



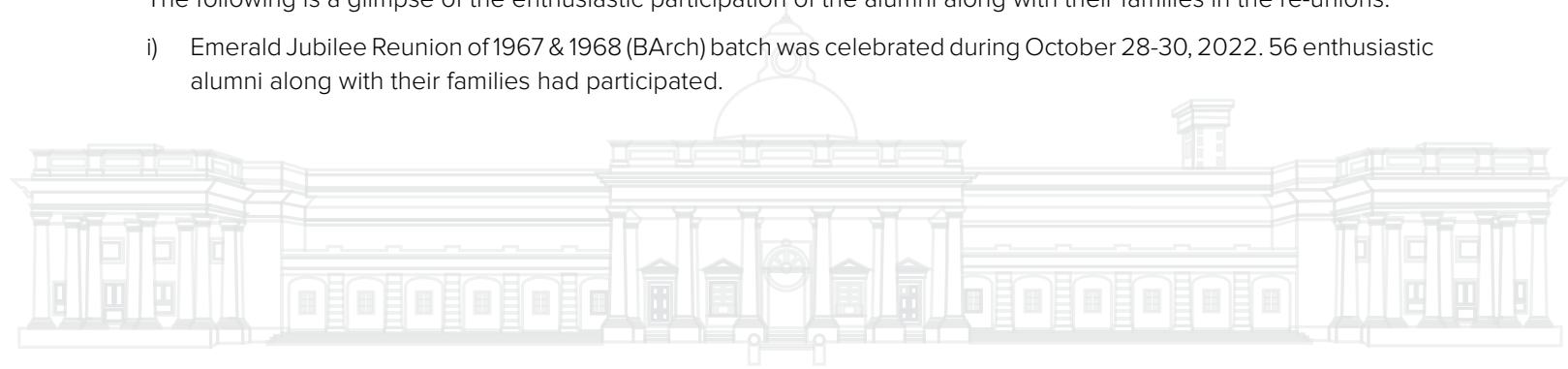
Emerald Jubilee Reunion of 1967 Batch (Including 1968 B.Arch.)

Sl. No.	Donor Name	Purpose of the Corpus Established for	Donation Amount
1	Class of 1996	1996 Batch Donation	5,192,201.00
2	Shri Gaurav Agrawal (Representative of 1997 Batch)	1997 Batch Donation	4,646,017.50
3	Shri Uddesh Kohli (Representative of 1962 Batch)	1962 Batch Financial Aid for Poor Students	1,500,000.00
4	Mr. Manoj Agarwal, Mrs. Manju Gupta & Mr. Prabhat Gupta (Batch Representatives)	1980 Batch EWS Girl Scholarship	1,286,114.00
5	Prof. Tashi Nautiyal (Batch Representative)	Sarojinites for Sarojinites MCM	270,000.00
6	Shri Arun Kumar Sharma (Batch Representatives)	Batch 1971 MCM Scholarship	250,000.00
7	Class of 1983 Batch	Professional Development & Innovation award	11,000.00

### Alumni Meets/Reunions (From 01 April, 2022 to 31 March, 2023):

IIT Roorkee rejoiced in organizing various Jubilee Reunions & Alumni get-togethers for different batches of alumni. The following is a glimpse of the enthusiastic participation of the alumni along with their families in the re-unions:

- i) Emerald Jubilee Reunion of 1967 & 1968 (BArch) batch was celebrated during October 28-30, 2022. 56 enthusiastic alumni along with their families had participated.





ii) Silver Jubilee Reunion of 1997 & 1998(BArch) batch was celebrated during November 18-20, 2022. 167 enthusiastic alumni along with their families had participated.



v) Silver Jubilee Reunion of 1996 & 1997 (BArch) batch was celebrated during December 09-11, 2022. 149 enthusiastic alumni along with their families had participated.



iii) Golden Jubilee Reunion of 1972 & 1973 (BArch) batch was celebrated during November 23-25, 2022. 101 enthusiastic alumni along with their families had participated.



vi) Pearl Jubilee Reunion of 1992 & 1993 (BArch) batch was celebrated during December 24-25, 2022. 38 enthusiastic alumni along with their families had participated.



iv) Diamond Jubilee Reunion of 1962 & 1963 (BArch) batch was celebrated during November 27-29, 2022. 34 enthusiastic alumni along with their families had participated.



vii) Silver Jubilee Reunion of 1995 & 1996(BArch) batch was celebrated during March 24-26, 2023. 160 enthusiastic alumni along with their families had participated.





### List of Distinguished Alumnus Award (DAA) - 2021

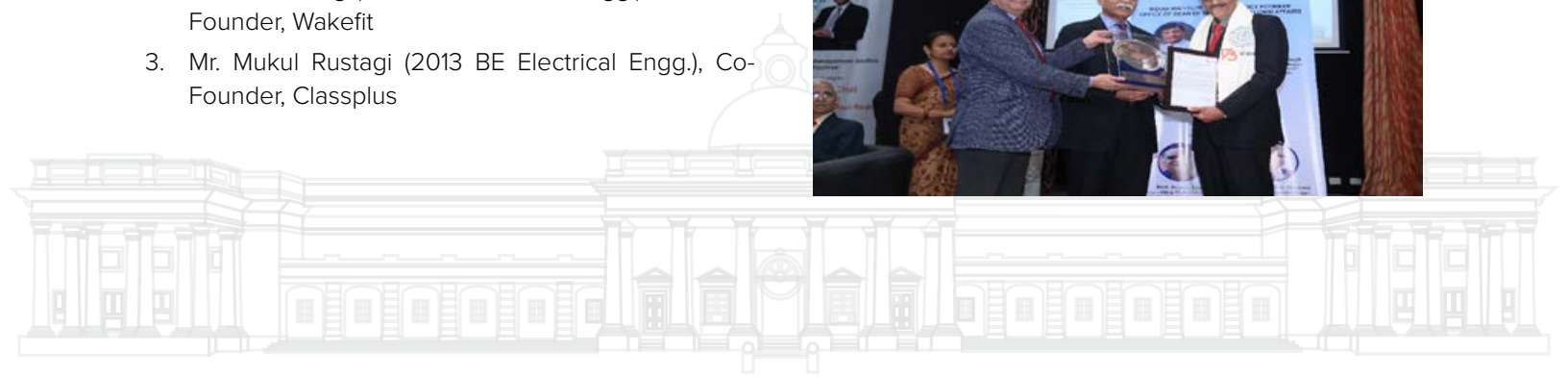
1. Prof. O. P. Malik (1962 ME Electrical Engg.), Professor Emeritus, University of Calgary, Canada
2. Prof. Rajeev Ahuja (1986 MSc Physics), Professor, Uppsala University, Uppsala, Sweden
3. Dr. Dinesh Srivastava (1982 BE Metallurgy and Materials Engg.), Distinguished Scientist & Chief Executive, NFC
4. Dr. S.S.V. Ramakumar (1984 MSc Chemistry), Director (R&D) and Board Member, Indian Oil Corporation
5. Dr. Shailendra Kumar Joshi (1981 BE Electronics & Communication Engg.), Retired Chief Secretary, Govt of Telangana
6. Dr. Dinesh Kumar Likhi (1981 BE Metallurgy and Materials Engg.), Retired Chairman cum Managing Director, MIDHANI
7. Mr. Saurabh Agrawal (1982 BE Chemical Engg.), Group CFO and Director, Tata Sons
8. Mr. Sumit Dhawan (1996 BE Computer Sciences Engg.), President at VMware, California, US

### List of Distinguished Young Alumnus Award (DYAA) - 2021

1. Prof. Raju Kumar Gupta (2005 BE Chemical Engg.), Professor, Department of Chemical Engg., IIT Kanpur
2. Mr. Ankit Garg (2010 BE Chemical Engg.), CEO Co-Founder, Wakefit
3. Mr. Mukul Rustagi (2013 BE Electrical Engg.), Co-Founder, Classplus

### List of Outstanding Service Award (OSA) 2021

1. Mr. Pitamber Shivnani, MD & CEO GE T&D India Limited
2. Mr. Kiran Panesar, Staff Software Engineer, Google, CA US
3. Mr. Pradeep Kumar Bhatnagar, President Technical at Reliance Jio



# Institute Events

## 175th Year Special Activities

The Thomason College of Engineering was founded in 1847 by James Thomason, the Lieutenant-Governor of the North-Western Provinces (in which Roorkee then lay) to aid engineers and surveyors at work in the construction of the Ganges Canal. Being the first Engineering College in India, the Thomason College has earned a Heritage status that has become the University of Roorkee after the Independence of India. On 21 September 2001, an ordinance issued by the Government of India declared it as the nation's seventh Indian Institute of Technology, renaming it to the current name, Indian Institute of Technology Roorkee. The ordinance was converted into an act by the Parliament to make IIT Roorkee an "Institution of National Importance". With a profound legacy, Indian Institute of Technology Roorkee (erstwhile University of Roorkee) is celebrating 175 years (1847-2022) of its existence and contribution in imparting higher education and for the development of the society.

The celebrations for the 175th Year began from November 25th, 2021, and culminated on November 24th, 2022. As part of the 175th year celebrations, the institute has conducted a plethora of activities in all domains and surroundings. Partnering with academic institutions and research organizations around Roorkee. IITR@175 initiative has reached out to institutions around Roorkee for collaboration, fostering research activities, offering research internships and handholding in developing laboratory infrastructure and to attract funding from various Govt and non-Govt organizations. Under this partnership the following academic institutions are supported: Graphic Era (Deemed to be University), Dehradun; Swami Rama Himalayan University, Jolly Grant, Dehradun; Noida Institute of Engineering & Technology, Greater Noida; National Institute of Technology, Uttarakhand, and College of Engineering Roorkee (COER). This has created avenues of collaboration not only in research and innovation, but also opportunities and support for startup incubation and commercialization. This is in alignment with Hon'ble Prime Minister's vision of creating a knowledge and a resource base for academic institutions.

A number of Fellowships/Internships/Incubation facilitation schemes have been taken up as a part of the 175 years celebration. These include PhD Fellowships to faculty members/scientists/engineers of AICTE or UGC recognized academic institutions or government funded research organizations who get admission in the full time PhD program of the Institute for three years. This scheme is applicable to the institutions in the states of Uttarakhand, UP, Haryana, Punjab, Himachal Pradesh, and UT of Chandigarh. Two months summer internship for UG students under SPARK program, research opportunity for M.Tech students, are also included in 175@IITR initiatives. IIT Roorkee has offered summer internships to the students from different institutes under the SPARK internship on the occasion of 175 years. Also, IIT Roorkee is offering startup funding to promising ideas/innovations/prototypes developed under all these schemes.

As a part of the 175-year Celebration, a Calendar for 2022 – Capturing 175 years (1847-2022) of institutional journey of imparting technical education and contributions in the development of the society was released.

A commemorative Coin, Stamp and a Coffee Table Book have been released on occasion of 175 years of IIT Roorkee.





## Uttarakhand State Earthquake Early Warning System

Indian Institute of Technology Roorkee displayed the fully functional Uttarakhand State Earthquake Early Warning System (UEEWS), at the 3rd National Platform for Disaster Risk Reduction (3rd NPDRR) exhibition on March 10-11, 2023, held at Vigyan Bhawan in New Delhi. The earthquake early warning system (EEWS) Laboratory team had the privilege of presenting India's first regional earthquake early warning system, UEEWS in the presence of The Honorable Prime Minister, Shri Narendra Modi, and Honorable Home Minister, Shri Amit Shah. The political stalwarts personally interacted with the team and received a detailed briefing on the system's capabilities and benefits.

## World IP day 2023

IIT Roorkee's IPR Cell and IPR-Chair, along with the Institute's Innovation Council, organized an Experts Panel Discussion and Essay Writing Competition on "Women Driving Innovation through IP and Creativity" on 26th April 2023. Over 200 students participated, showcasing their writing skills and creativity, while raising awareness about the significance of IP and the role of women in innovation.

The essay writing competition helped students develop their writing skills and foster creativity while raising

awareness about the significance of IP and the role of women in innovation.

## India's G20 Presidency: Role of Startups, MSMEs, and Corporates for Atmanirbhar Bharat

IIT-Roorkee, in collaboration with Micro, Small and Medium Enterprises (MSME) and MDS IndoCan, organized a workshop at IIT Roorkee Saharanpur Campus as a pioneering initiative to foster collaboration between academia, industry, and commercialization sectors. This workshop aimed to bring together diverse talents and expertise. By leveraging the strengths of each sector, the workshop explored ways in which startups, MSMEs, and corporates can contribute to India's self-reliant (Atmanirbhar) vision. This unique platform facilitated the exchange of ideas, knowledge, and experiences, fostering innovation, and creating synergies that can drive the nation towards economic growth and self-sufficiency.

## National Technology Day 2023

The Hon'ble Governor of Uttarakhand, Lieutenant General Gurmit Singh ji visited IIT Roorkee on the occasion of National Technology Day on 11th May 2023 with a focused and definite agenda for the development



of Uttarakhand state. The event emphasized on strengthening women empowerment, connectivity, emerging technologies, organic farming, local products, tourism, wellness, self-help groups, ayurveda and other important topics. The Chief guest, in his powerful address to the gathering, highlighted the significance of future oriented research and development and technology. He also commended the institute's Yoga wellness program for faculty and students. This was followed by a round table discussion on "Future Growth of Uttarakhand and Role of IIT Roorkee - Opportunities and Possibilities" with Shri Yashpal Sardana (Plant Head, Hero Moto Corp), Brig. Krishnendu Das (135, Infantry Brigade), Prof Lalit Kumar Awasthi (Director, NIT Uttarakhand), Prof. Meenu Singh (Director, AIIMS Rishikesh), Prof. Akshay Dwivedi (Dean SRIC, IIT Roorkee) as panelists and Prof. Rajat Agarwal (ADII, IIT Roorkee) as the moderator.

## G20 Health Working Group (HWG) Meeting

IIT Roorkee participated in the G-20 Health Working Group (HWG) meeting held in Hyderabad from 4th to 6th June 2023. The institute showcased the following cutting-edge medical technologies developed at the institute

1. The BLO Detector, developed by Prof. Indranil Lahiri and team. This portable and affordable device offers quick screening for breast, lung, and oral cancers, providing a convenient solution for early detection.
2. Prof. Pravindra Kumar and team has introduced innovative solutions related to phthalate contamination. These solutions involved a phthalate binding protein-based approach to extract phthalate from contaminated water. Additionally, an engineered oxygenase gene capable of degrading phthalate and its isomeric forms was showcased. Prof. Kumar also highlighted the utility of an expression vector constructed from the transcriptional factor and virulence gene Cra, which facilitates the removal of fusion tags.
3. The startup venture, Super Good Nano Pvt. Ltd., led by Prof. Gopinath Packirisamy demonstrated groundbreaking advancements in nanotechnology, contributing to the field of medical research and development.

## Convocation

The 22nd Annual Convocation of the Indian Institute of Technology Roorkee was held with great pageantry on April 06, 2023. Shri Dharmendra Pradhan, Hon'ble Minister for Education; Skill Development and Entrepreneurship, Govt. of India was the Chief Guest in the Convocation, total 2022 Degrees of UG, PG & Ph.D. were awarded.

## 34th National Road Safety Month

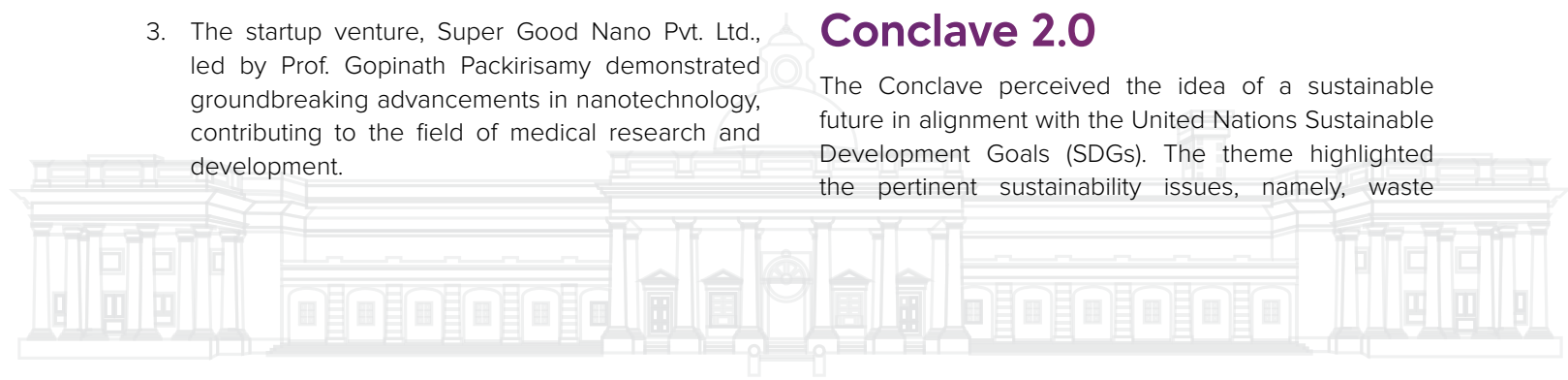
To mark the National Road Safety Month 2023, NSS IIT Roorkee organized an impactful series of event by hosting its inaugural Live Webinar on Defensive Riding Techniques followed by Mock Road Safety Audit (workshop-cum-project with iRAP), Road Safety Quizzes, Case study competitions, Workshops (on Riding Posture, Mounting & Dismounting, Safety Gears, Vehicle Check-up, Panic Braking, Riding on bad roads & Balancing challenge), Slow Bike Racing, Ideathon (on Don't Drive when Drunk) and Webinars (on Safe and Sustainable Transport & Road Safety: Individual Behaviour Matters).

## National Social Summit 2023

The National Social Summit, was a grand culmination of various events that aimed to promote social engagement and foster a spirit of innovation and creativity. Stereotypes are a ramification for a country as culturally diverse as India. For a rapid progression of such a diverse country, embracing the idea of perceiving "Beyond Conventions" is the need of the hour. The main events were guest lectures followed by the events Action Plan (B-Plan/ StartUp Pitching), Sociathon, Nukkad Natak (Street play), Model United Nations, Policy Case, Case Study, Work Presentation, Debate, E-Sports, Quizzes, Treasure Hunt and the Pre-Summit-Events, which featured Meme-it-up, Pixels (a photography competition), Caricature, Art Talkies and Micro Fiction (a creative writing competition).

## Conclave 2.0

The Conclave perceived the idea of a sustainable future in alignment with the United Nations Sustainable Development Goals (SDGs). The theme highlighted the pertinent sustainability issues, namely, waste



management in order to build a greener and cleaner world, environmental conservation in different ways including wildlife conservation, self-defense for girls, and career guidance for children in the village. It consisted of the following events: Career Guidance Workshop (guiding students about discovering their true interests), Orphanage Visit (spread love and joy at the orphanage 'Vatsalya Vatika'), Guest Lecture on Environmental conservation through Wildlife Conservation by Dr. Jerryl Banait, Waste Management Drive (Bharatpur jaat village), Self-defense Workshop (Taekwondo Training School), Blood Donation Camp at Saharanpur Campus.



## Startup Expo 2022

IIT Roorkee organized its first-ever Startup Expo as a part of the institute's 175 years' celebrations. The event showcased 50 amazing startups, their products and technologies in emerging fields of AI-ML, drone technology, robotics, health sciences, agriculture, environmental, energy sector and e-commerce. The event was conceptualized with a defense-centric theme. The objective was to serve as a medium of interaction

between the founders and various stakeholders, thus promoting a thriving entrepreneurial culture. IIT Roorkee students, faculty, startups, and more than 100 industry representatives participated in the event.

## International Day of Yoga

A 7-day yoga camp was organized at Lal Bahadur Shastri Stadium IIT Roorkee (Every day from 6:00 AM to 7:00 AM) with all common yoga protocols designed by the Ministry of Yoga. The main motto of celebrating the International Yoga Day was to raise awareness about the benefits of practicing yoga among the people. Every year a theme is set for the International Yoga Day. The theme for this year was Yoga for Vasudhaiva Kutumbakam, which signifies "the world is one family. Yoga experts were invited from Gurukul Kangari University, Haridwar, and Patanjali University, Haridwar, to demonstrate and administer different yogic kriyas, aasanas, pranayams, meditation and acupressure techniques for the benefit of campus community. It saw a huge turnout of around 700 people

## Desh ka Maan: Samvidhan

NSS IIT Roorkee took the initiative to conduct Painting and Quiz Competitions in six different schools of Roorkee, spanning from grade 1 to 8. The competitions aimed to engage and inspire young minds, encouraging them to reflect on the theme of "Desh ka Maan: Samvidhan", which emphasized the importance of honouring and understanding the constitution of our nation

## Hindi Pakhwara

Since 1980 the Institute has been organizing Hindi Day/week/pakhwara every year on 14 September. This year the Cell organized Hindi Pakhwara during 14 Sept. to 28 Sept. 2022. During this period, cell organized different type of competition like Hindi Translation, Noting & Drafting, Hindi Essay Writing and other incentive schemes for the staff. The prize distribution ceremony of these competitions was held on September 30, 2022. Chief guest of this function was Acharya Vishnudatta Rakesh. Total 38 winners including officers/faculty/employees/students were awarded in Hindi Pakhwara.



## Vigilance Awareness Week

The IIT Roorkee employees made a commitment to advance probity in public life and to create a society free of corruption as part of Vigilance Awareness Week, which will be observed from October 31 to November 6, 2022. The team at IIT Roorkee commits to upholding a culture of honesty and integrity and strong corporate governance based on openness, responsibility, and justice.

## Institute Lecture

- **Shri K. Rajaraman**, Secretary, Department of Telecommunications, Ministry of Communications, New Delhi, date: 22-10-2023, Topic: - 5G services and their roll-out in India.
- **Dr Anil Bhardwaj**, Director, Physical Research Laboratory, Ahmedabad., date 08-05-2023, Topic: Indian Planetary and Space Missions.
- **Dr Anuradda Ganesh**, Chief Technical Advisor, Cummins India. Date :13-03-2023, Topic: Hydrogen Economy (Study for the Heavy Commercial Vehicle Sector)
- **Dr SUDARSHAN KUMAR**, FNAE, FCI, FSEES, AFAIAA, PhD Institute Chair Professor and Head of the Department Indian Institute of Technology, Bombay, Date:31-03-2023, Topic: Flame Studies: Future of Energy.
- Mr. D K Singh, IAS and Secretary General, National Human Rights Commission Govt. of India, Date:15-02-2023, Topic: Human Rights and Education
- **Prof. Om Parkash Malik**, University of Calgary, Canada, Date: 11-11-2022, Topic: Adaptive and AI- based control applied to non-linear dynamic systems.
- **Shri A P Parigi**, Co founder, Radio Mirchi & Times OOH Media, Former MD & CEO, Times Innovation media ltd, Member, Business Advisory Council, SAID Business School, Oxford University, UK, Date: 07-11-2023, Topic: The Future of Work, Life & Learning A Prespective.
- **Prof. Arun Kumar Grover**, Honorary Professor, Punjab Engineering College, Chandigarh, Date: 04-05-2023, Topic: Scientific Heritage of the North-west of India: A Comprehension
- **Prof. Barry T. Rouse**, Distinguished Prof. College of Veterinary Medicine, Univ. of Tennessee (USA), Date: 08-02-2023, Topic: Immunity to Viruses: What determines the outcome?
- **Dr Kinshuk Dasgupta**, Head Advance Carbon Material section, G&AMD, Material Group, BARC Prof at HBNI, India. Date:07-07-2023, Topic: Bhabha Kavach: Translation Research Towards Indigenization.
- **Prof. Gopal Narayanan**, University of Massachusetts, Amherst, Date: 16-08-2022, Topic: Imaging black holes with the event horizon telescope.
- **Prof. Prashant Kumar**, University of Surrey, UK, Date: 26-12-2022, Topic: The Air We Breathe, Covid-19 & Beyond
- Prof. Sourav Pal, Head Department of Chemistry, Ashoka University, Sonapat, Haryana, Date: 28-04-2023, Topic: "Research and Innovation in Education: Path to world-class institutions"
- **Prof. Yashwant Gupta**, Distinguished Professor in the Tata Institute of Fundamental Research (TIFR), heads TIFR's National Centre for Radio Astrophysics, located in Pune, as the Centre Director. Date: 07-11-2022, Topic: Probing the universe using radio waves: where engineering meets astronomy.
- **Prof. Zare**, Stanford University-reg, Date: 19-12-2022, Topic: Using Tiny Water Droplets for Human Health.
- **Prof. Tomasz Paterek**, Xiamen University Malaysia and University of Gdańsk, Date:14-07-2023, Topic: Using Quantum Information to Test Gravity.
- **Mr. Lalit Mohan Kapoor**, Entrepreneur and Nutritionist, Silicon Valley USA, Date: 23-04-2022, Topic: Learn to Reverse Chronic Diseases Naturally.



# FACILITIES

## Infrastructure

During the last financial year, few major infrastructure projects namely Construction of Faculty residences at Vikas Nagar, Phase-I & II (180 Flats), and the construction, Replacement and retrofitting of 11 KV RMUs at various Substations at IIT Roorkee, Renovation of fire-fighting system at Triveni Apartment and New Technology Building at Saharanpur Campus, Renovation of New Examination Hall including Civil, Electrical, AC & Fire Safety Works, Installation of 200 kW Microgrid at Electrical Department, Upgradation of Sports Complex and facilities with High Mast LED lighting system, Retrofitting's of ACBs in LT Panels at several Substations in IIT Roorkee Campus, SITC of New ACBs in LT Panels, APFC etc. at several Substations in IIT Roorkee Campus respectively. Some of the building projects that would be constructed in the near future such as 'Construction of 572 Seaters Students Hostel (Phase-I) at Vigyan Kunj (EWS Scheme), 'Construction of Boy's Hostel 800 capacity at Vigyan Kunj (CPWD), Construction of Chemistry Department, Construction of Western Academic Block, Establishment of Electrical Distribution System SCADA and Centralized Monitoring and Analytic Centre.

## Mahatma Gandhi Central Library

Mahatma Gandhi Central Library (MGCL) is one of the oldest academic libraries in the country. Today, MGCL is housed in a modern, centrally air conditioned building equipped with all the latest ICT facilities. MGCL offers academic support services to the faculty members, researchers and students of IITR by meeting their academic and research information needs. MGCL served the IITR fraternity enthusiastically in providing all desired information support services needed by the users during the challenging COVID-19 global pandemic scenario when teaching and research activities were passing through extreme stress. In such a challenging situation, MGCL acted swiftly with bold conviction and enriched information resources in electronic forms and started many new online services to fulfil users'

immediate needs. MGCL worked swiftly and enabled the remote access service to help users access all the subscribed information resources remotely.

During the reporting period, 2570 new members were registered/renewed membership and utilized the circulation services facility. Currently, Central Library has over 8500 registered members. Faculty members and Students can draw books and textbooks as per the below-given privileges. Every student has to pay overdue charges Rs.2/- per-book per-day after due date.

The Institute has access to over 11,900 eJournals/eProceedings, 8 Full-text databases, 22 bibliographic, citation and other special databases, 3 Databases of eStandards, 7 journal archives collections and 63070 eBooks from several reputed publishers, aggregators and the national consortium eSodhSindhu. A detailed list of library resources is given in the following table.

S. N.	Types of Publications	Addition
1.	New Books Acquired	845
2.	Hindi Books Acquired	249
3.	Gratis Books Acquired	346
4.	eBooks Acquired	3979
5.	Braille Books Acquired	64
6.	Theses	203
7.	Dissertations	647
8.	eJournals (IITR+eSS)	11972
9.	Full-Text Databases (IITR+eSS)	8
10.	Bibliographic, Citation and Other Database	22
11.	Online Standards packages	3
12.	Online Newspapers & Magazines	5
13.	Print Newspapers & Magazines	37
14.	KNIMBUS- Remote Access Software	
15.	GRAMMERLY Premium-Language Support Software Tool	
16.	TURNITIN- Plagiarism Checking Software	

## FACILITIES, COMPUTER LAB, SOFTWARE AND TRAININGS, etc.

- a. Library is spread over four floors with a carpet area of 80,000 sq. ft. and a seating capacity of 500 users. Besides this, the library has a 24x7 open reading hall for 80 users.
- b. Library opens 362 days a year from 8.30 am till 12.00 midnight; and 24x7 one week prior to exams till the end of exams.
- c. Library has a well-equipped computer lab having 30 all-in-one computers dedicated to users for browsing information and academic resources. The library also provides printing and photocopy facilities at very nominal rates.
- d. MGCL subscribed to a large number of scholarly resources (viz. eJournals, eStandards, eDatabases, eBooks, etc.) from renowned scientific publishers and also facilitated access to online eResources available through eSodhSindhu consortium for IITR.
- e. As diversity and inclusion have become a concern for the Institute and society as well, issues, MGCL has proactively established a special library having Braille books for differently-abled users.
- f. Library subscribes to Grammarly Edu - A writing tool to check spelling and grammar and to Turnitin – a similarity check software to help IITR fraternity avoid plagiarism in their writings.
- g. Library organized the following training sessions for the benefit of library users:
  - Orientation Session on Press Reader (Newspapers & Magazines) – 31 Jan 2022
  - Info Session on Scholarly Communications and Plagiarism – 12 Feb 2022
  - Online Training Session on Turnitin for Faculty & Scholars – 19 Feb 2022
  - Webinar on Using Journal of Visual Experiments) in Classroom – 15 March 2022

The Central Library has access to eBooks from several publishers/aggregators, e.g., ACS eBooks Library, Bloomsbury Architecture Online Library, Bloomsbury Design Online Library, Bloomsbury Collection,

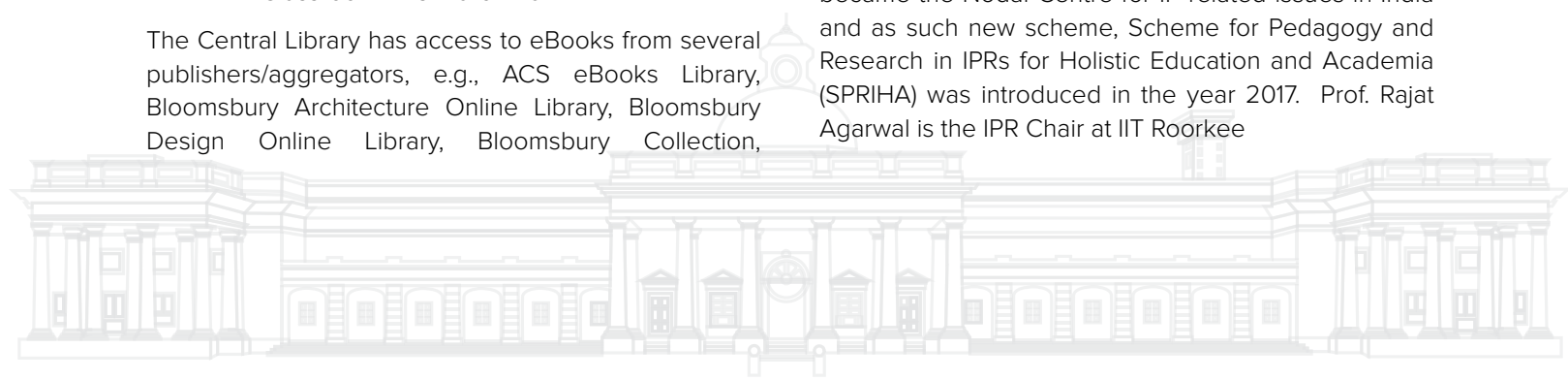
CBS eBooks Library, CRCnetBase eBooks Library, DeGruyter eBooks Library, Cambridge University Press Online Library, Edward Elgar eBooks Library, Emerald BME eBooks Library, IOP Society eBooks Library, McGraw-Hill Access Engineering & Education eBooks Library, SpringerNature Online Library Wiley Online Library, Oxford Scholarship Online Library, SAGE eVidya Library etc. The remote access service of the library called eLibrary (<https://elibrary.mgcl.iitr.ac.in>), along with its complementary Mobile App (mLibrary), is one of the most sought online services among the IITR fraternity. More than 63,000 eBooks and more than 11,900 eJournals are accessible through eLibrary portal and mLibrary mobile app. Currently, there are more than 8000 registered users of the remote access services. During the reporting period, the remote access services have been used more than 3 lakh times by 3377 active users. More than 2.9 lakhs electronic resources (books/chapters and research articles) were accessed in terms of remote access-based views and downloads.

As an extraordinary achievement the central has received CERTIFICATION SURVEILLANCE AUDIT OF MGCL: Surveillance Audit of MGCL's Quality Management System ISO-9001:2015 was completed as per standards and norms in Feb. 2023 by the auditors of British Standards Institutions (BSI) for Certification.

MGCL organized the "National Seminar on Information Systems & Services for Research & Innovation (NSISS-2022)" on 22nd September 2022 at Indian Institute of Technology Roorkee, Roorkee, Uttarakhand. The Organizing Secretary Dr. C. Jayakumar, Librarian moderated a Panel Discussion on "Enhancing Research in Academic Institutions: Role of LIS Professionals" during the seminar.

## DPIIT IPR Chair

The IPR Chair which was awarded to IIT Roorkee under erstwhile Scheme for Promotion of Copyrights and Patents was continued after the twelfth five-year plan. After the advent of new IPR Policy in the year 2016, DPIIT became the Nodal Centre for IP related issues in India and as such new scheme, Scheme for Pedagogy and Research in IPRs for Holistic Education and Academia (SPRIHA) was introduced in the year 2017. Prof. Rajat Agarwal is the IPR Chair at IIT Roorkee



The DPIIT IPR Chair is mandated to organize various activities with a holistic vision of creation of human intellect and capacity building in the area of Intellectual Property Rights. Apart from regular teaching, research and awareness creation in the field of IPR, Chair was also involved in various activities as per guidelines of DPIIT, Govt of India. Few important activities carried out in the FY 2022-23 are as follows.

1. Prof Rajat Agrawal is member of various National Level Expert committees and Think Tanks formed by DPIIT on issues related to IPR. Various Suggestions in the form of detailed report like research Report on Resultant Benefits of Improvement in IPR on the Indian Economy especially in terms of increase in GDP, FDI and Per Capita Income, research Report on Analysis of “The Hague Agreement concerning the International Registration of Industrial Designs” and research report on Royalty and its scope in India have been submitted to DPIIT.
2. Prof Rajat Agarwal attended JPO/IPR Training Course for IP Trainers from November 8 - 22, 2022 at Tokyo. It was sponsored by Japan patent Office and organized by APIC. He was awarded with ‘IP Friend’ award at the Training Program by Japan Patent Office.
3. Prof Rajat Agrawal became Danida fellow by attending Danida Fellowship Centre (DFC) Scholarship Programme titled “Fostering Innovation and Commercialization of Intellectual Property Rights” from 13th March – 31st March 2023 in Denmark. The course was fully funded by Danida Fellowship Centre, Ministry of Foreign Affairs, Government of Denmark.
4. Prof. Rajat Agrawal conducted thirty-three workshops in the Financial year 2022-23, in the domain of IPR at different parts of the country to sensitize people from Academia, Industry and other fields on as to how IPRs are the new age tool for improving lives. Few important workshops conducted by Prof. Agrawal include, workshop on IPR and innovation at CSIR-National Botanical Research Institute, Lucknow on 12.09.2022, workshop on Business Models for Start-ups, under one week one Lab Initiative of CSIR at Central Building Research Institute, Roorkee On 10th January 2023. Workshop on Innovation and Creativity for CDAC Mohali on February 27th .2023,

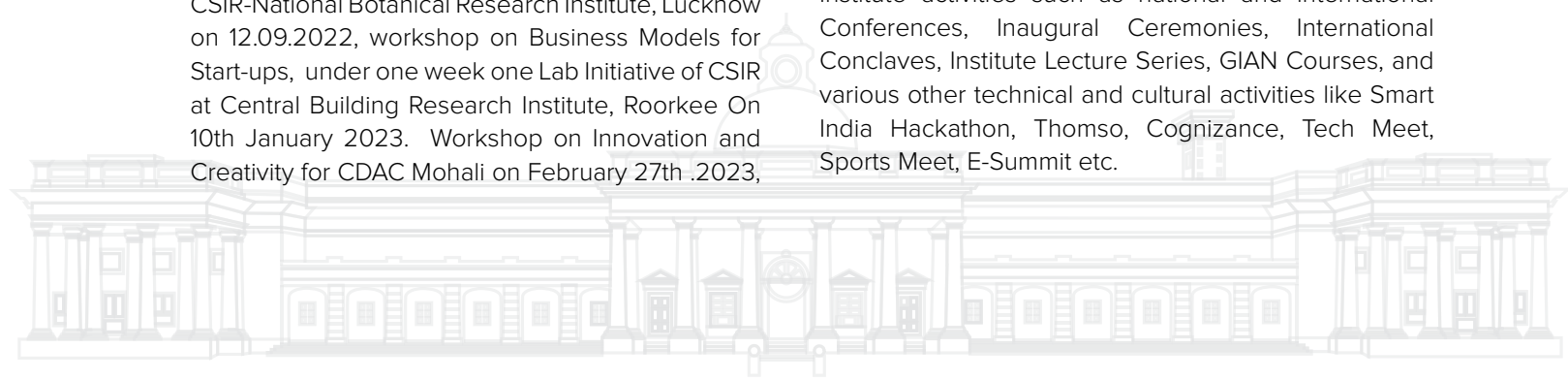
Training Program on IPR at National Innovation Foundation, Dehradun on May 18th 2022.

5. An online IPR Repository has been developed by the IPR Chair IIT Roorkee dedicated to learning of various IPR related Acts. The purpose of this website to provide in-depth information to people about various IPR related laws The website can be accessed at <https://iprchair.carrd.co/>. A dedicated website titled IPR Update Live has been developed by IPR Chair IIT Roorkee. The link to website <https://iprupdate.live/> . The website is exclusively developed for disseminating IP related activities which are happening world over. With a single click of mouse, the users can get themselves acquaint with the latest happening in the world of IPRs.

## E - LEARNING CENTRE

The E-Learning Centre (ELC), formerly the Educational Technology Cell (ET CELL), is part of IIT Roorkee and focuses on producing high-quality video, web, and multimedia-based instructional materials. It also develops content for the National Programme on Technology Enhanced Learning (NPTEL) project and offers short courses for faculty development. The center also trains faculty to develop their own e-content, facilitates video and web-based lectures, creates question banks, and controls e-content generation through feedback mechanisms.

During the year 2022-23, E-Learning Centre recorded 20 courses, covering 08 disciplines at IIT Roorkee. During the year, E-Learning Centre provided 161 semester-long courses content to National Programme on Technology Enhanced Learning (NPTEL) which are offered as Massive Open Online Course. The Centre has an archive of 770 full semester-long courses. The viewership (enrolled) of courses through web stood at 469156 for 161 active courses. The Centre has successfully done live-streaming of important events such as Convocation, which were watched by more than 27000 viewers. The Centre also covered various Institute activities such as national and international Conferences, Inaugural Ceremonies, International Conclaves, Institute Lecture Series, GIAN Courses, and various other technical and cultural activities like Smart India Hackathon, Thomsco, Cognizance, Tech Meet, Sports Meet, E-Summit etc.





## Computer Centre

ICC is dedicated to provide best-in-class IT services & support to the academic, research & administrative activities of the institute.

### Major Facilities

- PARAM Ganga Supercomputer@1.67 PF
- Scientific & Engineering Software
- High End Graphic Workstations
- GPU Based HPC (NVIDIA DGX1)
- Microsoft Azure
- AWS
- Eduroam
- Data Centre
- Email Services
- Ultra-High Speed Intranet Services
- 20 Gigabit Internet connectivity
- OFC based P2P SRE and GNEC Campus connectivity
- NKN Virtual Classrooms
- NKN Video Conferencing Services
- Collaboration services
- Live Streaming Facility
- Online Classes (Microsoft Teams, Webex)
- Online placement services

### Notable Activities in the Department:

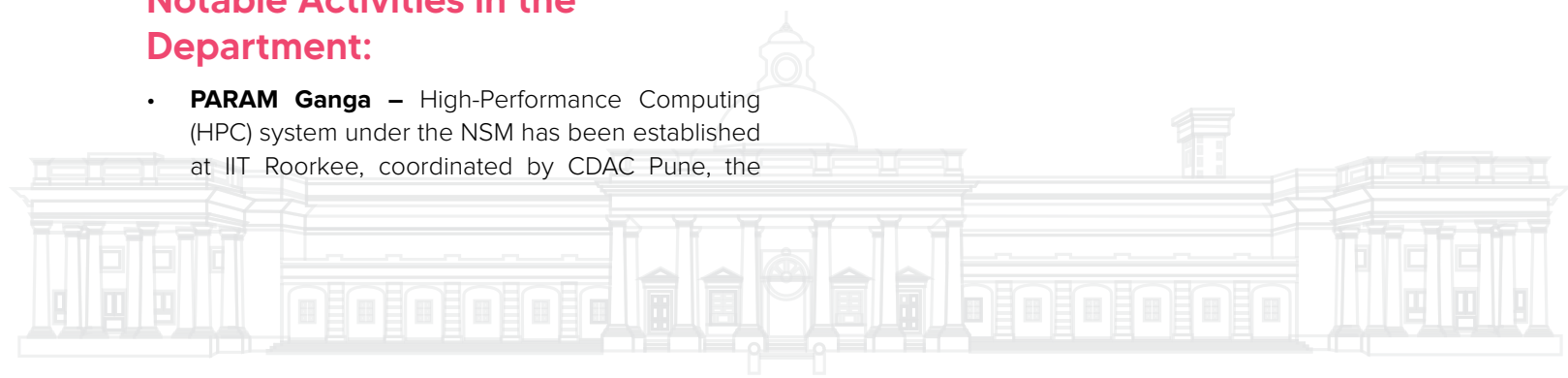
- **PARAM Ganga** – High-Performance Computing (HPC) system under the NSM has been established at IIT Roorkee, coordinated by CDAC Pune, the

Department of Science and Technology (DST) and the Ministry of Electronics and Information Technology (MeitY).

- **Wired & WiFi Internet facility at New Mathematics & HSS Building.** The project has been completed this year successfully.
- **Wired & WiFi Internet facility in river View Apartment:** Wired & WiFi Internet facility at newly constructed Riverview Apartment has been completed this year successfully.
- **In-Progress:** Network Infrastructure Upgradation Plan for Saharanpur Campus along with its Integration with IITR Main campus using NKN Private VPN Architecture.
- **In Progress:** Network Upgradation of Bhavans.

Several webinars/symposiums/workshops/conferences were organized, a few of them are listed below: -

- Parallel Computing with MATLAB on PARAM Ganga
- Intel's oneAPI Profiling Tools under NSM
- Online Workshop and webinars on COMSOL v 6.1 and its various modules
- Online workshop on ArcGIS Pro or education and research
- Online sessions by Microsoft on M365 and MS





## Instrumentation Centre

Institute Instrumentation Centre (IIC) houses large number of sophisticated instruments used for high magnification imaging, material characterization, precision chemical analysis, etc. The Centre is run by trained technical manpower and researchers, who are guided by experienced Faculty experts.

Total no. of faculty	<b>01</b>
Adjunct/ Visiting –teaching faculty	<b>01</b>
No. of Post Doc. Fellows	<b>02</b>

## Overall Performance

Sr. No.	Laboratory	No of Users served	No. of Samples Analyzed/No. of Hours
<b>1</b>	<b>High Resolution Imaging</b>		
1.1	Field Emission Scanning Electron Microscope (Carl Zeiss, Gemini 300)	308	3260
1.2	Field Emission Scanning Electron Microscope (Carl Zeiss, Ultra Plus)	317	3880
1.3	Field Emission Scanning Electron Microscope with Low Vacuum (ThermoFisher, Apreo S)	312	4020
1.4	Electron Backscatter Diffraction (AMETEK EBSD with Apreo FESEM)	40	384
1.5	Transmission Electron Microscope (TEM)	130	356
1.6	Scanning Probe Microscope (SPM/AFM)	61	193
<b>2</b>	<b>Characterization of Materials</b>		
2.1	Powder X-Ray Diffractometer (XRD)	306	3907
2.2	Grating Incidence (Thin film) X-Ray Diffractometer	85	704
2.3	Pole Figure XRD	8	104
2.4	SQUID Magnetometer (Quantum Design, MPMS3)	61	4368
2.5	Thermo Gravimetric/ Differential Thermal Analyzer (TG/DTA)	231	4523
2.6	Fluorescence Lifetime System (FLS) TCSPC	8	27
2.7	Vibrating Sample Magnetometer (VSM) - Lake Shore	78	1400



Sr. No.	Laboratory	No of Users served	No. of Samples Analyzed/No. of Hours
2.8	Physical Property Measurement System (PPMS)	45	3888
2.9	UV-Vis NIR Spectrophotometer	32	66
<b>3.</b>	<b>Chemical Analysis of different Materials</b>		
3.1	Inductively Coupled Plasma Mass Spectrometry (ICP-MS MS)	285	6932
3.2	Liquid Chromatography Inductive Coupled Plasma Mass Spectrometry (LC-ICP-MS MS)	06	213
3.3	Microwave Plasma-Atomic Emission Spectrometer (MPAES)	235	2870
3.4	Microwave Sample Digestion (MSD)	2	56
3.5	X-Ray Photoelectron Spectroscopy (XPS)	359	1840
3.6	Ultraviolet Photoelectron Spectroscopy (UPS)	27	110
3.7	Electron Probe Micro-Analysis (EPMA)	3	14
<b>4.</b>	<b>Advanced Labs (Special Facilities)</b>		
4.1	Macromolecular Crystallographic Unit (MCU)	25	6480
4.2	Electron Paramagnetic Resonance (EPR) Spectroscopy	86	1219
4.3	Nuclear Magnetic Resonance (NMR)	117	1193
<b>5.</b>	<b>Other Facilities</b>		
5.1.	Liquid Nitrogen Plant (20 litres/Hour)		44571 Ltr
5.2.	Repair Lab		180 instruments

## Academic Activities

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	--	--
M. Tech	--	--
Ph. D	01	01

## R & D ACTIVITIES

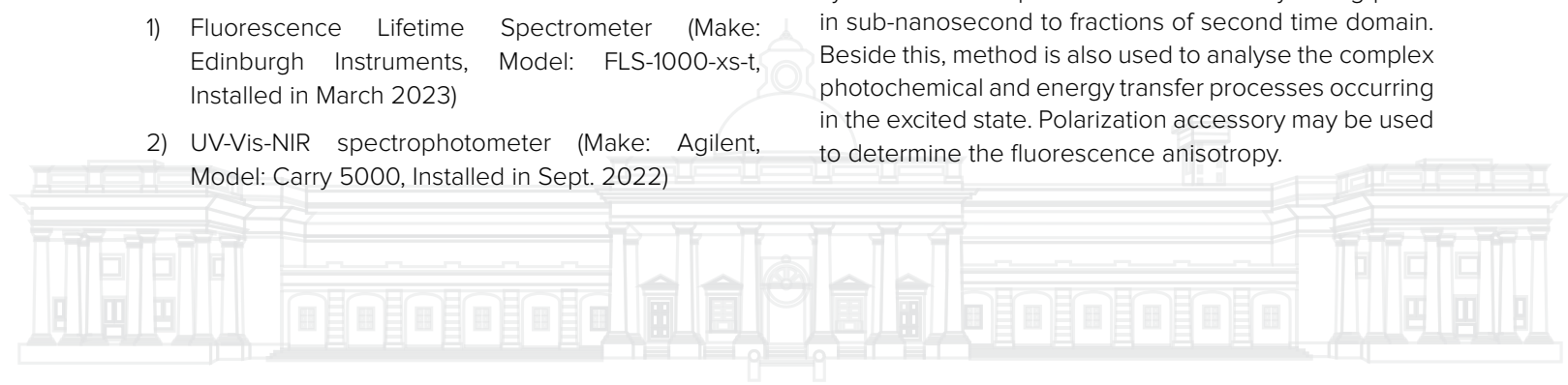
Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	--	--	--	--
Ongoing	01	95.40	--	--
Completed	--	--	03	15

## MAJOR FACILITIES: -

- 1) Fluorescence Lifetime Spectrometer (Make: Edinburgh Instruments, Model: FLS-1000-xs-t, Installed in March 2023)
- 2) UV-Vis-NIR spectrophotometer (Make: Agilent, Model: Carry 5000, Installed in Sept. 2022)

### NOTABLE ACTIVITIES IN THE DEPARTMENT:

Fluorescence Lifetime Spectrometer (Make: Edinburgh Instruments, Model: FLS-1000-xs-t, installed in March 2023) is among one of the powerful analytical probes being used extensively for analysis and characterization of compounds/materials in chemistry, materials science, physics, biotechnology, pharmaceuticals, environmental science, nanotechnology etc. A variety of light emitting diode (LED)/laser diode (LD) devices are employed as light source to generate ns/ps pulses over a wide spectral range. The pulse excites the sample from which the emission can be detected in UV-Vis range. The fluorescence decay kinetics along with the lifetime data usually provide an unambiguous identification of fluorescing material. The present fluorescence lifetime system is able to probe fast kinetic decay taking place in sub-nanosecond to fractions of second time domain. Beside this, method is also used to analyse the complex photochemical and energy transfer processes occurring in the excited state. Polarization accessory may be used to determine the fluorescence anisotropy.



The UV-Vis-NIR spectrophotometer (Make: Agilent, Model: Cary 5000, installed in Sept. 2022) is a high-performance spectrophotometer with good photometric performance in the wavelength range of 180 nm to 3300 nm. Using a PbSmart detector, the Cary 5000 extends its NIR range to 3300 nm making it a powerful tool for materials science research. Common application of UV-Vis-NIR Spectrophotometer includes: measurement of transmittance, absorbance and reflectance spectrum, thin film thickness analysis, anti-reflection coating analysis, analysis of novel nanocomposite materials, colour measurements and colour matching, optical density measurements, optical bandgap analysis, etc.

## PUBLICATION

	Book	Book Chapters	Paper in Conferences	Paper in Journal	IP Filed/ Granted
Total	--	--	--	08	--

## Continuing Education Centre (CEC)

Continuing Education Centre (CEC) was established in 1955 for the promotion of knowledge up-gradation by organizing refresher/specialist courses for executives, working professionals and aspiring individuals. In addition to the knowledge up-gradation of experienced professionals, CEC IIT Roorkee courses also offer a launch pad to technology professionals and students in the domains that are most sought after by the industry. Through these courses CEC also provides opportunity to visit and study at IIT Roorkee for a short duration. This year the Centre has conducted 35 online/physical modes short term courses in which about 1523 participants have been trained. The Centre has organized 21 Open participation courses of long duration in which about 730 participants participated successfully. Feedback received from these courses is very encouraging. In the year 2023-24, a number of new programs with leading partner organizations have also been planned.

Continuing Education Centre offers many programs/ courses of both short (up to 3 weeks) and long durations (up to a year) in sponsored as well as open participation mode. Further, during the lockdown period many courses in open participation mode were also launched in online/digital delivery mode jointly (through partnership MoU) with EdTechs to facilitate good outreach, implementation support, and involvement of industry experts to impart industry relevant learning. The following empanelled service providers in the educational space, on virtual platforms.

- TimesPRO
- Imarticus
- CloudXLab
- Simplilearn

## Quality Improvement Programme (QIP)

Pursue upgrading the faculty members' abilities at the nation's AICTE-approved degree-level engineering colleges in order to enhance the quality of technical education in the nation. Currently, the initiative is being carried out and overseen by the National QIP Coordination Committee (NQCC), which is financed by AICTE (A Statutory Body of the Government of India). In the year Financial Year 2022-2023 Twelve (12) on roll Ph.D. scholars doing their work under QIP from various AICTE approved engineering colleges across India.

## Official Language (Hindi) Cell

Official Language Cell was established on 31st January, 2002. Since the inception of its establishment, the Official Language Cell has not only been committed to comply with the Official Language policies of the Government of India, but has always been eager to promote the implementation of Official Language in the administrative and academic fields of the Institute. The cell plays a special role in Hindi translation of the

Institute's Annual Report, Annual Accounts Report, Institute website and all other necessary documents, forms etc. Apart from this, on the occasion of Hindi Day and International Mother Language Day, various competitions and incentive schemes are conducted and prizes are awarded to the faculty members, officers, employees, students and school children of the institute. Hindi training is also provided to the staff members every year on optional basis in language and typing course of the Central Hindi Training Institute.

**Achievement:** On 23rd January, 2023, Town Official Language Implementation Committee Haridwar awarded Rajbhasha Shield and Certificate to Indian Institute of Technology Roorkee in 35th meeting of TOLIC for excellent implementation of Official Language in 2021-22



IITR was awarded with shield & certificate

**Departmental Activities:** The details of various activities performed by the office during the year are following:

- Institute Official Language Implementation Committee:** The progress of Official Language in the institute is being monitored regularly by the committee after every three months. More than 82 Meetings of this committee have been held till 31 March, 2023.
- Progressive Reports of Hindi:** Quaterly & Halfyearly reports, based on hindi progress in the institute, are sent after every three & six months to Ministry of Education, Regional Implementation Office (North) Ghaziabad. & Narakas, Haridwar Secretariat.
- Hindi Lecture & Workshop:** Official Language Cell organized Hindi Lectures & Workshops on different topics to promote Hindi among the staff of the

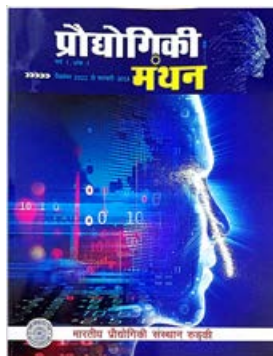
institute, so that they might be encouraged to do their official works in Hindi.

- Participation in NARAKAS Haridwar Activities:** Narakas is a Town Official Language Implementation Committee, which consists a group of central government offices. IIT Roorkee is also a member of Narakas, Haridwar. Director & staff of IIT Roorkee participated in meetings, conferences and many other events organized by Narakas, Haridwar time to time and got awarded also on a big platform.
- Hindi Function & Comptetion:** Since 1980 the Institute has been organizing Hindi Day/week/pakhwara every year on 14 September. This year the Cell organized Hindi Pakhwara during 14 Sept. to 28 Sept. 2022. During this period, cell organized different type of competition like Hindi Translation, Noting & Drafting, Hindi Essay Writing and other incentive schemes for the staff. The prize distribution ceremony of these competitions was held on September 30, 2022. Chief guest of this function was Acharya Vishnudatta Rakesh. Total 38 winners including officers/faculty/employees/students were awarded in Hindi Pakhwara.



- International Mother Language Day & Comptetion:** on occasion of International Mother language day 2023, some competitions like Transcreation, Poem writing and Essay writing were organized for the institute students in their own mother tongue. Poster making competitions were also organized for the schoolly students in their mother tongue, so that different languages might be encouraged and alive among IIT community.

7. **Publication of Hindi Magazine:** “Praudyogikee Manthan” is a half yearly Hindi Magazine published by Hindi cell. It consists articles based on technology, science and research as well as on subjects related to official language, translation, education, sports and health. Selected three articles of it are awarded also in Hindi Function.



Hindi Magazine  
“Praudyogikee Mathan”

## Hindi Magazine “Praudyogikee Mathan”

8. **Hindi Language & Hindi Typing Training:** Weekly Classes of Hindi language & typing were organized by the cell in office and Computer centre. On 16-17 January 2023, Hindi Typing Exam was conducted in four sessions at the lab of the Electronics and Computer Engineering deptt. for 34 registered employees of the institute and 51 of Dehradun. Like that language exam was conducted at Dehradun centre.
9. **Hindi Book Exhibition:** On the occasion of Hindi Function, Hindi Books Exhibition was held in Mahatma Gandhi Central library from 16 to 30 Sept 2022. There is ten thousand Hindi books around.



Hindi Book Exhibition

10. **Translation:** The Cell has played an important role in translation of Annual Report, Convocation Report, circulars /orders and proof reading of JEE ADVANCED 2023 Information Brochure's Hindi.

## Rethink! The Tinkering Lab

The objective of the Tinkering Lab at IIT Roorkee is to provide a creative and hands-on learning environment where students can foster innovation, develop problem-solving skills, and bridge the gap between theoretical knowledge and practical applications through experiential learning. The lab aims to inspire and nurture students' creativity, encourage collaboration and teamwork, and support entrepreneurial initiatives, ultimately equipping students with the skills and mind set necessary for real-world problem-solving and innovation.

### Academic Courses Supported

- Additive Manufacturing (MIN 601)
- Advance Manufacturing Process (MIN 572)
- Product Design and Development (MIN 575)
- Design Thinking (IDN- 503)
- Form Design (IDN -504)

**R & D ACTIVITIES:** - Tinkering Lab have provided incubation support to following projects.

1. Pre-incubation Projects supported by Tinkering Lab like Black Hawk and AlaoEase.
2. Startups incubated at TIDES and TIH supported by Tinkering Lab like Ednam Solutions Private Limited, Brainovative Labs Private Limited, Linearized Amplifier Technologies and Services Private Limited and Uma Robotic Technology
3. Non-Funded Projects of UG, PG, Ph.D. students, faculties and Student Technical Council groups supported by Tinkering Lab including 74 projects a few of them are IRDC 2022, Zip lock, Designathon 2022, Saturation Assembly, Design Thinking - Ravana Bizzare Project, Machine Learning Implementation using Raspberry pi, Mars rover, Ideation project, Photodetector Devices screening, Singapore Auv Challenge 2022, Repro Air, IDN-701 - Design Project, Robotic Arm, Techsarthi, Smart Door Lock, Laser Scanning, 3D Bioprinting And Cell Culture Facility, Gas Stove for Blind People, Aerothon'22, Balsawood RC Plane, Zoetrope many more.

## MAJOR FACILITIES:

- o Vertical Milling Centre
- o Multijet Project MJP 3600 max
- o Bio 3D Printing and Cell Culture
- o Fiber Metal Laser Cutter

## NOTABLE ACTIVITIES IN THE DEPARTMENT:

- Tinkering Lab is setting up a Cyber-Physical Space facility Under iHUB DivyaSampark in Embedded Design for Drone/Arial Robots with Control, and coordination for autonomous flying. Surveillance, remote sensing, and data analytics activity with AI/ ML and scalable Cloud support, Drone Architecture Design and Assembly with Innovation using Additive Manufacturing and AR/VR for Metaverse.
- A Memorandum of Understanding (MoU) was also signed with iHUB Divyasampark IIT Roorkee and TIDES IIT Roorkee in January 2022 to motivate newly admitted undergraduates. It is a peer-to-peer technical mentorship program Tinker Next; which provides funding and mentorship possibilities from the industries most diligent experts, once get approved by the review committee. It connects juniors (Mentees) with their seniors (Innomentors) for technical learning through project ideas provided by the innovators. The projects can be in broad fields domains viz., Artificial intelligence, IoT (Internet of Things), Data Sciences, Blockchain, Software Development, Computer Vision and Image Processing, Quantum Computing, Product Design, Electronics & Robotics, and UI/UX design. Since its launch, seven projects have been enrolled and two expert talks and one industry visit have been organized.
- The World's Biggest Open Innovation Model, SIH 2022, was organized by the Ministry of Education's Innovation Cell (MIC) and the All India Council for Technical Education (AICTE). The event is a nationwide initiative to provide students with a platform to solve some of the pressing problems we face daily, thus inculcating a product innovation culture and a mindset of problem-solving. SIH 2022 focused on both Software and Hardware approaches to develop innovative solutions for problems and challenges from various Central Ministries/ Departments, State/UT Governments,

Public Sector Undertakings, and industries listed more than 550 problem statements from 61 organizations of various Ministries and Industries. Tinkering Lab conducted the Internal Hackathon, SIH software and hardware edition 2022 in March 2022, where 11 teams from the Institute were shortlisted post three screening stages with 13 ideas under various problem statements given by PSU's/Industry personnel/ Central Ministry and student innovation category. After the successfully hosting previous two SIH Hardware editions in 2018 and 2019, IIT Roorkee got selected by MHRD MIC to host the Grand Finale of Smart India Hackathon 2022 as well for the hardware edition which was held at Tinkering Lab from Aug 25, 2022, to Aug 29, 2022. The event witnessed nineteen teams comprising 127 participants and mentors from PAN India

## Patents supported by Tinkering Lab

- A planar to spatial tendon driven under actuated continuum arm mobile robot
- A free form tool fabrication using flexible 3D printed mold and low melting fusible alloy for Electro chemical machining process
- Liquid tool based electrochemical machining texturing device and its process
- A material for absorbing lower middle frequency sounds
- Anti-rotational pads for helmet
- A biodegradable and biocompatible polymer based functionalised bilayer scaffold for peripheral nerve and guided motor neuron regeneration

## Some of the Key Events/Programs

- Educators Training Program on Artificial Intelligence (AI) of things
- Workshop on Cyber Security
- Smart India Hackathon 2022
- Workshop on Additive manufacturing
- Workshop on Metaverse
- Think Thursday:
- Intro Talk '23
- Productathon
- Workshop on Rapid Prototyping: An introduction to Additive Manufacturing





## R&D Projects Fabricated in Tinkering Lab

### Design and Application of Labyrinthine Acoustic Metamaterial for Noise control in Home Appliances

Broad range low frequency sound attenuation is the key challenge in machinery noise control, which may be addressed through the use of Acoustic Metamaterials. This experimental work a new Labyrinthine Acoustic Metamaterial that consists of paired sub-wavelength folded slit-type air cavity surrounded by sound hard boundaries, and combined with a micro-perforated slit panel. FEM simulations show that the proposed metamaterial gives high sound attenuation, with more than 70% sound energy reduction at 380 to 600 Hz frequencies, with the sound attenuation bandwidth of

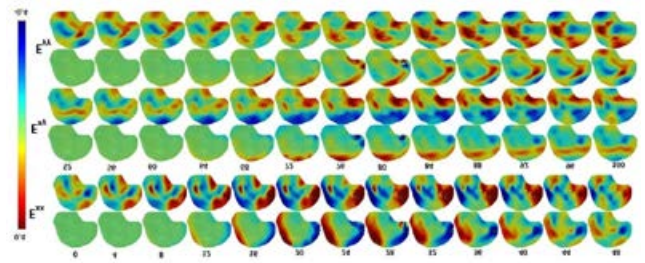
220 Hz. The proposed metamaterial was fabricated using additive manufacturing and installed in a commercial home air sanitizer with a heavy blower. It is found to reduce the noise level of this appliance by 6 dB at high blower speeds, by 6 dB at medium blower speeds, and by 5 dB at low blower speeds. Thus, the proposed metamaterial has great potential for low frequency machinery noise control.

### Biomechanics of Head Trauma

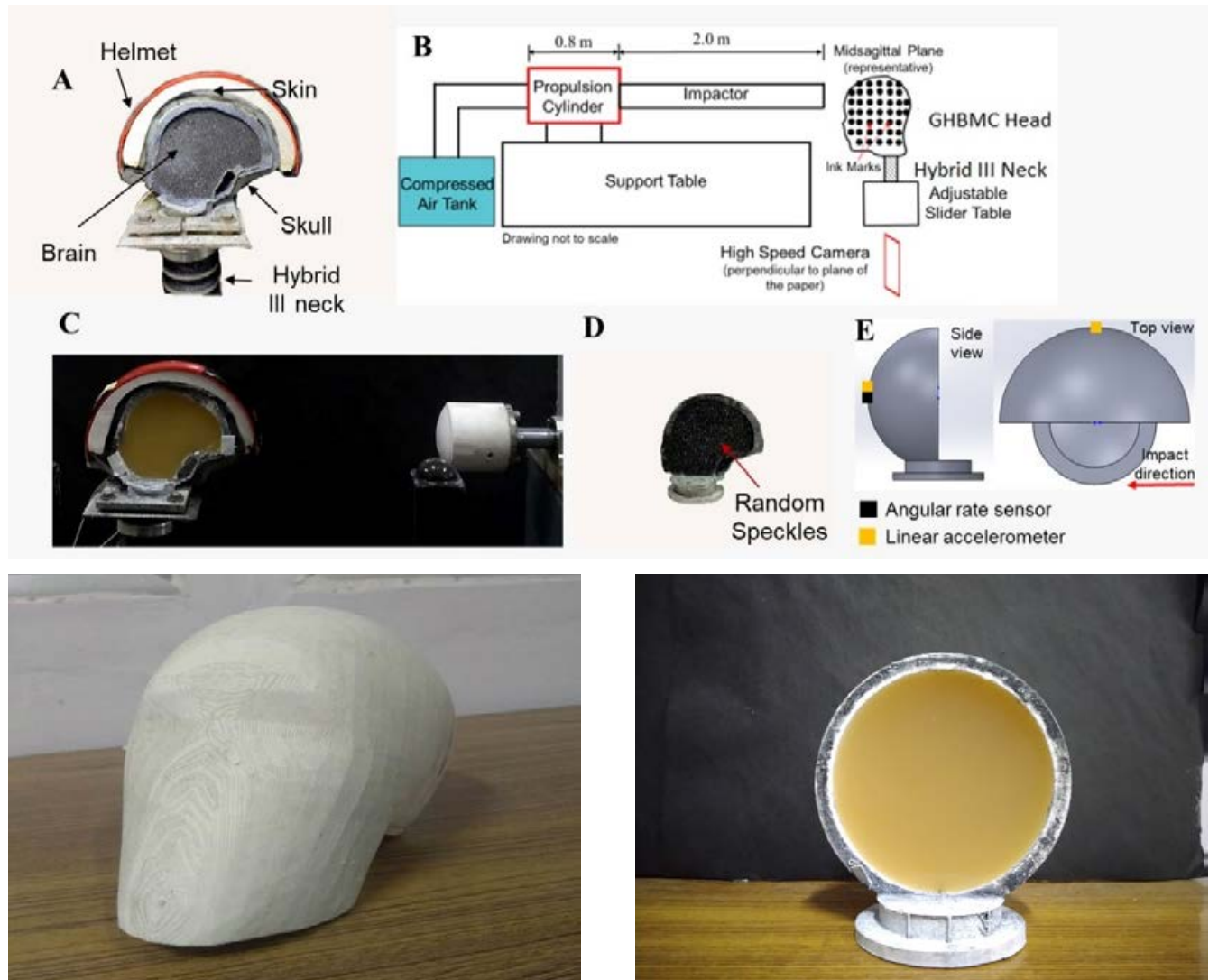
In this project, we are trying to study the effect of impact on the human head surrogate model. We have used a 3D printing machine to print the human head surrogate model. To print it we used polycarbonate material and the printed head model - half section (sagittal plane) and checked the effectiveness of the available ISO helmet



and to make it safer we developed anti-rotational pads for existing helmets (patent published). Basically, the available helmets are only designed to mitigate the effect of linear impact/acceleration but we found during the accident both motions were experienced by the human head. To mitigate the effect of angular motion, developed low-cost anti-rotational pads and attached them in helmets and found that the chance of brain injury due to rotational motion decreased (magnitude of shear strain decreases).



Fig(i) Computed brain simulant strain for impactor velocity of 3m/s



Fig(ii)- Fabricated 3D models



## Bioimplant

During these days permanent bioimplants having some issues like secondary surgery after bone fixation, stress shielding and lot more, to overcome these issues researchers are working on non-permanent or biodegradable implants. my research area is development of biodegradable implants which minimize the disadvantages of permanent implants as well as less harmful for human body.

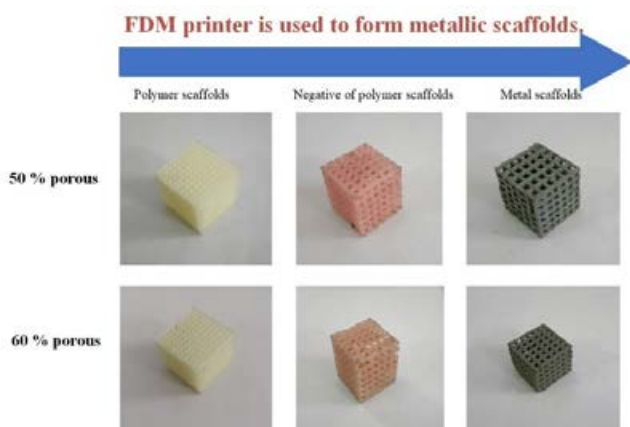
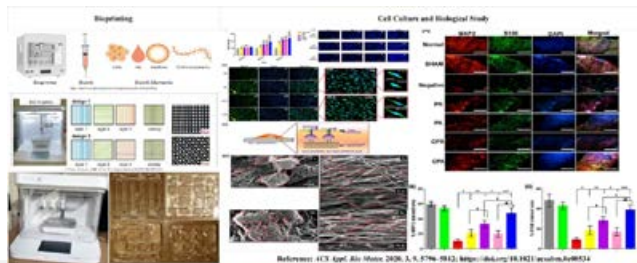


Fig (iii) – Scaffold structures

## 3D Printing Scaffold for Tissue Engineering Applications-Neural, bone, and pancreatic

Designing a scaffold by AutoCAD or Solidworks software then printing the design by 3D bioprinter with bio-ink and characterizing the scaffold for biomedical applications. In the cell culture facility, we culture the cell on a sterilized cell culture disc inside a biosafety level 2 hood and keep the cells inside the incubator for growing and proliferation under optimum conditions. Then grown cells have been used for biocompatibility tests of the 3D printed scaffolds.



Fig(iv)- Bio Printing cell culture and biological study

## Tinker Next- Technical mentorship program

Tinker Next is a peer-to-peer technical mentorship program that connects first and second-year undergraduates to an Innomentor for apt technical learning through the self-selected project ideas from Innomentors. The ideas will be fully supported in terms of facilities and consumables until graduation from the program. The projects will have the opportunity to get funded by TIH /TIDES. The following projects are currently running under the mentorship program

### i. Condition Monitoring and Fault Prediction of Electrical Equipment

This proposal gives end-to-end solutions for condition monitoring, starting from low-cost sensor design to data acquisition and fault prediction. By adopting analog devices and corresponding circuit design techniques, a variety of low-cost sensors will be designed to sense voltage, current, frequency, temperature, and light. The microcontroller-based data acquisition system with a transceiver helps to store the monitored data into a database. By designing a machine learning algorithm, the discrepancy in data can be identified and correlated with other sensor data, to predict the nature of the fault and its time of occurrence.

### ii. Anomaly Detection in CPU usage

Anomaly Detection means the identification of unexpected events or outliers in a process. Outliers are the data points that deviate significantly from the general behavior of the data. It is used to detect threats to our system that may cause harm in terms of security and leakage of important information. We'll be using the Auto-Regressive Integrated Moving Average (ARIMA) model for time series prediction. ARIMA is a class of models that does forecasting based on it's own errors, past values and lags.

### iii. Bicopter

A Bicopter with VTOL capability. Communication is established using IOT. For future aspects it will use Machine learning with various sensor data. MATLAB and IOT knowledge will be a plus point for mentee.



#### iv. Repair

Evaporative cooling without humidification at 1/4th electricity consumption compared to A/C also provides air compared to A/C. The working of the product is based on the concept of indirect evaporative cooling.



#### v. A high-performance Voltage Source Inverter and Motor Control System for Electric Vehicles

The purpose of this work is to develop and produce the power electronics and motor control system needed to control such an electric machine, where the final product is used to drive a fully electric prototype racing car. This project involves conceptual work, design choices, prototyping, testing and development of such a high-voltage and high-performance motor controller system for Permanent Magnet Synchronous Motors. In the system development process, simulation and modelling tools have to be applied to investigate different solutions and technologies. These tools are to be used to design the electric circuits, program code and mechanical design needed for the system. The final product is to be installed in a racing car.

## Greater Noida Extension Centre

IIT Roorkee GNEC Campus is spread over a lush green area of 10.42 acres in the knowledge park II of Greater Noida. Its campus is highly secured and well connected through the Noida-Greater Noida Expressway, Yamuna Expressway and the Metro making it an exciting platform to showcase IITRs strength and capabilities in the fields of education, research, consultancy, emerging technologies and incubation, with an aim to accelerate the process of nation building. Being surrounded by a large number of technical institutions and in close vicinity of expanding industrial hub IIT Roorkee, through this Extension Centre intends to extend its outreach to the industry and academia.

Several short term & sponsored courses were organized, a few of them mentioned below

- Startup Masterclass On "Building A Technology Based Startup"
- Mid Term Examination MTech VLSI
- Training Program for CPSUs By NPTI
- Training to IRCON Employees On Advance Surveying
- Brainstorming Session On "Application of Metagenomics and Metabolomics In Geosciences"



# Departments, Centres and School



## Department of Architecture and Planning

The Department of Architecture and Planning imparts high-quality education in the professional fields of Architecture and Planning and offers the Bachelor of Architecture (B. Arch.), Master of Architecture (M. Arch.), Master of Urban and Rural Planning (MURP) and Ph.D. programs. The B. Arch. was started in 1956. The department has the singular distinction of being the first in India in instituting a Masters Degree Program M. Arch. in the year 1969-70 and later another one, MURP in 1973-74. The Department has been ranked as No. 1 in the country for architectural education for 3rd year in a row by NIRF.

Total no. of Faculty	15
Adjunct/ Visiting –Teaching Faculty	1
No. of PMRF	11

## Academic Programmes

The Department offers a Five-year course leading to bachelor's degree in Architecture and Two year courses leading to Masters in Architecture and Masters in Urban and Rural Planning. Also PhD Scholars are pursuing Research in the Department.

Programmes Offered	Students On-Roll	Degrees Awarded
B. Arch	164	32
M. Arch/MURP	50	30
Ph.D	116	7

## R & D Activities

The Department has facilities like Climatology Lab, Computer Lab, and Computerized Design Studios equipped with state-of-art equipment and software, an Art Lab, and a Workshop. A prestigious lab on Net Zero Emissions, set up under the INDO-UK program, is the latest addition in the department. Alongside, seven new labs have been set up in the Department namely Virtual Reality Lab, SPARSH (Spatial Planning research), Urban Dynamics Lab, Civic Design Lab, Industrial Design Lab, Fabrication Lab, Built Environment Lab, Laboratory for Inclusive Design, SURREAL Lab and Infrastructure Planning Lab to conduct high-end research in various spectrum of architecture and planning.

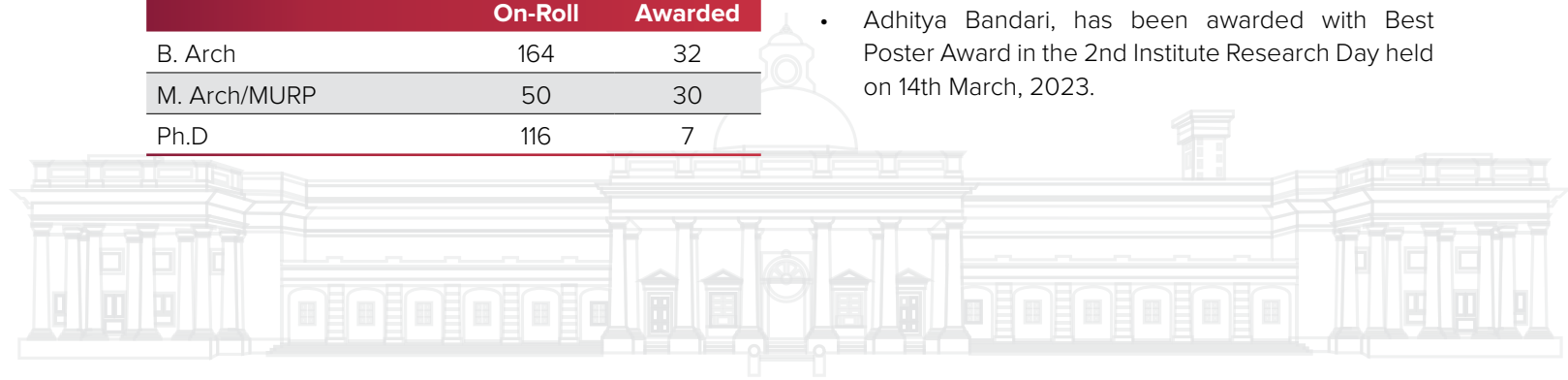
Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	-	-	1	40.20
Ongoing	4	75.72	-	-
Completed	-	-	-	-

## Major Facilities

SIMPOD for climate simulation and full-scale building envelope testing.

## Student Achivements

- Ms. Chetna, has been received Commonwealth Split-site scholarship and worked for 2 Semester in Loughborough University in the U.K.
- Mr. Abhishek Kumar, has been awarded with the prestigious Prime Minister's Research Fellowship (PMRF).
- Adhitya Bandari, has been awarded with Best Poster Award in the 2nd Institute Research Day held on 14th March, 2023.



- Mr. Shreyes Gupta, has been selected for Exchange Program in Lucerne University for Applied Science and Arts (HSLU)
- Ms. Avantika Verma, has been selected for Exchange Program in Lucerne University for Applied Science and Arts (HSLU)
- Ms. Janani RG, has been selected for Exchange Program in Lucerne University for Applied Science and Arts (HSLU)
- Ms. Shraddha Pandit, has been selected for SPARC Project Funded International Lab Fellowship in University of Tokya, Japan
- Mr. Sagar Sinha, has been selected for SPARC Project Funded International Lab Fellowship in University of Tokya, Japan

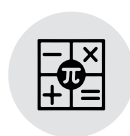
### Other Highlights

- Mr. Viany Gautam, has won Anoop Singh Khurana Squash championship with a cash Prize of Rs. 20000/-

### Publication

	Book	Book Chapters	Paper in conferences	Paper in Journal	IP Filed/Granted
Total	2	6	29	20	-

Several webinars/symposiums/workshops/conferences were organized, including; a workshop on Primary/Secondary Education Intervention was organized under SAADRI-YP CoEDMM Unnat Bharat Abhiyan IIT Roorkee and SMUS INDIA CONFERENCE 2023 as part of the ongoing Sponsored Research Project titled Global Centre for Spatial Methods of Urban Sustainability. In collaboration with Technical University of Berlin. The Conference was attended by participants from more than 30 countries.



## Department of Applied Mathematics and Scientific Computing

The Department of Applied Mathematics and Scientific Computing (D-AMSC) was established in the year 2022 with the aim to groom the students in computational methods and make them ready to take on.

Total no. of Faculty	04
No. of PMRF	01
No. of INSPIRE Fellow	01

### Academic Programmes

Programmes Offered	Students On- Roll	Degrees Awarded
Ph. D	25	09

### R & D Activities

The core research areas of the faculty at D-AMSC are numerical differential equations, numerical optimization, operations research, evolutionary algorithms. data science, and machine learning and their applications in various domains like image processing and computer vision and supply chain management, multi criteria decision making etc.

Project Status	Sponsored	Amount (Rs. In lacs)
New	01	13.40
Ongoing	03	118.00
Completed	-	-

## Students' Achievements

- Ms. Arti Tiwari, has received Commonwealth Scholarship in Liverpool Hope University
- Ms. Princy Verma, has received INSPIRE Fellowship

## Other Highlights

- There are many national and International collaborations have been nourished, to name a few are University of Ostrava, Czech Republic, Liverpool Hope University UK, IRDE – DRDO Lab, Dehradun and UFLEX, NOIDA. One student enrolled in Joint PhD degree program with AIT Thailand.
- 03 technologies have been commercialized to Industries.
- A water-soluble acrylic–styrene co-resin formulation, its method of synthesis and repulpability properties
- A water-based ink formulation for magenta pigment application for elongated engraved cells on the rotogravure printing cylinder
- A water-based ink formulation for rotogravure printing ink medium and pigmented ink

## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	Patents Filed/Granted
Total	-	10	05	17	02

Several webinars/symposiums/workshops/conferences were organized, including; Risk Modelling and optimization using simulation: a case of milk supplying chain, How AI-enabled Technology is Potentially Improving Civil Justice System and Learn Korean: An easy way to get started and **One-day workshop on Decision Making through Applied Maths and Scientific Computing**



## Department of Bioscience & Bioengineering

A Centre of Biosciences was started in 1980 and upgraded to a full-fledged academic Department of Biosciences and Biotechnology in 1986. It was renamed as the Department of Biotechnology in the year 2002. The department has teaching and research programmes which encompass various basic and applied aspects of modern biotechnology. A B.Tech.(Biotechnology) course started in 2005. In January 2021, the department was renamed to Department of Biosciences and Bioengineering.

Total no. of Faculty	30
Adjunct/ Visiting Teaching Faculty	02
No. of Post Doc. Fellows	07
No. of PMRF	02

## Academic Programmes

The department offers Bachelor's and Master's degree courses

- B. Tech. (Biosciences and Bioengineering)
- M. Tech. (Bioprocess Engineering)
- M. Sc. (Biotechnology)

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	147	29
M. Tech	11	09
M.Sc.	47	31
Ph. D	187	32

## R & D Activities

The department focuses on a diverse range of research topics, addressing critical challenges in animal health, cancer biology, DNA-protein interactions, plant molecular biology, biotechnology, bioenergy, infectious diseases, nanobiotechnology, structural biology, immunology, bioremediation, computational biology, medical informatics and many other fascinating areas at the forefront of scientific exploration. A brief description of the research projects and consultancies are as follow:

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	07	574.74	NIL	NIL
Ongoing	18	2368.55	NIL	NIL
Completed	14	2197.02	03	80.52

## Major Facilities

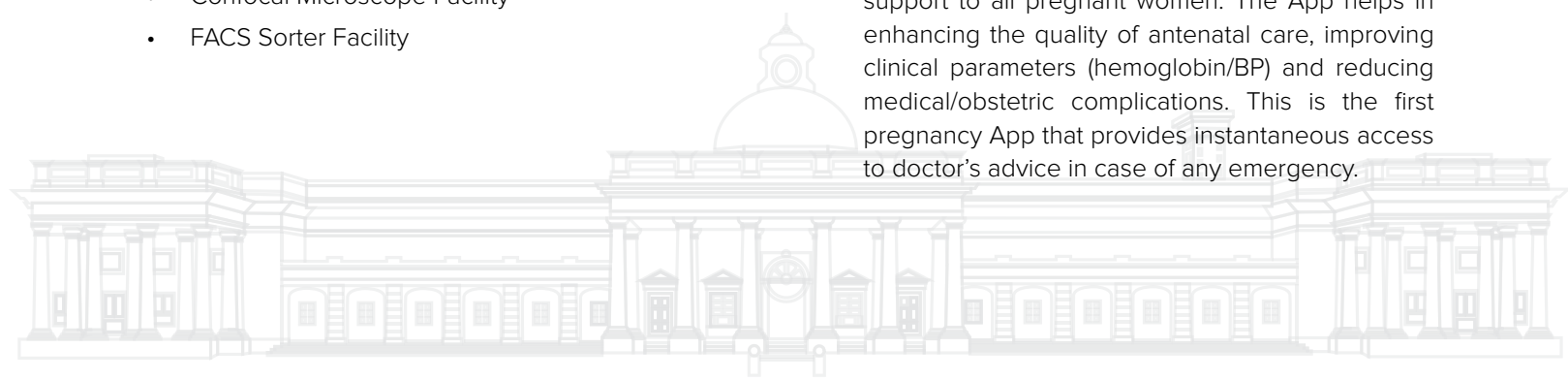
- Translation and Structural Bioinformatics Facility
- Ashok Soota Molecular Medicine Facility
- BSL 3 Virus Containment Facility
- MALDI-TOF Facility
- LC-MS Facility
- Surface Plasma Resonance Facility
- Confocal Microscope Facility
- FACS Sorter Facility

## Students' Achievements

- In the academic year 2022-2023, team iGEM IIT Roorkee diligently worked to participate in various events. Their biggest achievement was winning the Gold Medal at the iGEM Grand Jamboree held in Paris-Expo Porte de Versailles, Paris for their project CRISPRLY. The team worked day and night on building a Point of Care diagnostic kit for the early detection of Cervical Cancer. The final judging was done based on an intensive judging round where they were assessed on a multidisciplinary level, including Machine Learning and Microfluidics.
- The team also presented their project at the All India iGEMMeet(AIIM) held in IISc Bangalore where they received constructive feedback about their work and could make suitable improvements for their final presentation in Paris. The team won the Best Education Award at the AIIM on the basis of their project and poster presentation.
- iGEM IIT Roorkee also received a 2000 USD grant from Promega Corporation, which aided them in performing the wetlab experiments for the project.
- Lastly, CRISPRLY was also presented in the Engineer's Conclave of the Inter IIT Tech Meet 2023, and the team won the Best Paper award for the same.

## Faculty Entrepreneurship

- DIPAK Jantech Pvt Ltd is a start-up, which uses Virtual Cow Infrared Imaging Analytical System (CIRAN) for the early detection of subclinical mastitis, the most economically devastating disease in cattle. CIRAN platform uses a multidisciplinary approach and expertise from Veterinary Science, Infrared imaging, and Artificial Intelligence to develop a heat signature pattern of the cow to early diagnose subclinical mastitis for timely therapeutic intervention.
- SwasthGarbh (Healthy Pregnancy) mobile App for providing antenatal care and real-time medical support to all pregnant women. The App helps in enhancing the quality of antenatal care, improving clinical parameters (hemoglobin/BP) and reducing medical/obstetric complications. This is the first pregnancy App that provides instantaneous access to doctor's advice in case of any emergency.



- DWAAR Pvt. Ltd. is a start-up to initiate the development of inexpensive yet comprehensive detection tools that will specifically identify the hallmark proteins and genes for antibiotic resistance and will help to both diagnose and monitor the incidence of AMR. Rapid detection of AMR can save a lot of lives when timing is crucial to determine the therapeutic path.

### Publication

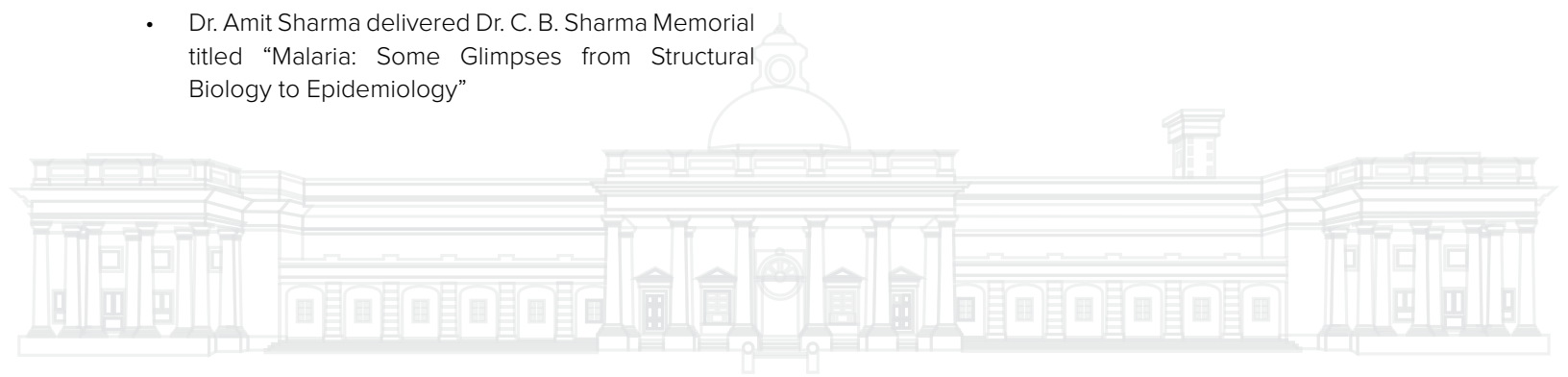
	Book	Book Chapters	Paper in Conferences	Paper in Journal	IP Filed/Granted
Total	02	07	42	157	01

### Notable Activity in the Department:

Ashok Soota has made generous donation to IIT Roorkee in developing a molecular medicine facility. The institute has decided to name this molecular medicine facility as **‘Ashok Soota Molecular Medicine Facility’**. The major goal of this center is to utilize the expertise of faculties from various disciplines towards the development of newer technologies related to the healthcare system and also to develop manpower through training and research. On the research front, major emphasis is on two thrust areas: drug discovery and development and diagnostic. The aim of this Ashok Soota Molecular Medicine Facility (ASMMF) to bring together researchers from a range of disciplines who have a common focus on developing precision medicine and diagnostic solutions to combat diseases in areas relating to diabetes, cardiovascular disease, cancer, infectious disease and neurological disease.

The Department of Biosciences and Bioengineering has organised various seminars. A few are mentioned below:

- Prof. Rakesh Kumar Mishra delivered Dr. GN Ramachandran Memorial Lecture on Nuclear architecture and the structural basis of the cellular memory
- Dr. Amit Sharma delivered Dr. C. B. Sharma Memorial titled “Malaria: Some Glimpses from Structural Biology to Epidemiology”





## Department of Civil Engineering

The Department of Civil Engineering at the Indian Institute of Technology, Roorkee is the oldest and the largest in the country. The department has produced a number of renowned engineers who have made noteworthy contributions to the planning and implementation of civil engineering projects both in India and overseas.

Total no. of Faculty	56
Adjunct/ Visiting –Teaching Faculty	02
No. of Post Doc. Fellows	02
No. of PMRF	14

### Academic Programmes

The Department offers a four-year course leading to the Bachelor's Degree in Civil Engineering and two year courses leading to Master's degree in six major specializations of civil engineering (viz., Environmental Engineering, Geomatics Engineering, Geotechnical Engineering, Hydraulics Engineering, Structural Engineering and Transportation Engineering).

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	687	144
M. Tech	158	71
Ph. D	302	31

### R & D Activities

The Department has a strong focus in the research areas of Structural Engineering, Geotechnical Engineering, Transportation Systems Engineering, Remote Sensing, and Construction Technology and Management. With top-notch laboratories, the Department actively engages in both basic and applied research. Additionally, it delivers high-quality technical advisory assistance and consulting services.

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	16	455.91	-	-
Ongoing	29	1689.43	272	1052.54
Completed	16	716.16	579	4342.19

### Major Facilities

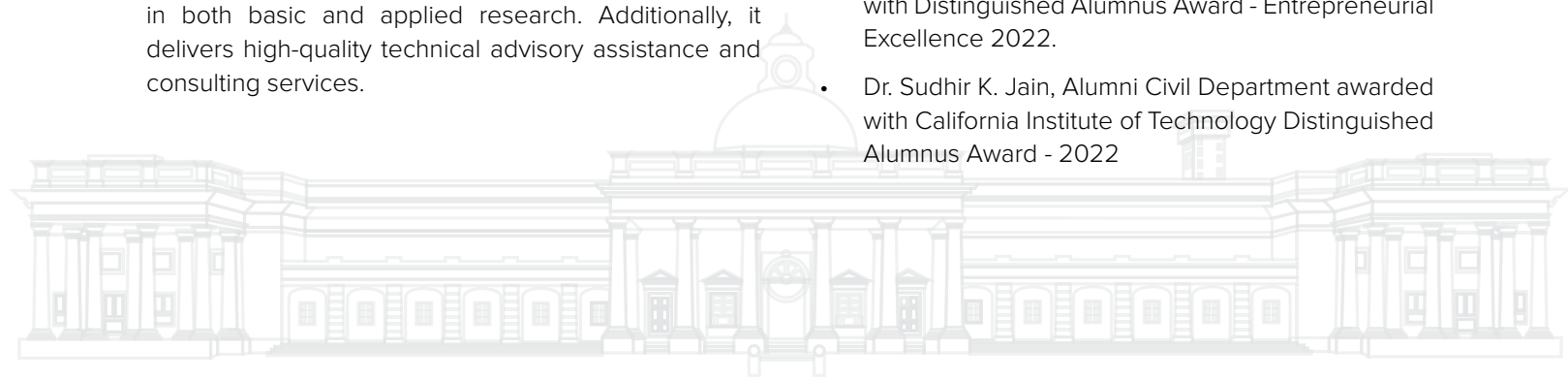
- Rock Triaxial with accessories

### Students' Achievements

- Mr. Saurav Kumar, secured the AIR 1 in Gate 2023 Examination in Geomatics Engineering.
- Mr. Vijaya Kumar Thota, Selected for the CoPREPARE Master Exchange Scholarship program.
- Ms. Pritipadmaja, Selected for an IIT Tirupati Navavishkar (NAV) I-Hub Foundation (ITTNIIF) - Google Earth Engine (NAV-i-GEE) Research Program.
- Ms. Eshta Ranyal, awarded with "Shastri Best Research Paper Award (SBRPA 2022-23)"
- Mr. Anurag Tomar, awarded with Best Pitch Award" in the SPARC-funded INDO-US two-day workshop on "CIRCULAR SOLUTIONS TO SANITATION-MAKING PROFIT FROM TOILETS ".
- Mr. Prateek Tripathi, selected for the "2022 Exploration Science Summer Intern Program" hosted by the Lunar and Planetary Institute (LPI), Houston, and NASA.
- Mr. S.K.P. Kushwaha: - Selected as ISPRS SC Board of Directors for the Newsletter Editor-in-Chief Position.
- Mr. Gowtham Balasundaram, awarded with second Prize in the 7th India Water Week Conclave, organized by the Department of Jal Shakti, Government of India.

### Other Highlights

- Prof. Satish Chandra, awarded with S. R. Mehra Memorial Award 2022.
- Mr. Rajat Shikhar, Alumni Civil Department awarded with Distinguished Alumnus Award - Entrepreneurial Excellence 2022.
- Dr. Sudhir K. Jain, Alumni Civil Department awarded with California Institute of Technology Distinguished Alumnus Award - 2022



- Mr. Vishal Mishra, selected for Georgios Agricola Scholarship from VSB – Technical University of Ostrava (8000 CZK per month) for a research stay at VSB – Technical University of Ostrava, also he awarded by ISPRS Foundation (TIF) a cash travel grant of USD 900 and a fee waiver of 350 Euros for attending the prestigious ISPRS Congress in Nice, France.
- Mr. Tushar Bhardwaj and Mr. Akash Kumar Pandey, secured first rank in AABTonics National Level Geospatial Competition organized by leading GIS multinational company and received Rs. 50000/- as prize money and an invitation to pitch in front of investors for their start-up.

### Faculty Entrepreneurship

Bhoomicam Pvt. Ltd. Startup received award at India’s biggest Geospatial platform from former ISRO chairman Dr. A.S. Kiran Kumar. The idea was selected as Bronze award winner for ICON-ISRS contest 2022 held at HICC Hyderabad during GeoSmart India Conference. His start-up has won another competition and secured first rank in AABTonics National Level Geospatial Competition organized by leading GIS multinational company AABSys IT, they received Rs.50000/- as prize money and invitation to pitch in front of investors

### Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	Patents Filed/Granted
Total	01	06	54	173	03

Several webinars/symposiums/workshops/conferences were organized, including InSAR Karyashala 2022, Transportation Infrastructure projects conception to execution (TIPCE), Sustainable building materials, Applications of Geosynthetics for Dam safety and rehabilitation, Geomatics Survey Camp, Application of Geographics Information, Application of remote sensing and GIS in environmental mapping, monitoring and management and Civil Conclave 2022. A few are also mentioned below:-

- Workshop On Principles and Applications of Satellite Radar Remote Sensing (InSAR Karyasala 2022)
- Technical Seminar on Bitumen

- 2nd International Conference on Transportation Infrastructure Projects Conception to Execution (TIPCE - 2022)
- 9th International Symposium On Hydraulics Structures (ISHS - 2022)
- Seven Days Training Program on Total Quality Management Including Quality Control Tests
- Specialist Lectures and Practical Session On “Application Of Geosynthetics For Dam Safety And Rehabilitation
- Geomatics Survey Camp
- Civil Conclave 2022
- Hands-on Training on Advance Surveying Instruments “Karyashala”
- Training on Remote Sensing and GIS Technology for Environmental Monitoring, Planning and Management







## Department of Chemical Engineering

During last year, the Department of Chemical Engineering made significant growth in research and publication. The Global and National Ranking of the Department is 151-200 and 6th, respectively, as per QS world university ranking 2023. One new faculty member, Prof. Ishan Bajaj joined the department in the month of April 2022.

Total no. of Faculty	24
Adjunct/ Visiting –Teaching Faculty	05
No. of Post Doc. Fellows	03
No. of PMRF	05

### Academic Programmes

A Master's course in Equipment and Plant Design was initiated in 1970. Later on, two new Master's courses namely Industrial Processes were inducted. Subsequently, the specialisation of Equipment and Plant Design was redesigned, updated and rechristened as Computer Aided Process Plant Design. The Department was running three post-graduate programmes leading to M.Tech. (Chem.) degree with specialization in Computer Aided Process Plant Design, Industrial Pollution Abatement and Industrial Safety & Hazards Management. These 3 specializations have been merged into a single M.tech. programme in 2018. A five-year integrated programme on Hydrocarbon Engineering offering dual degree of B.Tech. (Chem. Engg.) and M.Tech. (Hydrocarbon Engineering) has been started from the session 2003-04.

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	117	126
M. Tech	16	15
Ph. D	25	12

### R & D Activities

The department pursues research work in the broad areas of chemical engineering such as liquid & solid waste management, green catalysis, sustainable energy, energy storage, process design and intensification, process modeling & simulation, drug delivery, transport & separation processes, process safety, CO<sub>2</sub> capture & utilization, and biochemical and bioprocess engineering.

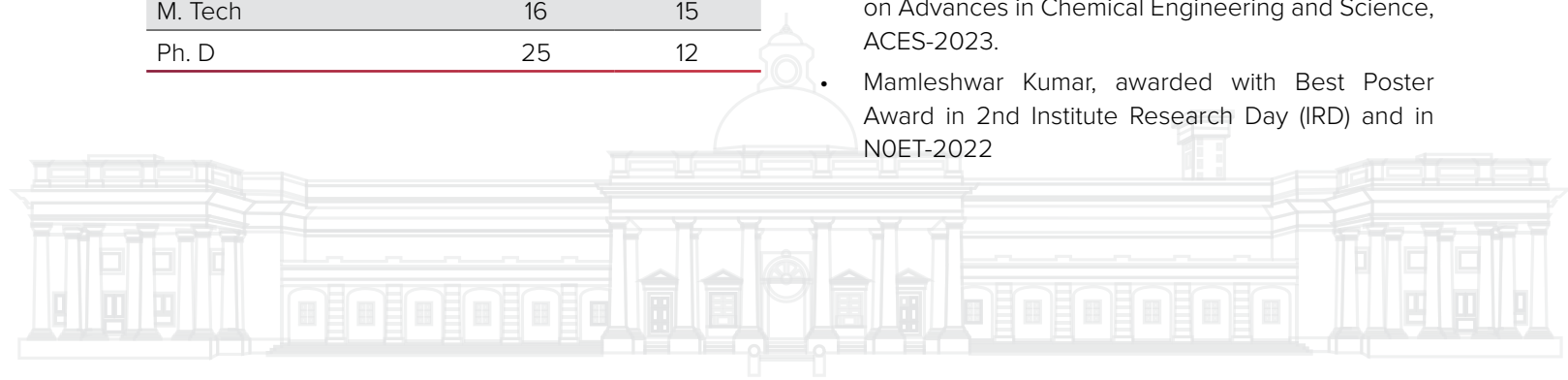
Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	09	303.01	3	53.75
Ongoing	10	2084.55	1	5.78
Completed	09	260.25	1	39.49

### Major Facilities

- X-ray diffraction (XRD) unit
- Particle image velocimetry (PIV) unit

### Students' Achievements

- Naitik Jain, awarded with Donald-Othmer award from the global AIChE Student Chapter Committee.
- Adarsh Babu, has received the ANSYS Fellowship
- Dinesh Patel & Abhishek Dharmesh, were awarded with cash prize of Rs 25000/- in TataMaterial NXT 4.0 competition
- Ishan Kumar, awarded with Aastha Mukul Dixit prize for best Engineering Project
- Uttam Gupta, Shubham Khange & Vinod Kumar were awarded with cash prize of Rs 10000/- in Synergia CTRANS Industry-Academia event organised by CTRANS IIT ROORKEE Idea competition in, Prize money Rs 10000/-.
- Krunalsinh Y. Chauhan, awarded with Best oral presentation in 4th National Conference on Advances in Chemical Engineering and Science, ACES-2023. Akanksha Singh Rajput, awarded with Best oral presentation in 4th National Conference on Advances in Chemical Engineering and Science, ACES-2023.
- Mamleshwar Kumar, awarded with Best Poster Award in 2nd Institute Research Day (IRD) and in NOET-2022



## Faculty Entrepreneurship

- Prayas Greentech Pvt. Ltd. is a start-up, in the area of waste recycling. Presently it is focusing on the development of various products including Army trackway from waste plastics and water treatment technologies. It has received initiation grant under Nidhi Prayas Scheme for the development of wall tiles from waste plastics. It has also been registered under Startup India.
- NSMR Private Limited is a start-up based on the Technology that was transferred from Prof. Siva Mohan Reddy, IIT Roorkee. Raised a funding of Rs. 55 Lakhs for the demonstration of the technology at the pilot scale. Other areas that were in discussion for funding and technology transfer to the industry: Liquid/ gaseous fuels generation from waste (A waste to wealth approach)

## Notable Activities in the Department

40"x30"



## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	Patents Filed/Granted
Total	01	06	43	99	8/10

Several webinars/symposiums/workshops/conferences were organized, including 175 Year Celebration: International Conference Chemical Engineering: Enabling Transition Towards Sustainable Future.



Signing of MoU between IIT Roorkee and CIPET





## Department of Chemistry

The Department of Chemistry was established in 1960. It is, since then, engaged in providing the highest level of academic education in the country. The main focus of the teaching and research in the department is centered on interdisciplinary themes which have gained worldwide attention and appreciation.

Total no. of Faculty	27
No. of Post Doc. Fellows	04
No. of PMRF	07

### Academic Programmes

The department offers four programmes: 2-year M.Sc. (admission through JAM); 5-year integrated M.Sc. (admission through JEE); 5-year BS-MS (admission through JEE) and PhD degree. Two-year M.Sc. program also involves a compulsory research project for a semester, whereas the integrated MSc program involves a research project for one full year as partial fulfillment for the award of the degree.

Programmes Offered	Students On-Roll	Degrees Awarded
BS-MS	59	NA
M.Sc.	84	42
Integrated M.Sc.	27	10
Ph. D	173	17

### R & D Activities

The department currently has faculty with expertise in frontier areas of research. Active research in the areas of asymmetric synthesis, transition metal-based catalysis, visible light photoredox catalysis, electrochemistry, mechanochemistry, organic functional materials, polymeric membranes, nanobio interfacial chemistry, nanomaterials, organotin compounds, bioinorganic chemistry, high energy density materials, ultrafast spectroscopy, nonlinear spectroscopy, quantum dots as sensors, energy harvesting, systems chemistry, active matter, artificial cells, computational catalysis, modelling

and simulations, and other areas of theoretical chemistry are being pursued.

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	04	184.36	3	53.75
Ongoing	20	974.53	1	5.78
Completed	07	115.8	1	39.49

### Major Facilities

- 500 MHz NMR: This facility was established in February 2022 and has functioned very extensively throughout the past year with over 15,000 samples data recorded including both solid and liquid samples. The facility has also served other departments such as Chemical Engineering, Biosciences and Bioengineering, and Paper and Polymer Technology (Saharanpur Campus).
- Single Crystal XRD: A state-of-the-art single crystal X-ray diffractometer laboratory (SCXRD Lab) sponsored by DST-FIST, New Delhi, has been established to enable determination of the three-dimensional structure of organic, inorganic, and organometallic compounds. Single-crystal X-ray diffraction is one of the methods of choice available for determining the absolute configuration of chiral molecules including drugs and peptides. We have collected the data and solved the structures of about 200 samples.

### Students' Achievements

- Ms. Isha, has been selected as Trainee Scientific Officer C at BARC.
- Mr. Anuj Rawat, has been awarded with 'Best Presentation Award' in the international conference on "Chemical Engineering: Enabling Transition Towards Sustainable Future ChemTSF 2022".

### Notable Activities in the Department

- A new synthetic experimental laboratory has been developed at the Department of Chemistry, IIT Roorkee named **POITION LAB** which aims to explore a Journey from POISON to POTION, to convert wastes and pollutants to value-added products through the approach of synthesis-driven catalysis focused on sustainable research themes.

- New computational laboratory has been developed in the Department of Chemistry.
- Ultrafast laboratory and sum frequency generation laboratory has been established.

The Chemistry Department has organized various training programmes, workshop & seminars including ChemDay 2022, Computational Catalysis Lecture series, Prof. W. U. Malik Memorial Lecture, Contemporary Facets in organic synthesis (CFOS) 2022, Workshop on Solar Photovoltaics and Emergent Materials for Energy and Environment (EMEE-2023). The detailed list is as follows:

- National Workshop on Solar Photovoltaics (WSPV-2022)
- Computational Catalysis Lecture series (Via Webex)
- Professor W. U. Malik Memorial Lecture
- ChemDay-2022 (Annual Symposium of Department)
- 2nd National Conference on Contemporary Facets in Organic Synthesis (CFOS-2022)
- National Conference on Emergent Materials for Energy and Environment (EMEE-2023)

## Publication

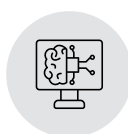
	Book Chapters	Paper in Conferences	Paper in Journal
Total	03	36	88



X-ray Diffractometer Laboratory (SCXRD Lab)



Computational Laboratory



## Department of Computer Science and Engineering

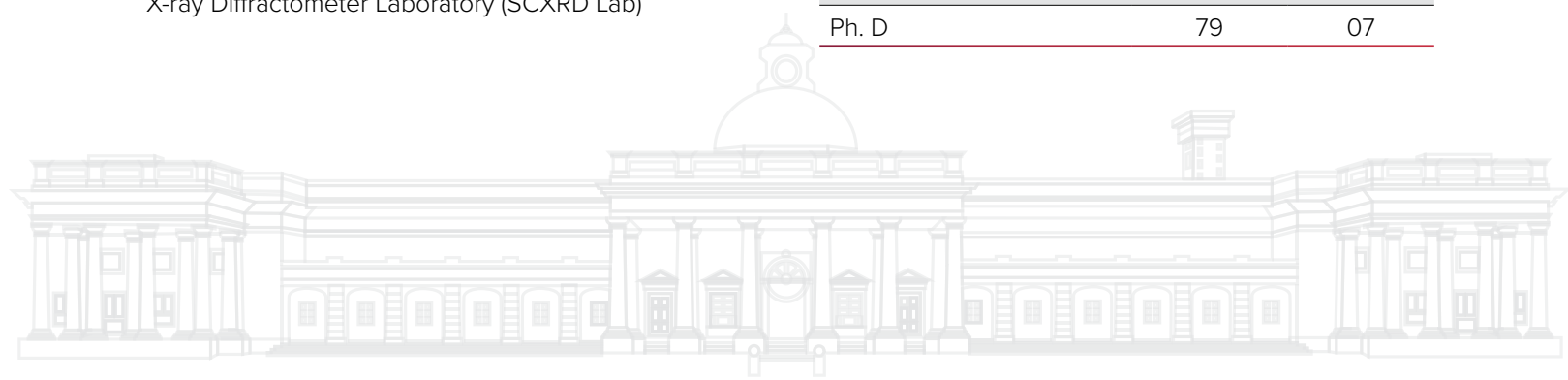
The department of Computer Science and Engineering continuously endeavors to create and sustain an academic environment conducive to the highest level of research and teaching. The goal is to develop human resources with sound knowledge of theoretical, systems, and application aspects of Computer Science & Engineering.

Total no. of Faculty	18
Adjunct/ Visiting –Teaching Faculty	01
No. of Post Doc. Fellows	01
No. of PMRF	03

## Academic Programmes

The department has offers degree in B. Tech., M. Tech. and Ph.D. programmes.

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	118	102
M. Tech	31	34
Ph. D	79	07



## R & D Activities

The department currently has a faculty working in Computer Networks and Cyber Security, Computer Architecture, Algorithms, Artificial Intelligence and Machine Learning, Data Analytics and Natural Language Processing, Cloud Computing and Internet of Things (IoT), Vision and Image Processing, and Theory and Software Engineering

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	6	11875	2	77
Ongoing	19	909.24	2	102.44
Completed	3	168	4	149.9

## Student Achievement

- Rahul Dugar, Piyush Sethia, Harsh Bhartiya of Team "Area 151", achieved 60th rank in the 45th World Finals of International Collegiate Programming Contest held in Dhaka, Bangladesh.

## Notable Activities in the Department

- Intelligent Systems lab was inaugurated with a sitting capacity of 14 research scholars. 2 High-end servers were installed (48C/96T, 128 GB Memory, 1.5GB Cache, 1 Nvidia A5000 GPU and 64C/128T, 256 GB Memory, 4 Nvidia A5000 GPUs).
- Prof. Sandeep Kumar, MoU Signed between IIT Roorkee and Oracle Corporation USA for joint ownership on work done on the token based access mechanism to web services.

## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	Patents Filed/ Granted
Total	2	2	34	49	2

Several webinars/symposiums/workshops/conferences were organized, including Advanced Certification Program in Cyber Security, Overview of AMD's FPGA Solutions on AI/ML, Video Transcoding, Video Analysis and HPC and Devbhoomi Cyber hackathon



## Department of Design

The vision of the Department of Design is to evolve as a unique entity focusing on design and innovation culture based on human-environment engagement in collaborative partnerships with society, industry, and other stakeholders.

Total no. of Faculty	15 {02 (Full Time) + 13 (Joint Faculty)}
No. of Post Doc. Fellows	1
No. of PMRF	1

## Academic Activities

The Department of Design to offer two programs focused on the broad theme of innovation and product design. The Master of Design (Industrial Design) program will focus on the concepts and principles leading to a successful product design. It aims to provide an engaging environment to foster creativity and skills through an interdisciplinary process of teaching and training. The teaching-learning pedagogy is designed to train and develop professionals who are able to challenge the existing designs, collaborate and create functional, usable, user-friendly and sustainable products. The Masters in Innovation Management program aims to provide students with an exposure in-products and process innovation, services innovation, market and marketing innovation and organizational innovation.

Programmes Offered	Students On-Roll	Degrees Awarded
M. Des. (Masters of Design)	33	NA
MIM (Master of Innovation Management)	9	NA
Ph.D.	18	NA

## R & D Activities

Design education, especially focused on 'Industrial Design' and 'Innovation Management' has a strong potential to accelerate the process of product conceptualization, design and prototyping

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	1	24,73,800/-	1	9,44,000/-

## Student Achievement

- Mr. Sreehari S., has been awarded with 1st prize on the Designathon 2022 organized by RuPay.
- Mr. Iram Khan and Ms. Shravani Kakde has been awarded with first & second Prize in GATI Logo Design organised by IIT Roorkee & GATI.
- Mr. Himanshu Dhiman and Ms. Shravani Kakde has been awarded with 1st prize in Rebranded - Designathon organized by IEEE, Manipal University Jaipur.
- Team of students; Mr. Himanshu Dhiman, Mr. Pratyay Banerjee, Ms. Shravani Kakde & Ms. Somya Burman has been awarded with 1st prize in Design Case Challenge organized in E-Summit IIT Roorkee with Divami Design Labs.
- Team of students; Mr. Himanshu Dhiman, Ms. Shravani Kakde & Ms. Somya Burman has been awarded with 1st prize in Rebranded – Designathon organised by IIIT Nagpur.
- Team of students; Mr. Himanshu Dhiman, Mr. Iram Khan, Ms. Revti Naiker, Ms. Sakshi Singh, & Ms. Shravani Kakde has been awarded with 1st prize in Best Pitch in Fresher’s League organised by IIT Palakkad (TECHIN).
- Mr. Abhishek Srivastava, and Ms. Somya Burman, has been awarded with first & third Prize in Logo Design organised by Diversity and Inclusion Committee (DInC), IIT Roorkee.
- Team of students; Mr. Himanshu Dhiman, Mr. Neeraj Choudhary, Ms. Sakshi Singh & Ms. Shravani Kakde Burman has been awarded with 2nd prize in EACT-A-THON Case Study Competition organised by Enactus Club, IIT Roorkee.
- Mr. Neeraj Choudhary and Ms. Somya Burman, has been awarded with second & third Prize in Poster Design Competition organized by GATI, IIT Roorkee.
- Team of students; Mr. Himanshu Dhiman, Ms. Shravani Kakde, Ms. Somya Burman Burman has been awarded with 2nd prize in Design-athon organised by GRID Design Studio.
- Mr. Roshan Pendor, has been awarded with 2nd

prize in a Poster presentation by SynergIA (Industry-Academia Event) organized by the Center for Transportation System, IIT Roorkee.

- Ms. Asawa Aishwarya Santosh, has been awarded with 3rd prize in Zuno Fellowship Program organized by Zuno by foundit.
- Ms. Sakshi Singh, has been awarded with 3rd prize in ARTTD’INOX 3D Challenge.

## Other Highlights

- A team of students received 1st Prize & a cash prize of ₹7,175 in LOGO Design Competition organised by Diversity and Inclusion Committee (DInC), IIT Roorkee.
- A team of students received 3rd Prize & a cash prize of ₹40,000 in National Level Competition Arttd’inox 3D Challenge by Jindal steel 2022.

## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	IP Filed / Granted
Total	NA	1	15	8	1

Several webinars/symposiums/workshops/conferences were organized, including MSME Innovative (Design) Scheme” Industry-Academia Interference, Frugal Digital Technology for Healthcare Delivery, Scientific writing for design research, Institutional voids and innovation in emerging economies: How do companies react, Innovative Design: Ideation to Realization and Innovative Design: Ideation to Realization.

## MSME Awareness Programme (26th February & 22nd March 2023)

Awareness Programme on ‘MSME Innovative (Design) Scheme’: Industry-Academia Interface in collaboration with Design Innovation Center, IIT Roorkee, SMAU, Haridwar and DFO, MSME Haldwani. This comes after an MoU between the Ministry of MSME, GOI and IIT Roorkee signed last year. The ministry has nominated IIT Roorkee as Implementing Agency for the promotion of the MSME Innovative (Design) Scheme. The core objective of this scheme is to bring the Indian manufacturing sector and Design expertise/ Design fraternity onto a common platform. It aims to provide expert advice and cost-

effective solution for real-time design problems, new product development, continuous improvement, and value addition in existing/new products. This specialist advice will be provided by experienced designers for new product development as well as enhancing existing product portfolio.



MSME Awareness Programme



Mr. Alok Sanwal, COO of INEXT Lecture on How to develop a new newspaper as a new product.



## Department of Earthquake Engineering

The department of Earthquake Engineering is an interdisciplinary department which was established with the aim of training manpower in the specialized field of Earthquake Engineering to deal with the problems posed by strong earthquakes to engineering infrastructure.

Total no. of Faculty	16
No. of Post Doc. Fellows	01
No. of PMRF	04

### Academic Activities

The Department of Earthquake Engineering offers postgraduate M.Tech (admission through GATE/ sponsorships) and Ph.D (through selections/ sponsorships) programs in following specializations:

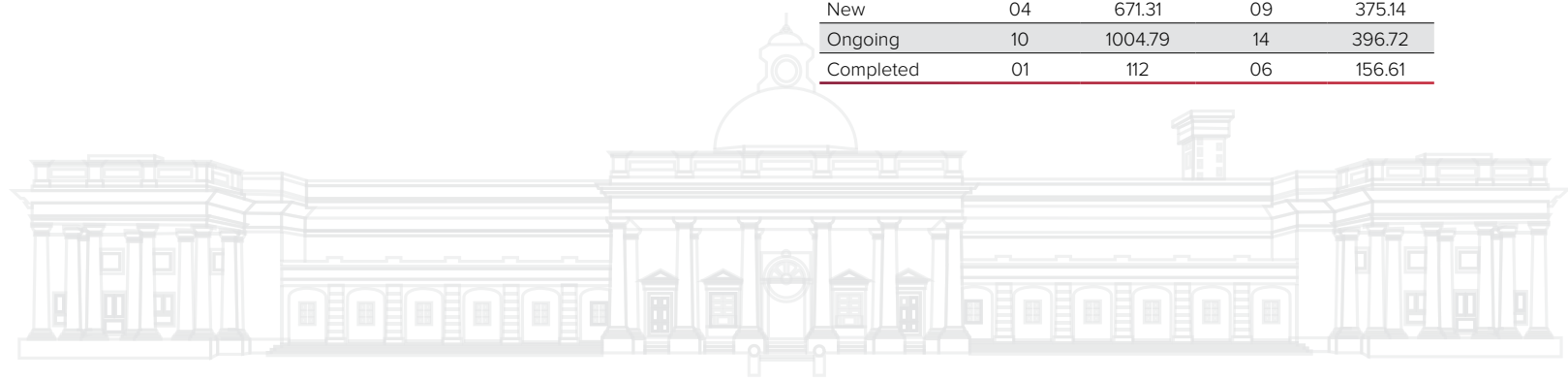
- Soil Dynamics
- Structural Dynamics
- Seismic Vulnerability and Risk Assessment

Programmes Offered	Students On-Roll	Degrees Awarded
M. Tech	30	25
Ph. D	12	06

### R & D Activities

The Department of Earthquake Engineering is actively involved in carrying out sponsored research and consultancy projects through self-guiding state-of-art test facilities having capability to convert research on paper into technology for field implementation.

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	04	671.31	09	375.14
Ongoing	10	1004.79	14	396.72
Completed	01	112	06	156.61



## Major Facilities

- Shake Table Facility
- Pseudo-dynamic test facility
- Masonry lab,
- Dynamic triaxial test system,
- Ground penetration radar,
- MASW geophysical characterization system

## Student Achievement

- Mr. Prathmesh Kulkarni & Mr. Anubhav Choudhary, M.Tech. (Structural Dynamics), secured second rank in the national design competition organized by INSDAG.

## Faculty Entrepreneurship Details

- SHRI is a start-up basically address issues related to seismic hazard and risk assessment.

## Publication

	Book Chapters	Paper in conferences	Paper in Journal	IP filed/granted
Total	06	56	34	2 patents granted

Several webinars/ symposiums/ workshops/ conferences were organized, including 17th Symposium on Earthquake Engineering”, 1st Webinar Series on Geotechnical Earthquake Engineering organized by IIT Roorkee and ISET.



## Department of Electrical Engineering

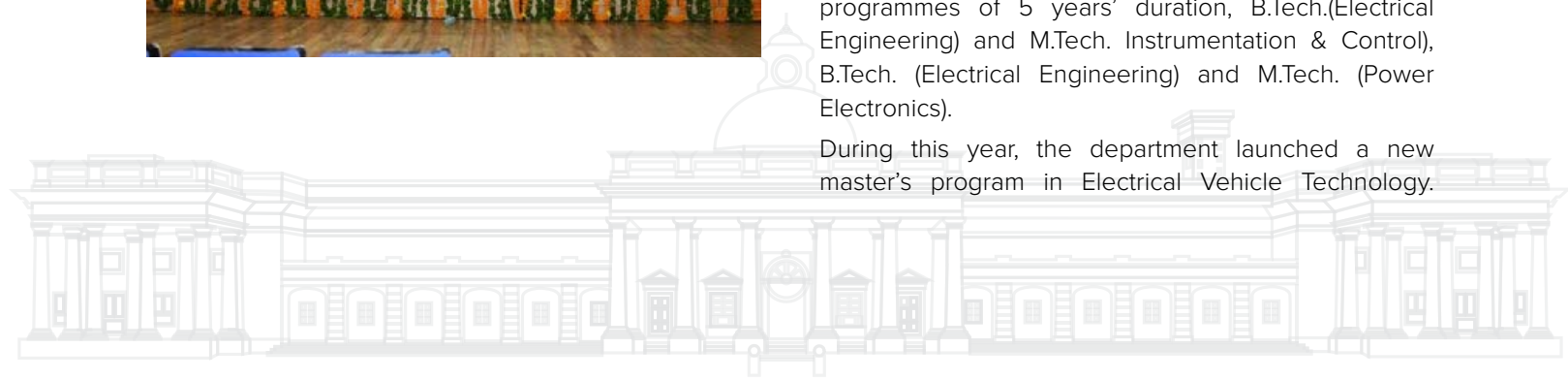
The Department of Electrical Engineering of the Thomson College in the year 1897, and was one of the earliest such specializations in the world when the discipline itself was in its infancy.

Total no. of Faculty	37
No. of Post Doc. Fellows	01
No. of PMRF	06

## Academic Activities

The department offers a four-year undergraduate programme (B.Tech.) in Electrical Engineering and runs four postgraduate (M.Tech.) programmes in Electrical Drives & Power Electronics, Power System Engineering, Systems & Control, Instrumentation & Signal processing and Electric Vehicle Technology. In addition to this, the department offers two Integrated Dual Degree programmes of 5 years’ duration, B.Tech.(Electrical Engineering) and M.Tech. Instrumentation & Control), B.Tech. (Electrical Engineering) and M.Tech. (Power Electronics).

During this year, the department launched a new master’s program in Electrical Vehicle Technology.





The sanctioned strength for this program is 15. In spite of last minute approvals etc., the program received encouraging response and 9 students joined it.

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	671	134
M. Sc	90	50
Ph. D	191	22

## R & D Activities

The Department has specialization in research areas such as: ANN and fuzzy logic applications in robotics and control, Distribution system planning and operation, Economic dispatch and planning, Flexible AC transmission system, Optimal system operation, Power system protection, monitoring, control and simulation, Power quality, Relay coordination, Power system automation, Artificial intelligence applications and Voltage stability of power system, Telemedicine, ECG signal analysis and classification, Digital signal and image processing, Intelligent instrumentation, Industrial instrumentation, Medical system modeling, Instrumentation and bio-informatics, Process instrumentation and control, System analysis and optimization, Data base management, FPGA based control, System automation and monitoring, Reliability engineering, Robotics, System modeling, Computer controlled system including process control, Computer controlled multi-quadrant solid-state converters, Condition monitoring of electrical machines/drives, High performance computer controlled DC and AC drives, Modeling and simulation of electric machines.

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	10	250.27	-	-
Ongoing	21	1990.1	07	20.75
Completed	06	228.58	02	7.38

## Major Facilities

- Six rack Real Time Digital Simulator (RTDS)

## Student Achievement

- Ms. Pooja Chauhan, awarded with Global Distinguished Young Scientists Award at the 2023 IEEE IAS Global Conference on Renewable Energy

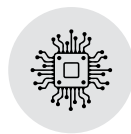
and Hydrogen Technologies organized by Maldives National University, Male City, Maldives.

- Mr. Soju J. Alexander, awarded with Diamond Jubilee Best Research Paper Award for the year 2022, by CSIR-Central Building Research Institute.
- Mr. Saurabh Sharma, selected for Commonwealth Split-site Scholarship, tenable at Loughborough University, Leicestershire, United Kingdom.
- Mr. MohdAzeem selected for Research Internship position under NTU Singapore India Connect Research Internship program

## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	Patents Filed/Granted
Total	01	-	76	64	01

Several webinars/ symposiums/ workshops/ conferences were organized, including 17th Symposium on Earthquake Engineering”, 1st Webinar Series on Geotechnical Earthquake Engineering organized by IIT Roorkee and ISET.



## Department of Electronics and Communication Engineering

The Department was established in 1964 and has a long tradition of excellence in educating, mentoring, and inspiring future technology leaders and researchers in the area of Electronics and Communication Engineering and conducting research that is in consonance with our societal needs and our country's aspirations. Our up-to-date and progressive Electronics and Communication undergraduate and post-graduate programs as well as our research activities have been nationally recognized year-after-year, and our alumni have an extensive track record of making a positive difference in the world.

Total no. of Faculty	39
Adjunct/ Visiting –Teaching Faculty	0
No. of Post Doc. Fellows	03
No. of PMRF	08

## Academic Programmes

The Department of Electronics and Communication Engineering offers the undergraduate and Postgraduate in Communication, Network & Signal Processing/ Microelectronics and VLSI/RF & Microwave Engineering/ VLSI for Industry Professionals. Besides that, many new course mentioned below have been introduced for undergraduate and postgraduate students.

### (i) New Courses Developed/Introduced:

- ECN 604: High Speed Semiconductor Devices
- ECN-639: RF Filter Design and Synthesis for Communication Systems
- ECN-640: Advanced Analog IC Design
- ECN-637: Microwave Photonic ICs
- ECN-638: RF Integrated circuit design for mmWave radio
- ECN-636: Advanced Characterization and Techniques
- ECN-503: Terahertz Electronics
- ECN-509: Terahertz Design Lab-I
- ECN-502: Terahertz Design Lab-II
- ECN-602: Terahertz Communication Systems
- ECN-607: Terahertz Sensing and Imaging
- ECN-603: Millimeter-wave and Terahertz Antenna Design

### (ii) New Degree programs Developed/Introduced:

- M. Tech in Semiconductor Technology in collaboration with Taiwan Universities.
- M. Tech in THz Communication and Sensing

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	448	89
M. Tech	66	30
Ph. D	206	76

## R & D Activities

The **Communication, Networks & Signal Processing group** envisions performing cutting edge research in the area of wireless and optical communication, signal processing and computer vision, wireless sensor networks and big data mining, and cognitive radio. We aim to bridge the gap between academic institutions and Communications, signal processing, and data mining industry. The students of this group are trained with state-of-the-art curriculum which provides a strong foundation needed for meeting their responsibilities as leaders and researchers of future applications in the field of Communication.

The **Microelectronics and VLSI group** aims to bridge the gap between academic institutions and Microelectronics industry. Students are given comprehensive exposure to the latest CAD tools for IC design and basic Semiconductor fabrication and characterization techniques.

The **RF and Microwave group** is a recognized group in industry, academia, and government research partnerships. This group has a proven track record to deliver its research in the field of RF and THz technologies.

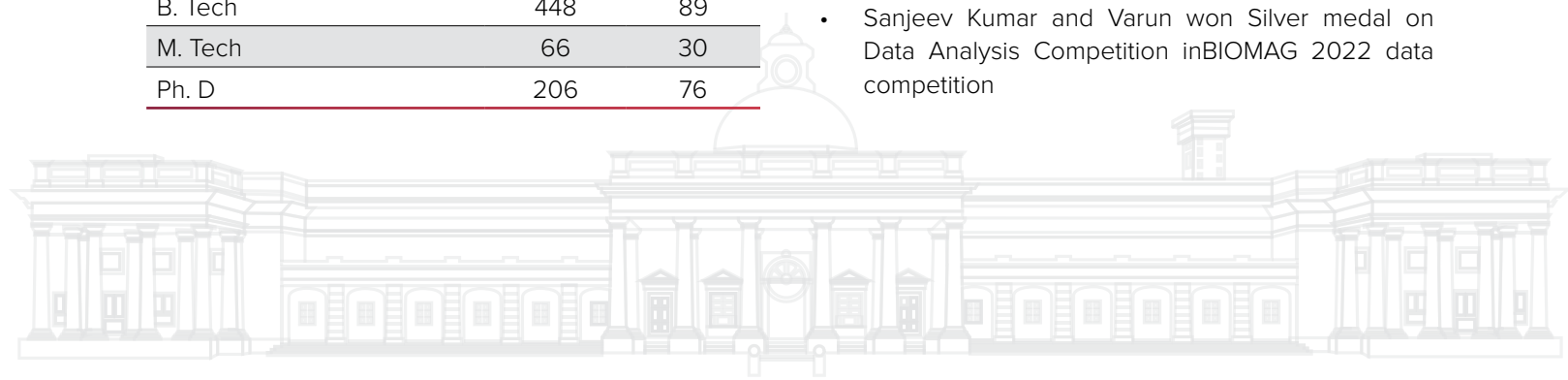
Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	17	685.5	1	9.44
Ongoing	30	2424.21	None	
Completed	20	950.39	1	11.33

## Major Facilities

- Microelectronics Laboratory
- RF Wafer characterization facility
- Jio 5G Innovation Lab

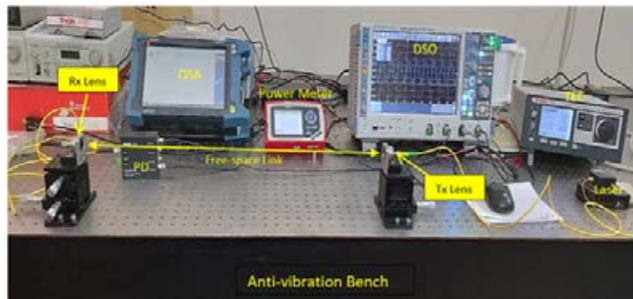
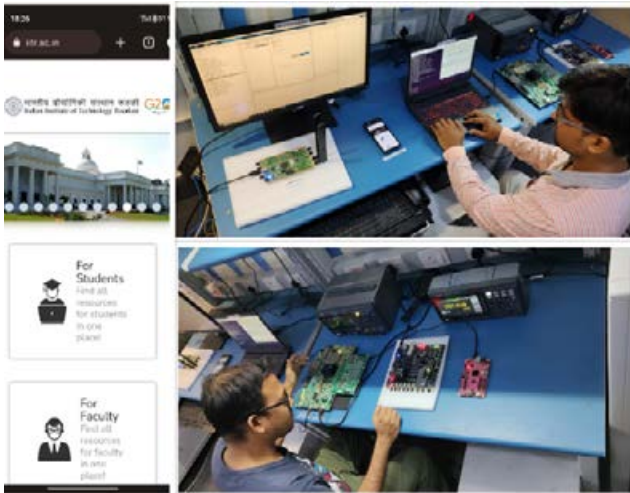
## Student Achievement

- Dhanunjay Reddy and Sanjay Shrestha won Gold medal on Data Analysis Competition in BIOMAG 2022 data competition
- Sanjeev Kumar and Varun won Silver medal on Data Analysis Competition in BIOMAG 2022 data competition



## Notable Activities in the Department

Newly developed Beyond 5G/6G wireless lab: i) Image (top) shows connection between 5G base station (Core network and gNB) and commercial 5G phone; ii) Image (left) shows the page downloaded using live 5G network; iii) Image (bottom) shows the FPGA setup used for testing 5G Advanced Base station software algorithms.



Newly setup Optical Wireless Communication (OWC) Laboratory



Newly installed Electron beam evaporation system in Microelectronics Lab

## Faculty Entrepreneurship Details

- **Dirghadhi Technology Pvt. Ltd.**, the primary aim of DTPL is to provide a cost-effective solution for the applications involving contactless detection and identifying the targets with development for the products such as satellite-based agriculture information system, ground penetration radar.
- **Linear-AmpTech**, is dedicated towards indigenous development of radio frequency front end, sensors and wireless solutions. Major products of the company include RF power amplifiers design, SDR Spirit Software, WAIT (Warning Ahead Of Intersections and Turns), AI Qube Data Core and Private Blockchain Network.
- **Nano AI Technology**, has the primary objectives as the development of new frontiers in edge computing, reduction in processing time, computational resources, and power, and designing innovative applications and novel architectures for artificial intelligence.

## Publication

	Paper in Conferences	Paper in Journal	IP Filed/Granted
Total	62	74	IP filed (8), Patent granted (3)

Several webinars/symposiums/workshops/conferences were organized, including Radio Frequency Front end design and solutions for advanced Wireless and space communication”, 3 Days workshop on LabVIEW and Data Acquisition Systems, Fourth lecture of “Industry Lecture Series” 5G architecture & 5G’s industry use cases etc.

**Third Prof. A. K. Kamal Memorial Lecture** - The Department initiated Prof. A. K. Kamal Memorial Lecture series from the session 2019-20, in memory of Prof. Aditya Kumar Kamal, the founder HOD of the Department of Electronics & Communication Engineering, IIT Roorkee. Prof. Shibhan Kishen Koul (Emeritus Professor, IIT Delhi) delivered a lecture on ‘Engineering Education and Innovative Research-New Opportunities’ as part of the third lecture was held on 11th November 2022.



**Department of Electronics and Communication Engineering**  
Indian Institute of Technology Roorkee, Roorkee, India

**3<sup>rd</sup> Prof. A. K. Kamal Memorial Lecture**

Date : 11<sup>th</sup> November, 2022 (Friday)  
Time : 10-11 AM  
Venue : Biotech Auditorium, IIT Roorkee

**Invited Speaker**  
**Prof. Shiban Kishen Koul**  
Life Fellow IEEE, Fellow INAE  
Emeritus Professor, IIT Delhi

Title of the talk :  
**Engineering Education and Innovative Research - New Opportunities**

High tea will be served after the lecture



## Department of Humanities and Social Science

The Department of Humanities and Social Sciences in IIT Roorkee (erstwhile University of Roorkee) was established in 1966 with a vision to integrate human values and social concerns with technical education.

Total no. of Faculty	Details	Degrees Awarded
Adjunct/ Visiting –Teaching Faculty	27	76

### Academic Programmes

Over the years, it has developed into a lively department, encompassing teaching and research programmes in

the areas of English, Economics, Psychology, Sociology, Fine Arts and related inter & cross-disciplinary subjects. The department runs two academic programmes a two-year M.Sc. in Economics and a five-year BS-MS in Economics

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech (B.S-M.S Eco.)	33	NIL
M. Tech (M.S. Eco.)	11	11
Ph. D	222	22

### R & D Activities

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	01	37.50	NIL	00.00
Ongoing	11	714.84	01	25.00
Completed	04	64.14	01	7.3

### Student Achievement

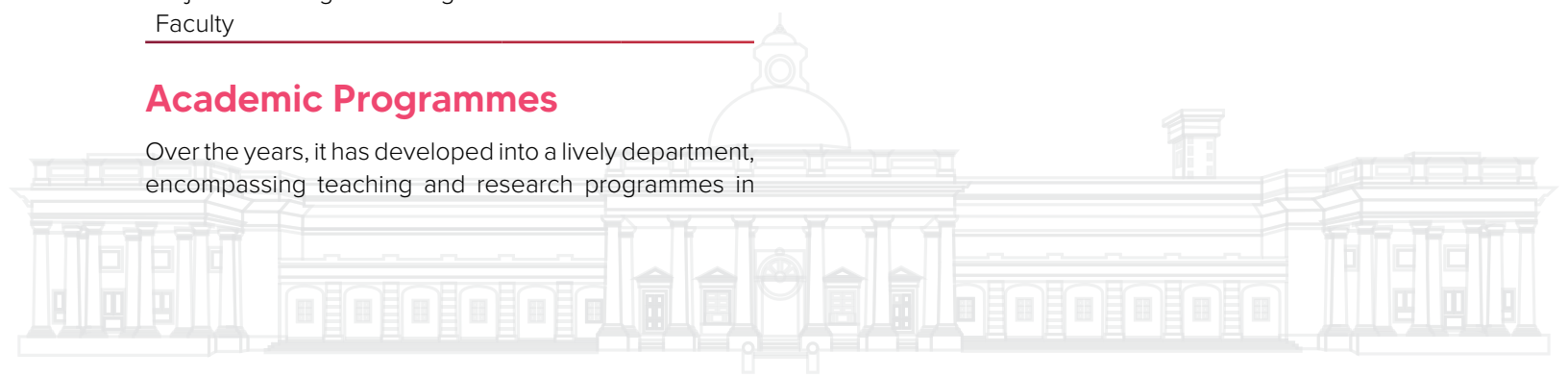
- Amritha R Krishnan, has been selected for Fulbright Nehru- Doctoral Fellowship 2023- 2024.
- Abhilasha Gusain, has been awarded with The Sabin Award for Comics Scholarship, 2022.

### Other Highlights

- Ankit Maurya has been Awarded India Alliance Travel Grant of INR 5000/- to participate in the India-European Molecular Biology Organization (EMBO) lecture course on Noninvasive Brain Stimulation - Advances in Research and Clinical Practice. In addition he has been also awarded with 'Best Poster Presentation' and a cash prize of INR 5000/- ' on Institute Research Day

### Publication

	Book / Book Chapters	Paper in conferences (National & International)	Paper in Journal (National & International)	IP Filed/ Granted
Total	02	12	78	NIL



Several webinars/ symposiums/ workshops/ conferences were organized, a few of them are listed below:-

- Tribal Development in India: Prospect and Retrospect
- Environmental Change and Socio-Cultural Transformations in India
- Capacity Building Programme on Quantitative and Qualitative Methods for Research in Social Sciences.



Hydrology (viz., Surface Water Hydrology, Groundwater Hydrology Watershed Management). The Department also offers Ph.D. program.

Programmes Offered	Students On-Roll	Degrees Awarded
M. Tech	81	13
Ph. D	43	02

## R & D Activities

The Department of Hydrology has made significant advancements in emerging fields through research projects, the establishment of new research labs, and the introduction of new courses. The Department faculty members having specializations in surface water hydrology (Floods, Droughts), water resources systems, watershed management, Geo-hydrology, groundwater geophysics, stochastic hydrology, hydro-informatics, environmental hydrology, atmospheric physics, climate change, etc.

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount (Rs. in lacs)
New	02	99	06	146.81
Ongoing	09	683.2	03	76.5
Completed	02	24	03	50



## Department of Hydrology

The Department came into existence with the inception of the International Post Graduate Course in Hydrology in 1972, being the first such a program in a developing country. The courses, offered by the Department are presently sponsored by the Government of India and UNESCO.

Total no. of Faculty	09
No. of PMRF	03

## Academic Programmes

The Department offers two-year courses leading to Master's degree in three major specializations of

## Major Facilities

- Hydraulic Flume channel.

## Student Achievement

- Ms. Pooja Patle, Mr. Aman Kumar, Mr. Prabhat Dwivedi, Ms. Sujata S. Kulkarni and Mr. Vijay Kumar Bejagam has received the prestigious prime minister research fellowship.
- Ashish Mishra, has received the Sivapalan Young Scientist Travel Award (SYSTA)
- Ms. Shivani Parashar, has been selected for ANSYS fellowship award
- Mr. Shubham Tiwari, has received the "Best Paper Award" (ICIWRM'22)
- Mr. Gaurav Vaghela, has been awarded with distinguished "Asian Young Professional on Water Research", and "Excellent Abstract Award", along with "International Travel Support" at (SEAW-13)

## Publication

	Book Chapters	Paper in Journal
Total	03	60

The department has organized various training programmes, workshops & seminars including:-

50 years of excellence, the department organized a yearlong event series. As part of these celebrations, the department hosted its first-ever three-day water tech fest named “Pravaaha” from March 20-22, 2022. Several training programs were also organized, including sessions on soil pollutants impact assessment, space technology applications for compound extremes, and experimental hydrology techniques. Furthermore, the Department of Hydrology sent a delegation to the University of Potsdam and the University of Hamburg in Germany, strengthening collaborations and establishing MoUs. The department’s symposium activities, such as the EcoHydrology Symposium and the Natural-Hazard Symposium for the Indian Himalayas 2022, garnered significant attention from the media. Notably, several renowned researchers visited the department to foster collaboration. 9th International Groundwater Conference-2022 and two-day pre-conference training on groundwater modeling using FEFLOW was much success involving 300+delegates.

1. Two-week Training on Emerging Space Technology Applications for Compound Extremes 2022
2. Hands-on Training Program on “tools and techniques of experimental hydrology”
3. Workshop on Scientific visualization
4. 1-day workshop on 1D- 2D Dam Break Modelling using the MIKE platform
5. Google Earth Engine (GEE) Workshop on 20 July 2022

6. Indo-German Workshop on 20-22 July 2022
7. Natural-Hazard Symposium for The Indian Himalayas 2022
8. 9th International Groundwater Conference
9. International e-ITEC training course from 28th to 30th November 2022
10. PRAVAAHA 2023
11. Sustainable Agri-Water Use” on January 20, 2023
12. e-ITEC Sponsored Training Program on Ecohydrology
13. Training Program ‘Hydrological Analysis and Planning for the Hydro and Thermal Power Projects’ from March 13-17, 2023.





## Department of Hydro and Renewable Energy

HRED is carrying out research, development, and training advisory services to provide key inputs for the full realization of renewable energy potential in different areas such as solar, wind, and biomass through its diverse interdisciplinary faculties and well-equipped laboratories specific to each of the areas. HRED has expanded its reach to the areas of green hydrogen, batteries, electric vehicles, and grid integration including both theoretical and experimental research activities supported by several funding sources.

Total no. of Faculty	9
Adjunct/ Visiting –Teaching Faculty	3
No. of Post Doc. Fellows	02
No. of PMRF	07

### Academic Programmes

The department offer M.Tech. programmes in “Renewable & Hydro Energy Systems” and “Environmental Management of Rivers and Lakes” and PhD program. At the UG level, department offer elective subjects on Renewable Energy, and also offers a minor program in Renewable Energy Technology to B.Tech. students of the Institute.

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	-	-
M. Tech	40	08
Ph. D.	57	08

### R & D Activities

Department deliver high-quality technical advisory assistance and consulting services in the area of renewable energy and environmental management of water bodies.

Project Status	Sponsored	Amount (Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	06	3565.57	53	395.72
Ongoing	35	5094.15	139	1990.17
Completed	04	475.20	31	463.04

### Major Facilities

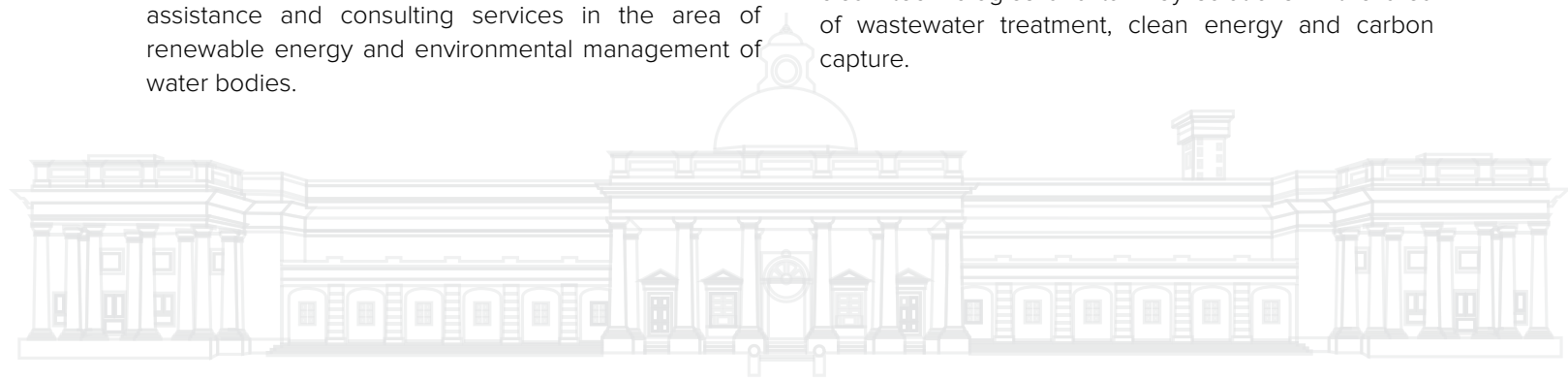
- Hydraulic Turbine Testing Facility
- Laser Diffraction based LISST- infinite online sediment monitoring instrument
- OPAL-RT Real Time Digital Simulator
- 2D Laser Doppler velocimetry system
- High performance computing facility

### Student Achievement

- Sukhanth Babu Pagadala, received BSHPC Cash Prize.
- Sachin Aggarwal, Awhwani Kumar Goel, received ALEO Manali Hydropower Award
- Arnab Baruah, Dwarika Dass Balwant Kaur received Thapar Cash Prize.
- Pabbathi Sowmya, Ahzam Shakeel, Iram Naaz, Sachin Aggarwal, Ankur Singhal, Sachin Aggarwal received Chhattisgarh State Power Generation Corporation Hydro Award.
- Sachin Aggarwal received Usha Annual Award.
- K. Bheemalingeswarareddy has been awarded for best video clip
- Priya Gupta has been awarded for best poster
- Ms Jyoti Pal has been awarded for best poster
- Ms Mamta has been awarded for best research paper

### Faculty Entrepreneurship Details

E3BIOCLEANTECH is a DPIIT certified startup from IIT Roorkee, India, founded in 2022 by the experts of water, energy and environment. We are a deep-tech, research-based team providing novel and sustainable clean technologies and turnkey solutions in the area of wastewater treatment, clean energy and carbon capture.



## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	IP Filed/Granted
Total	2	12	18	48	5

Several webinars/symposiums/workshops/conferences were organized, including SFME International Conference and SBM International Conference. A few of them are mentioned below

- Workshop on “Development of National Scheme for Advanced grid-scale energy storage technologies” at IIC New Delhi sponsored by NVF, USA.

- International Conference on Hydro and Renewable Energy: Net Zero carbon Energy Systems at IIT Roorkee sponsored by Biologic, Virtual Hydromet, and Virtual Infrapower.
- Training cum workshop on “Hydraulic–Turbine Model Testing, Cavitation, Silt and Abrasive Erosion Measurements” at HRED, IIT Roorkee.







## Department of Management Studies

The Department of Management Studies has, over a short period, acquired and developed adequate infrastructure, expertise and resources to excel in imparting management education.

Total no. of Faculty	24
Adjunct/ Visiting Teaching Faculty	04

### Academic Programmes

The department of management studies imparts high quality education in the professional fields of business management and offers Masters in Business Administration (MBA- Two years full time Program) & Ph.D. Programmes. At present, more than 114 Ph.D. Scholars are pursuing research in the department. The department has subscribed large number of databases for excellence in research.

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	-	-
M. Tech	-	-
Ph. D	114	20

### R&D Activities

Project Status	Sponsored	Amount (Rs. in lacs)
New	IIT Roorkee	37.5
	Environment Defense Fund	24
	Environment Defense Fund	16.25
	New Venture Fund, Washington	10.42
	Environment Defense Fund	24
Ongoing	Department of Biotechnology, GOI	74

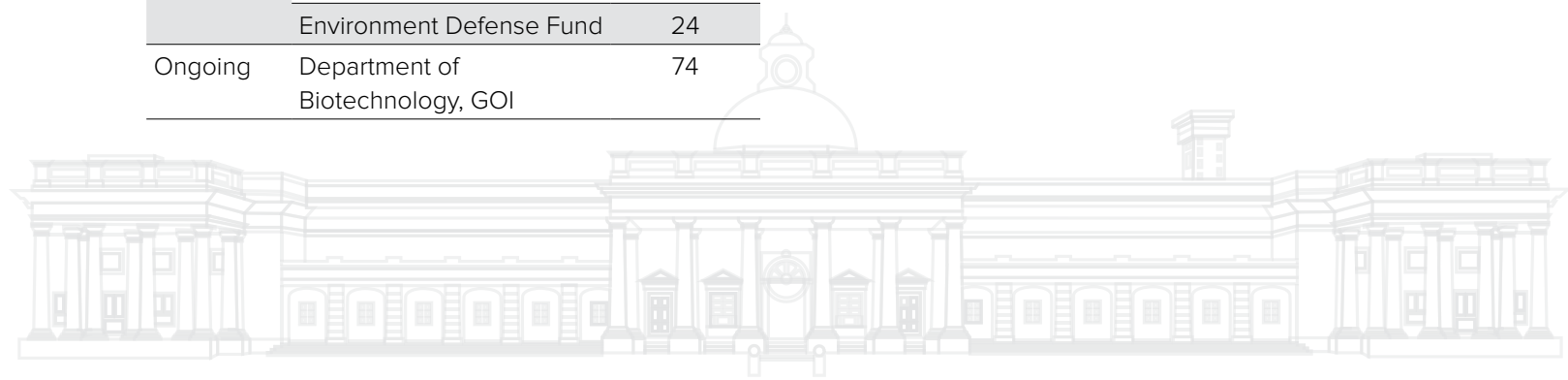
Project Status	Sponsored	Amount (Rs. in lacs)
Completed	ICSSR (2021-23)	9
	SRIC, IIT Roorkee	20
	Ministry of Environment and Forests GOI	90.80
	NFCG, CII (New Delhi, New Delhi, IN)	9.74

### Other Highlights

- Mr. Amit Pandey won the cash prize of Rs. 10,000 in NISM Conference 2022
- Ms. Simran won the cash prize of Rs. 25,000 for second best paper at NISM Conference
- Ms. Charu Vadhava the won cash prize of Rs. 10,000 in NISM conference, Mumbai
- Mr. Kunal Rao the won cash prize of \$50

Several webinars/symposiums/workshops/conferences were organized, including SFME International Conference and SBM International Conference. A few of them are mentioned below

- Avenir "The Annual Business Conclave"- 2022
- Shaping the Future of Management Education for Sustainable Emerging Economics Conference
- A Fireside chat show with Padma Shri Dr. B.V.R. Mohan Reddy
- Workshop on Bloomberg Terminal
- Sustainable Business Management International conference
- Two days workshop on Markov Decision Process and Reinforcement Learning
- Workshop on Flipkart





## Department of Mathematics

Although being an integral part of the Engineering programs of the Institute for the last 175 glorious years, the Department of Mathematics attained its present independent status in 1960. Besides Undergraduate and Postgraduate programs in Mathematics, the department offers Ph.D. degrees in various areas of Pure and Applied Mathematics, Operations Research and Statistics. Department has collaborations with many National and International Organizations in various fields of Mathematics.

Total no. of Faculty	27
Adjunct/Emeritus/Visiting –Teaching Faculty	02
No. of Post Doc. Fellows	02
No. of PMRF	02

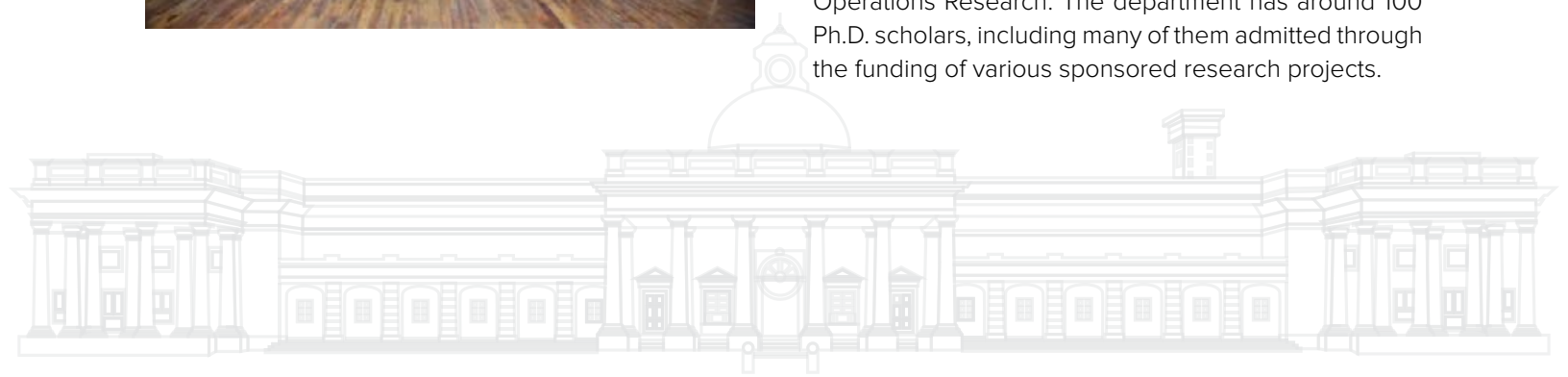
## Academic Programmes

The Department offers a five-year Integrated UG/ PG program in Mathematics, and a dual degree BS-MS (Mathematics and Computing) programme since last year. It also runs its traditional two-year MSc (Mathematics) programme.

Programmes Offered	Students On-Roll	Degrees Awarded
BS-MS	88	-
Int. M.Sc	119	31
M. Sc	73	31
Ph. D	119	11

## R&D Activities

The department has a strong and dedicated team of faculty members having expertise in various areas of pure and applied Mathematics, Statistics, and Operations Research. The department has around 100 Ph.D. scholars, including many of them admitted through the funding of various sponsored research projects.



Project Status	Sponsored	Amount (Rs. in lacs)
New	08	152.30
Ongoing	24	436.15
Completed	09	101.31

## Notable Achievements

The job placement of students from the Department is always among the highest in the country both in terms of salary packages and the status of the hiring companies. Several students Ph.D. from this department are well recognised in different prestigious institutes (e.g. IIT, ISI, and IIM) of our country and industry in abroad.

## Other Highlights

The Department faculty have mentored many student from IIT, NITs and NISERs who were offered internship to the department.

## Publication

Book Chapters	Paper in Conferences	Paper in Journal
01	05	65

Many conferences/ workshops were successfully organized by the Department funded by SERB, CSIR, UCOST etc. Some are listed below.

- International Symposium on Recent Advances in Computational Analysis and Modelling
- International Conference on Dynamical Systems, Control and their Applications
- High-end workshop on Mathematical Modeling and Dynamical Systems with applications using Mathematica and Matlab



## Department of Mechanical and Industrial Engineering

The Department of Mechanical Engineering came into being in the year 1946 and the first batch of Mechanical Engineers graduated in the year 1949. The department was renamed as Department of Mechanical & Industrial Engineering on its silver jubilee in 1974 when an undergraduate programme in Industrial Engineering was started. At present it offers both undergraduate and postgraduate courses in various facets of Mechanical and Industrial Engineering.

Total no. of Faculty	45
Adjunct/ Visiting –Teaching Faculty	1
Emeritus Faculty	1
Ramanujan Fellow	1
No. of Post Doc. Fellows	3
No. of PMRF	6

## Academic Programmes

The Department offers two different four-year courses leading to the Bachelor's Degree in Mechanical Engineering and Bachelor's degree in Production and Industrial Engineering. The department also offers two year courses leading to Master's degree in six major specializations of Mechanical and Industrial Engineering (viz., CAD, CAM & Robotics, Machine Design Engineering, Production and Industrial System Engineering, Thermal Engineering, Welding Engineering and Additive and Joining Technologies).

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	605	158
M. Tech	88	33
Ph. D	176	42



## R&D Activities

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	16	888.87	27	258.43003
Ongoing	23	2010.66	17	211.57033
Completed	23	990.499	10	46.85970

## Major Facilities:

- Portable FTIR multi-gas analyzer DX-4000 Gaset.
- Multi axis vibration simulation shake table-6.
- Advanced audio-video conferencing facility (Committee room)
- High performance computing facility.

## Student Achievement:

- Dr. Aditya Kumar, has been appointed as Assistant Professor at NIT Trichy.
- Mr. Pritam Ghosh has received best paper award at 7th National Symposium on Shock Waves.

## Other Highlights:

- Alumni funds of 1.2 crores INR were invested in the department's auditorium renovation and fellowship programme for female students.

## Notable Activities in the Department:

Prof. Rahul Mulik established a wire based arc additive manufacturing facility for high temperature metals at very cost effective manner in Machine Tools Lab.

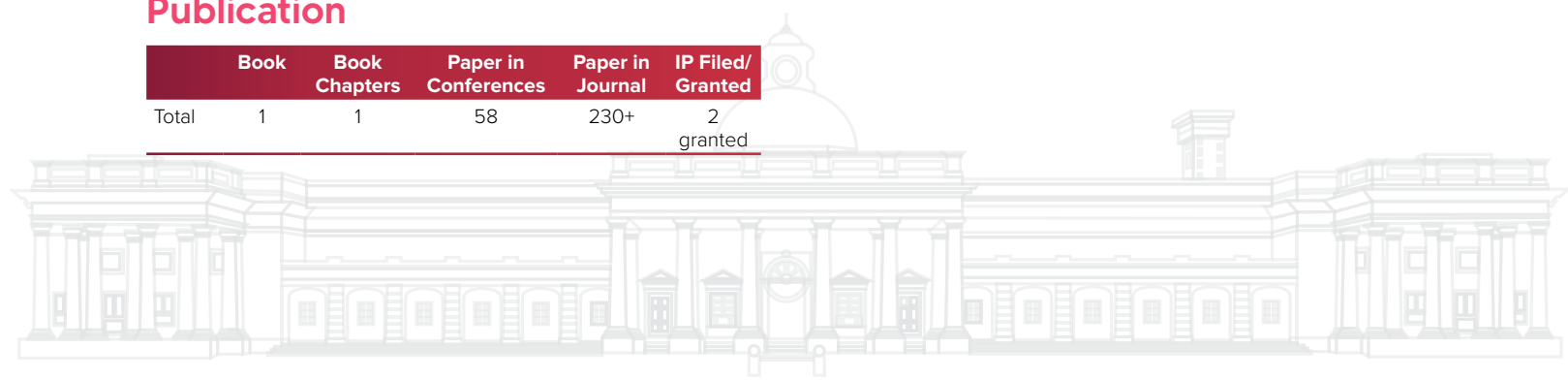
## Faculty Entrepreneurship Details

RoboLife is a start-up, incubated at Technology Incubation and Entrepreneurship Development Society (TIEDS), IIT Roorkee. It has developed a proprietary and patented technology (patent applied) to produce robots that can register patients in hospitals in a non-contact way.

## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	IP Filed/Granted
Total	1	1	58	230+	2 granted

Several webinars/symposiums/workshops/conferences were organized, including Organized 9th International and 49th National conference on Fluid Mechanics and Fluid Power. Organized 7th national workshop on Research Methodology in Fluid Mechanics: Challenges in CFD. Organized two days national seminar on "Inflatable Structures and Lightweight Materials: A new era of Space and Defense Applications".





## Department of Metallurgical & Materials Engineering

The Department of Metallurgical Engineering was established in 1963 with a four year B.E. program in 1963. Subsequently, the M.E. programs in (i) Physical Metallurgy and (ii) Extractive Metallurgy was started in 1969. The department has been actively involved in research since its inception with the first Ph.D. degree awarded in 1970. With the broadening of the scope of research output and curriculum revision to adapt to the changes in engineering materials to meet sustainable development goals-2030 in various advanced technologies the name of the Department was changed to Metallurgical and Materials Engineering at the turn of the century.

Total no. of Faculty	25
No. of Post Doc. Fellows	01
No. of PMRF	08

### Academic Activities

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	71	68
M. Tech	07	13
Ph. D	176	42

### R&D Activities

Project Status	Sponsored	Amount Rs. (in lacs)	Consultancy	Amount Rs. in lacs
New	04	93.27	01	20
Ongoing	25	904.87	01	20
Completed	04	104.53	04	6.38

### Major Facilities:

- Fe-SEM Model: Sigma 300 Practical, powerful, Productive
- Dedicated Powder XRD

### Student Achievement:

Mr. Ankur Kumar of MMED was awarded AMPP EMERG India Scholarship (INR 150,000) by NACE International Foundation in India, at the AMPP annual conference in Denver, Colorado (USA) on March 21, 2023. This prize honours exceptional Indian students who are pursuing careers in the field of Corrosion Science and Engineering.

Several webinars/ symposiums/ workshops/ conferences were organized, including Advances in Materials & Processing: Challenges & Opportunities (AMPCO-2022), Thermo-Calc workshop, Training program: Glass vacuum sealing, IVth Prof. M.L. Kapoor endowed Lecture.

### Publication

	Book Chapters	Paper in Journal	IP filed/ granted
Total	02	57	02





## Department of Paper Technology

Department of Paper Technology offers two years M. Tech. degree in Paper Technology and Packaging Technology to cater the needs of the paper and packaging industries and simultaneously impart knowledge of the allied chemical and process industries. The departmental research activities are tuned with the needs of industry.

Total no. of Faculty	06
No. of PMRF	03

### Academic Activities

The Department of Paper Technology offers 03 distinct courses to cater to the diverse needs and interests of students:

1. M. Tech- Pulp & Paper Engineering
2. M. Tech- Packaging Technology
3. Ph.D.- Paper Technology

Programmes Offered	Students On-Roll	Degrees Awarded
M. Tech	44	19
Ph. D	33	03

### R & D Activities

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
Ongoing	06	165	01	7.19
Completed	01	135.558	15	305.84

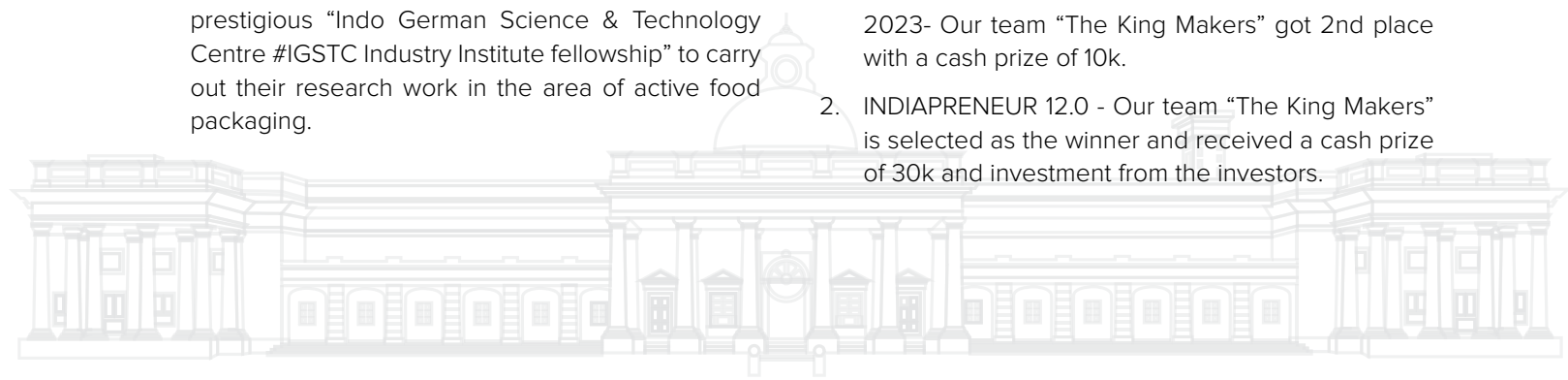
### Student Achievement

1. Ms. Konala Akhila, has been awarded the prestigious “Indo German Science & Technology Centre #IGSTC Industry Institute fellowship” to carry out their research work in the area of active food packaging.

2. Mr Dakuri Ramakanth, has been awarded the prestigious “Indo German Science & Technology Centre #IGSTC Industry Institute fellowship” to carry out their research work in the area of active food packaging.
3. Ms. Pragti Saini, has been awarded with the Best poster award, Institute Research Day 2023, IIT Roorkee
4. Ms. Pragti Saini, has been awarded with the Best oral presentation award, Industrial and Research Conclave 2023, IIT Indore for the topic “Improvement in organoleptic properties of virgin and recycled polyolefins by reducing Volatile organic compounds”.
5. Mr. Vijayakumar and Mr. Kamal Kumar, has been secured 2nd position at the “Business Plan Event 2023” & secured 3rd position at “Vaayu” organized by NIT Kurukshetra under E-Summit 2023 & business plan competition held by E-Cell of Delhi Technological University.
6. Ms. Prachi Jain Kumar, has been secured 2nd prize in a poster presentation at National level conferences on “Women in Academia, Research, and Management of Food Safety and Toxicology (WARM-FOST)” for her Ph.D. research work in the area of Food safety and packaging on 24-25 February 2023
7. Mr. Praveen Kumar Kunam, has bagged 1st Prize for Paper Presentation (AMIFOST – 2023) in the area of Sustainable Food Packaging at International Conference on “Multidisciplinary Approach for healthy & Sustainable Foods, at Amity University, Noida.
8. Mr. Lokman Hakim, has bagged the 1st Prize for Paper Presentation (AMIFOST-2023) in the area of Sustainable Food Packaging at International Conference on “Multidisciplinary Approach for Healthy & Sustainable Foods, at Amity University, Noida.

### Other Highlights

1. NIT Kurukshetra E-Summit'23- Business Plan Event 2023- Our team “The King Makers” got 2nd place with a cash prize of 10k.
2. INDIAPRENEUR 12.0 - Our team “The King Makers” is selected as the winner and received a cash prize of 30k and investment from the investors.



- 3. INNOVWAVE 2023- Our team “The King Makers” is one of the winner to receive the 1 lakh fellowship.

## Notable Activities in the Department

- **NABL-** accredited Paper Testing Laboratory increased 14 tests and further accredited up to 2025.
- **Technology Transfer:** A water-soluble acrylic-styrene co-resin formulation and its method of synthesis; developed by Dharm Dutt, Anurag Kulshreshtha, Akshay Dvivedi, Millie Pant, and Brahma Prakash, and the technology has been transferred to M.S. paper Delhi.

## Publication

Book	Book Chapters	Paper in conferences	Paper in Journal	IP Filed/ Granted
Total	09	22	87	05

Several webinars/symposiums/workshops/conferences were organized, including 2nd Lecture for Dr. B.L. Bihani Endowment Series was held on 27th September 2022 in which Dr. Subhash Maheshwari was the speaker.



## Department of Polymer & Process Engineering

The Department of Polymer and Process Engineering (DPPE) is one of the unique departments of the Indian Institute of Technology Roorkee (IITR), located in the Saharanpur Campus of IIT Roorkee. The Department houses state-of-the-art advanced characterization equipment's such as DSC, TGA, FTIR, UV-vis-IR, DMA, UTM, XRD, AFM, SEM, Raman, DLS, GPC, Rheometer, Twin screw extruder, Injection molding machine, Micro extruder & injection molding machine, Hakke blender, Rubber processing instruments, to name a few.

Adjunct/ Visiting / Teaching Faculty	10
No. of Post Doc. Fellows	02
No. of PMRF	03

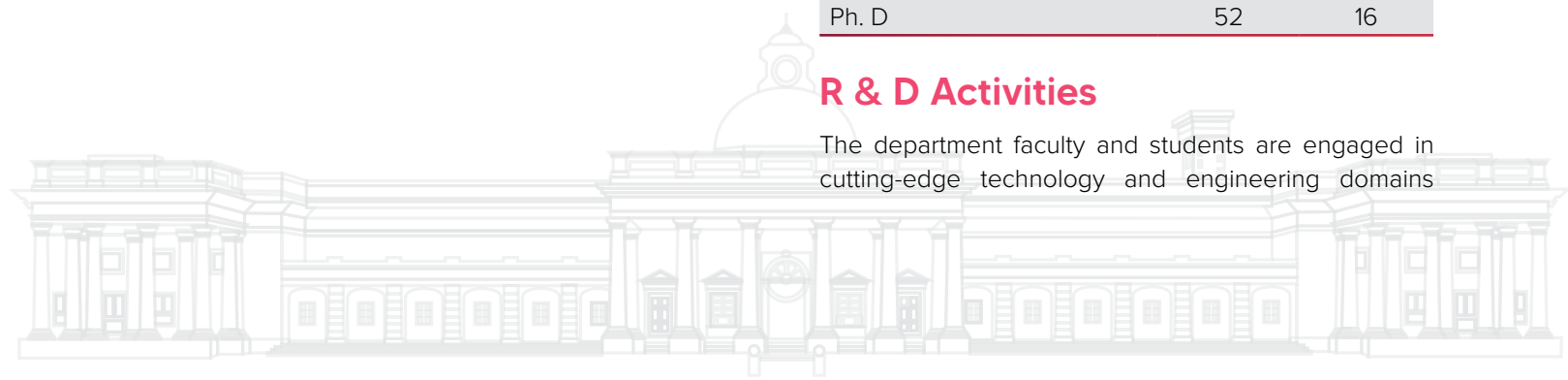
## Academic Activities

The Department of Polymer Science and Process Engineering offers a two-year M. Tech program with a current intake of 22 students. The department runs a Master's program in Polymer Science and Engineering and doctoral programs. The M Tech. program imparts fundamental and applied knowledge to the students and trains them to be professionally ready and well-trained for industry and academic jobs. Among the several industries relevant applied and theoretical courses taught to these students, some of them include: Advance Polymer Characterization, Macromolecular Chemistry, Advanced reaction engineering, Polymer rheology and Physics, Molecular Modeling and Simulation, Polymer Processing, etc.

Programmes Offered	Students On-Roll	Degrees Awarded
M. Tech	30 (09+21)	06
Ph. D	52	16

## R & D Activities

The department faculty and students are engaged in cutting-edge technology and engineering domains



such as, but not limited to, membrane separations, phase change materials, advanced hybrid polymer composites, memristic and conductive polymer materials, fire-retardant materials and aerogels, adhesives, drug delivery and tissue engineering, easy-clean coatings, polymer modified bitumen and rheology of performance materials, nanogenerators, micro-swimmers and electrospinning, process modeling and simulations, molecular modeling and simulation.

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	03	82.76 L	06	26.0 L
Ongoing	04	120.61 L	02	4.366 L
Completed (during 22-23)	07	344.03 L	06	26.0 L

## Major Facilities

FE-SEM, AFM, X-Ray Diffractometer System, ICP-ES, Surface Area Analyzer, Gel Permeation Chromatography, Modular Compact Rheometer, Micro Injection Molding Machine, Micro Small Twin Screw Extruder, Mini Extruder & Batch Mixer.

## Students Achievement:

- Prakhar Tripathi, has been awarded with the NTU-INDIA Connect Fellowship
- Dr. Nishant Jain received the “Young Scientists award” in the 4th National Conference on Advances in Chemical Engineering and Science 2023 was held recently in IISER, Bhopal.
- Dakuri Ramakanth has been selected for IGST fellowship-2022 & Commonwealth fellowship – 2023.
- Pragya Gupta received the Institute-level A K Goyal Green Energy Prize & Gold Medal/1L Cash prize in Convocation,
- Pragya, has been awarded with Department Gold Medal & Shyam Bihani Cash award.
- Shiva Singh & Chhavi Verma received Polymer Processing Society graduate student travel award 2023-PPS-38 St. Gallen, Switzerland.
- Mayank Gautam, received DAAD fellowship.
- Rahul Gautam, has been selected for Commonwealth fellowship 2022

- Manjinder Singh has been selected for Commonwealth Split Site fellowship 2023.

## Other Highlights

Arpit Dubey and Suvidha Khaire, M.Tech Polymer Science and Engineering Students under the mentorship of Prof. Gaurav Manik won the Silver Award, a cash award of Rs. 5 Lakh total and an Engineer at Heart memento for their innovative idea on “Self-cleaning solar panels” in the 5th Edition of L&T Techgium Open Innovation, 2022.

## Publication

	Book	Book Chapters	Paper in Conferences	Papers in Journals	IP Filed/Granted
Total	01	10	11	108	02/03

Several webinars/symposiums/workshops/conferences were organized, including;

- Industry Day Celebration-2022
- An Invited talk on ‘Molecular scale solvation of responsive macromolecular solutions.
- An Invited talk on ‘Applied Research Towards Sustainable Development’ as part of Sustainability Lecture series.
  - Talk on ‘CO<sub>2</sub> utilization and mineralization to functional materials’
- An Invited talk by Dr. Debdatta Ratan Scientist in Naval Materials Research Lab.- DRDO
- Invited Talk on “Role of Academic Institutions towards Atmanirbhar Bharat through the Eyes of MSME Sector on National Education Policy” by Dr. Subhrakamal Dutta, MOE
- An Invited talk on ‘Sustainability Nexuses: Solutions and Management Framework for a Brighter and Healthy Future’ as part of Sustainability Lecture series by Dr. Mohan Gupta
- An Invited talk on ‘Breakthroughs in Sustainable and Smart Products Through AI-Enabled Green Chemical Synthesis and Sustainable Engineering’ as part of Sustainability Lecture series







## Department of Physics

The Physics Department of IIT Roorkee is a world-famous center of quality teaching and cutting-edge research. Equipped with latest state-of-the-art research facilities and international standard infrastructures, the department is well-known for its expert faculties and high-quality students.

Total no. of Faculty	(39)
No. of Post Doc. Fellows	03
No. of PMRF	06

### Academic Activities

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	52	31
M. Tech	13	15
Ph. D	28	13

Programmes Offered	Students On-Roll	Degrees Awarded
M.Sc.	24	28
M.Sc. Integrated	16	16

### R & D Activities

The department is actively involved in disruptive technology research including energy conversion and storage, advanced fiber optics and communication system, quantum optics, High-TC superconductivity, IT, AI ML, to excel in the new areas of research and development.

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	10	1426.16	-	-
Ongoing	22	1736.534	-	-
Completed	16	448.572	03	10.00



## Major Facilities

- Gamma Irradiation Chamber
- Gamma Spectrometer
- Wide Bandwidth Trans Receiver Test System

## Students Achievement:

- Mr. Rinku Prajapat received IGSTC Industrial Fellowship at GSI, Darmstadt, Germany.
- Mr. Gagan Kumar Sharma received Fulbrite Kalam Climate Fellowship & Commonwealth split-site Scholarship at US & UK .

## Publication

	Book	Book Chapters	Paper in Conferences	Papers in Journals	IP Filed / Granted
Total	-	-	67	153	02

Webinars/Symposiums/Workshops/Conferences were organized, including SFME International Conference and SBM International Conference. A few of them are mentioned below

- Emergent phenomena in quantum materials (E-QMAT)
- Conference on Optics Photonics and Quantum Optics – COPAQ 2022
- Electrical and optical properties of perovskites: matching views by the two communities (EOPP 2022)



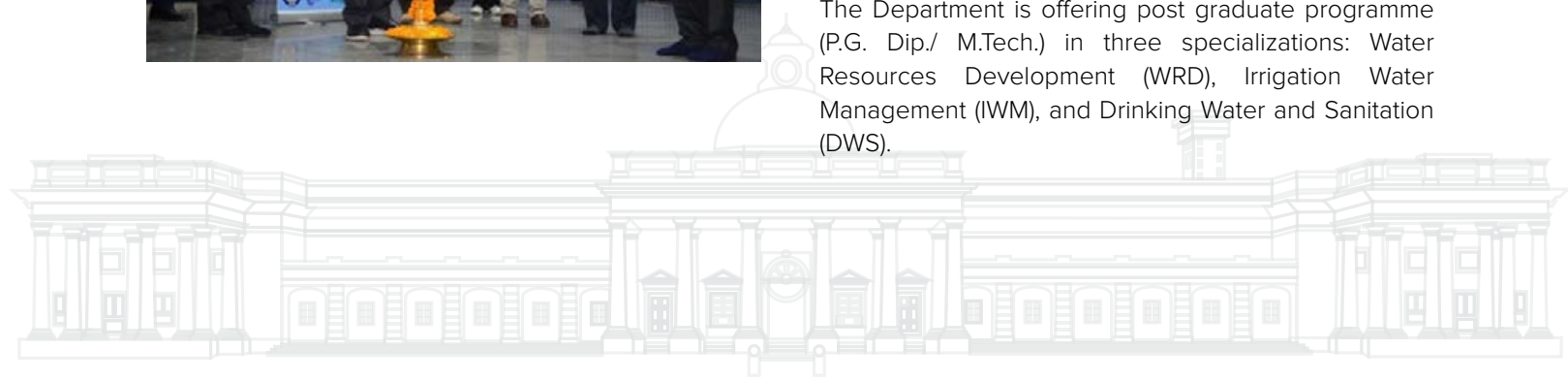
## Department of Water Resources Development and Management

The Department of WRD&M was established as an Asian African Centre to honor India’s commitment for capacity building in the area of Water Resources Development & Management. The department is a balanced blend of academicians and field engineers. The faculty is experienced in planning, design, construction, operation, maintenance and management of water resources development projects.

Total Faculty	10
Adjunct / Visiting –Teaching Faculty	03
No. of Post Doc. Fellows	02
No. of PMRF	03

## Academic Activities

The Department is offering post graduate programme (P.G. Dip./ M.Tech.) in three specializations: Water Resources Development (WRD), Irrigation Water Management (IWM), and Drinking Water and Sanitation (DWS).



Programmes Offered	Students On-Roll	Degrees Awarded
M. Tech	64	15
Ph. D	16	04

## R & D Activities

The main aim of the department is to develop manpower that can take the responsibility of sustainable development and eco-friendly natural resources management. The department is actively involved in research, consultancy, and extension activities. The department has a strong focus in the research areas of Design of Water Resources Structure, Irrigation Planning and Management, Flood Control, Irrigation and Water Management, Hydropower Development, Drinking Water and Sanitation.

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	03	102.03	06	187.3
Ongoing	23	2346.06	08	271.34
Completed	07	120.93	13	85.46

## Major Facilities

- Hydro Surveyor

## Students Achievement:

- Ms. Ritu Tiwari carried out internship in the University of Alberta, Canada from Jan 2022 to Dec 2022, under the Commonwealth Ph.D. split site scholarship programme.
- Ms. Kusumita Umesh carried out master's research at the University of Potsdam, Germany from October 2022 to March 2023 under the Co-PREPARE Master Exchange programme.
- Ms. Aakritit Gupta carried out internship in the University of Loughborough, UK from March 2022 to February 2023, under the Commonwealth Ph.D. split site scholarship programme.
- Mr. Vidyasagar Tummakuri is carrying out internship in the Uni. Of Warwick, UK from Feb 2023 to Jan 2024, under the Commonwealth Ph.D. split site scholarship programme.

The department has organized several outreach activities, out of which few are mentioned below:

- International Conference on Climate and Weather-related Extremes 2022
- National Workshop on "On-farm Water Management for Future Water Security at New Delhi, sponsored by Indian Water Society, Department of WRD&M, IIT Roorkee, and CWC, Ministry of Jalshakti at CWC New Delhi
- A session titled "On Farm Water Management for Future Water Security" was organized in 7th India Water Week -2022 at Inda Expo Centre, Greater Noida., by Indian Water Resources Society, Department of WRD&M, IIT Roorkee, and CWC, Ministry of Jalshakti, New Delhi.
- National Workshop on "Drinking-Water & Sanitation: Current Situation and Future Challenges at IIT Roorkee.
- One Day Workshop on RESilience to Climate Change and SUSTainable WatEr Supply (RESCUE), sponsored by Asia Pacific Network for Global Change Research (APN).
- Training on Advanced Tools and Techniques for Managed Aquifer Recharge (MAR), sponsored by Asia Pacific Network for Global Change Research (APN).
- Training on Approaches for Management of Groundwater Quantity and Quality with special focus on MAR (coordinator), sponsored by Asia Pacific Network for Global Change Research (APN).

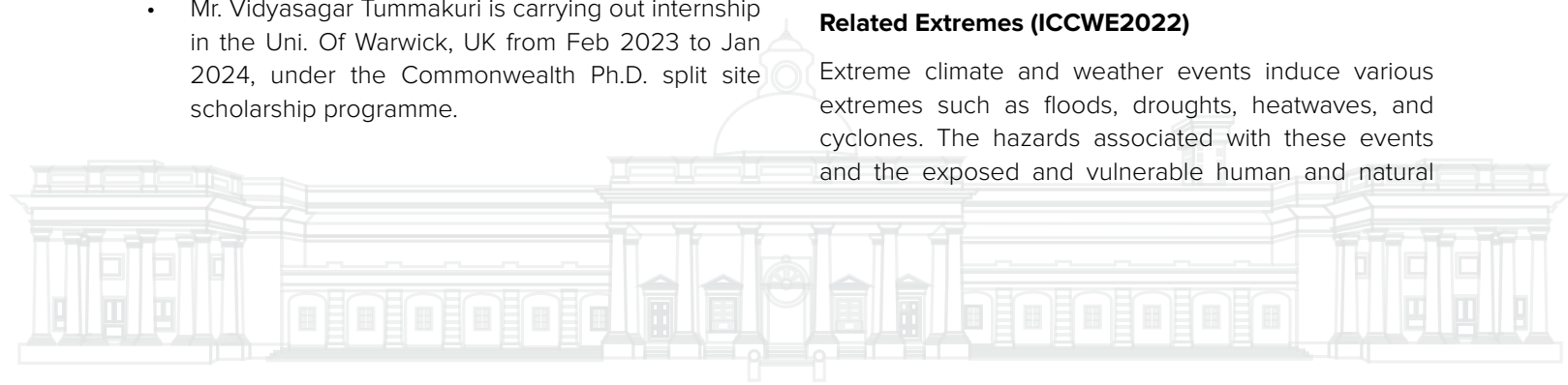
## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal
Total	06	18	80	74

## Other Highlights

### International Conference on Climate and Weather-Related Extremes (ICCWE2022)

Extreme climate and weather events induce various extremes such as floods, droughts, heatwaves, and cyclones. The hazards associated with these events and the exposed and vulnerable human and natural



systems develop into significant risks. Several scientific findings and reports warn that the frequency and intensity of the climate and weather-related extremes will magnify in the near future, given the concomitant changes in climate and socio-economic dynamics. The International Conference on “Climate and weather-related extremes - New dimensions, Challenges, and Solutions” shall gather 150+ leading scientists, faculty members, policymakers, field engineers, research scholars, and students under a common platform to interact and showcase various dimensions related to climate and weather-related extremes, particularly related to floods, droughts, heatwaves, and cyclones.

**Workshop on Drinking-Water & Sanitation: Current Situation and Future Challenges:** The WRD&M Department organized a workshop on “Drinking-Water & Sanitation: Current Situation and Future Challenges” on 1st July 2022. **Ms. Vini Mahajan**, IAS, Secretary, Department of Drinking Water and Sanitation, Ministry of Jal Shakti, Govt of India, New Delhi was the Chief Guest of the event. Ms. Mahajan applauded the initiative of WRD&M Dept. IIT Roorkee to start a new MTech Program on Drinking Water and Sanitation. She highlighted different programs of the Government of India such as “Har Ghar Nal ka Jal” program to ensure clean and adequate water supply to every household in the country. During the technical session of the workshop, notable speakers delivered their talks: Mr. Manish Wasuja, WASH Specialist, UNICEF India; Dr. Lior Asaf, Water Attaché, Embassy of Israel; Prof. CSP Ojha, Prof. M L Kansal, Prof. Prasenjit Mondal, Prof. Basant Yadav from IIT Roorkee highlighted different aspects of drinking water and sanitation.



**4th A N Khosla Endowment Lecture:** The Department of WRD&M organized the 4th A N Khosla Lecture in the memory of Padma Vibhushan Dr. A. N. Khosla on 19th January 2023. **Prof. Venkappayya R. Desai**, Director, IIT Dharwad delivered the lecture on the topic “Promotion of Water Harvesting and Voluntary Afforestation through Traditional Indian Knowledge System.”



**Farmer’s Awareness Programme to sensitize Farmers on “Agrometeorological Advisory Services”:** The WRD&M Department organized a Farmer’s Awareness Programme to sensitize Farmers on “Agrometeorological Advisory Services” under Gramin Krishi Mausam Sewa Project (GKMS) on 13.10.2022. **Dr. Mrityunjay Mohapatra**, Director General of Meteorology, Indian Meteorological Department, New Delhi released a Technical Bulletin namely “Tools for preparation of Weather based Advisory Bulletins” during the said programme and addressed the farmers & other stakeholders.



# Centres



## Centre of Excellence in Disaster Mitigation and Management

The Centre of Excellence in Disaster Mitigation and Management (CoEDMM) is India's first joint academic and research centre for Disaster Mitigation and Management with a motto of Foreseeing, Facilitating and Fostering Disaster Risk Reduction. Creating a National Database for the rapid dissemination of information and knowledge is also a core objective of the Centre.

Total no. of Faculty	03
Joint Faculty	17
No. of PMRF	03

### Academic Activities

The courses offered in the Centre are a two-year post-graduate specialization course in Disaster Mitigation and Management and the doctoral programme focussing on Earthquake, Landslide, Cyclones, Floods, tsunamis, Cyber Crime, Avalanche, Fire, Industrial disaster, CBRN (chemical, biological, radiological, and nuclear), and Geomatics Technology. The Centre has 17 joint faculty members and three core faculty members specializing in disaster-related domains

Programmes Offered	Students On-Roll	Degrees Awarded
M. Tech	15	10
Ph. D	32	1

### R & D Activities

The Centre aims to achieve excellence in critical areas of education and research at par with international standards. Regional issues, especially Earthquakes,

Floods, Cyclones, Fires, Avalanche, Landslides, Cloudbursts, and their early warnings are other focus areas. The interdisciplinary nature of the Centre supports various research and consultancy projects through sponsored funding from Govt. of India and other National and International funding agencies.

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	03	98.00	13	131.76
Ongoing	14	662.815	35	312.77
Completed				

### Students Achievement:

- Ms. Chanda Kumari, has been received a travel and stay award for the Summer School at Lund University, Sweden
- Mr. Anandu P. and Mr. Manish Dewrari, has been awarded the prestigious Prime Minister Research Fellowship and are working on the development of indigenous early warning systems for natural hazards.
- Mr. Shubham Awasthi, has been received Best Paper Award in the International Conference on BDCC 2023 at IIT Kharagpur
- Mr. Shubham Awasthi, has been received DST-SERB International Travel Scheme (ITS) Grant to attend EGU General Assembly 2023 (EGU-2023), 23–28 April 2023, Vienna, Austria.

### Other Highlights

- The South Asia Alliance of Disaster Research Institutes (SAADRI), hosted at CoEDMM, got registered as a society, 'South Asia Alliance of Disaster Research Institutes Society', under the Society Registration Act, 1860. The SAADRI is a platform for alliance partners to seek collective contributions towards the regional need for disaster risk reduction and climate-change-induced risk resilience.

- Under National Education Policy (NEP) a new course 'Introduction to Climate Change' is introduced to the new UG curriculum of IIT Roorkee to make undergraduate students aware of climate change and the challenges associated with it. This would help get five nectar elements, 'Panchamrit', mentioned by the Hon. Prime Minister of India to deal with the challenge due to climate change through innovative and indigenous ideas generated by young researchers.

### Notable Activities in the Department

- To enhance capacity building in changing climate, CoEDMM has set up a new laboratory for vulnerability and risk assessment.

### Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal
Total	0	6	19	37

Several webinars/symposiums/workshops/conferences were organized, a few are given below

- 2-day "Technical Workshop on Earthquake Early Warning System" together with the National Science and Technology Center for Disaster Reduction Taiwan.

Field expedition & training program on "Disaster Management Action Frontiers"

- Forecasting and Early-Warning of Extreme Events and Disasters (FORESEED) high-end workshop (Karyashala)
- Disaster Risk Reduction on Museums and Heritage Safety in the Himalayan Region", and a photography Exhibition on "Hill Heritage at Risk"
- CoEDMM has been selected to organize the IDRiM 2023, the 13th International Conference of the International Society for INTEGRATED DISASTER RISK MANAGEMENT (IDRiM), Japan.
- On the occasion of International Day for Disaster Risk Reduction (IDRRR) and aligning with the activities of the 175th-year celebration of the Indian

Institute of Technology Roorkee, the Centre of Excellence in Disaster Mitigation and Management (CoEDMM) and the South Asian Association of Disaster Risk Institutes (SAADRI) jointly organized a field expedition & training program on "Disaster Management Action Frontiers".



Forecasting and Early-Warning of Extreme Events and Disasters (FORESEED) high-end workshop was conducted at the Centre of Excellence in Disaster Mitigation and Management (CoEDMM), IIT Roorkee, from 2nd - 8th January 2023. The Karyashala event is organized with the support of the Science & Engineering Research Board (SERB), a statutory body of the Department of Science & Technology (DST), Government of India, under the 'Accelerate Vigyan' scheme. A total of 15 Participants from different institutes across the country participated in the seven day high-end technical workshop on Weather Research and Forecasting Models as well as introduction to landslide early warning systems in the Indian Himalayan region.



The Centre of Excellence in Disaster Mitigation and Management (CoEDMM) and the Department of Architecture & Planning, Indian Institute of Technology Roorkee jointly organized a two-day workshop on



“Disaster Risk Reduction on Museums and Heritage Safety in the Himalayan Region”, and a photography Exhibition on “Hill Heritage at Risk” on 24th and 25th February 2023, at BSBE Auditorium, in collaboration with the Global Rescue Foundation, and with support from National Disaster Management Authority (NDMA). The workshop aimed to build disaster management capacity by training museum and heritage site managers and young professionals.



On the occasion of International Day for Disaster Risk Reduction (IDDRR) and aligning with the activities of the 175th-year celebration of the Indian Institute of Technology Roorkee, the Centre of Excellence in Disaster Mitigation and Management (CoEDMM) and the South Asian Association of Disaster Risk Institutes (SAADRI) jointly organized a field expedition & training program on “Disaster Management Action Frontiers” from 10 to 14 October 2022.





## Centre for Nanotechnology

Centre for Nanotechnology was established in December 2005 as one of the Centres of Excellence. The faculty members associated with the centre are involved in developing state-of-the-art facilities at the institute and vigorously pursuing interdisciplinary research on various current aspects of Nanoscience and Nanotechnology.

Total no. of Faculty	18 joint Faculty + 1 core Faculty
Adjunct/ Visiting –Teaching Faculty	Nil
No. of Post Doc. Fellows	3
No. of PMRF	5

## Academic Activities

Currently, the Centre offers M. Tech and Ph.D. programs in 'Nanotechnology'. The courses are designed to give the students an overview of the interdisciplinary domain of nanoscience and nanotechnology-starting from the fundamentals of the overlapping domains of physics, chemistry, biology, and material science of nanoscience to their applications. Advanced nanomaterial characterization techniques, simulation, and application in nanodevices and technology development-based courses are introduced. Recently, a new course (INT-301

Nanodevices) for UG students (open elective) has been designed. The course was designed in order to give a glimpse of nanotechnology-based devices in different sectors.

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	NA	NA
M. Tech	8	5
Ph. D	38	9

## R&D Activities

At present, the centre research activities are broadly divided into three major domains-Nanotechnology for (i) healthcare, (ii) energy, and (iii) environment. Albeit, the researchers at the centre are also involved in research activities in cutting-edge fields of nanotechnology like quantum technologies, nanoelectronics and optoelectronics, nanoscale simulation etc. The researchers are publishing in reputed journals and actively participating in international conferences.

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	4	65.86		
Ongoing	12	431.18		
Completed (last five year)	6	264.04		

## Notable Activities in the Department

- Dr. Gopinath's startup company Super Good Nano Pvt. Ltd.--Winner of Best startup Award in the Startup Expo 2022 on 25th November 2022 held at IIT Roorkee.
- Dr.Gopinath's interview on "Nanotechnology can provide affordable treatments" was published in the journal "Nature Medicine" 28, pages 630–632 (2022)- **(IF=87.241) (Q1)**

## Faculty Entrepreneurship Details

Super Good Nano Pvt. Ltd., a nano-biotechnology-based startup, is incubated at the Technology Incubation and Entrepreneurship Development Society (TIDES) Incubation centre at the Indian Institute of Technology

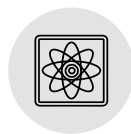


(IIT) Roorkee. The company is a proud recipient of the prestigious BIRAC-GYTI Award, the Best Startup Award winner in the Startup Expo-2022 IITR.

## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	IP Filed/ Granted
Total	2	3	31	75	4

Several webinars/symposiums/workshops/conferences were organized, including Nano Meet-2023:- One-day brainstorming session on future of nanoscience and nanotechnology.



## Centre for Photonics and Quantum Communication Technology (CPQCT)

The Center for Photonics and Quantum Communication Technology aims at carrying out frontier research with specific objectives including, but not limited to, the development of components, devices, and systems for photonics, quantum communication, and allied technologies. The Center also aims at creating skilled manpower required for the implementation and advancement of these technologies in industry and academia, which would be carried out by running relevant academic programs and courses.

Total no. of Faculty	Details
Joint Faculty	10
Adjunct/ Visiting – Teaching Faculty	02

## R&D Activities

Project Status	Total No. of Projects	Amount (Rs. in lacs)
Completed Projects	1	32.10
Ongoing Projects	3	137.48
New Projects	1	18.18

## Publication

	Paper in Conferences	Paper in Journal
Total	09	04

A few webinars/ symposiums/ workshops/conferences were organized, including XLV Symposium of Optical Society of India – a Conference on Optics, Photonics & Quantum Optics – COPaQ 2022





## Center for Transportation Systems

The aim of CTRANS is to promote multi-disciplinary research and education for manpower development in transportation systems encompassing all modes of Transport such as Road Transport, Non-motorized Transport(NMT), Rail Transport, Inland Water Transport, Air Transportation, Freight & Logistics Transport etc.

### Centre Objectives-

1. To promote multidisciplinary research on transportation systems.
2. To provide technical support to national projects related to the growth of Transportation System in the country.
3. Establishment of International Linkage for collaborative research in the frontier areas.
4. Creation of a Resource Centre for rapid dissemination of information and knowledge.

Total no. of Faculty	Details
Adjunct/ Visiting –Teaching Faculty	12+1
Adjunct/ Visiting –Teaching Faculty	02

## Academic Activities

Programmes Offered	Students On-Roll	Degrees Awarded
B. Tech	NA	NA
M. Tech	15 (8 new)	7
Ph. D	25 (2 new)	4

## R&D Activities

Project Status	Sponsored	Amount Rs. in lacs	Consultancy	Amount Rs. in lacs
New	1	27.8	0	0
Ongoing	1	55	0	0
Completed	0	0	2	10.62

## Major Facilities

- Channel Noise & Vibration Data Acquisition System- ₹50.69 lakhs

## Notable Activities in the Department

- CTRANS published 1st edition of the Newsletter.



CTTRANS is happy to publish the first edition of Newsletter. We are thankful to all the faculty members, scholars, students and stakeholders for providing usefull ideas, suggestions and support to bring this newsletter.

The major events and achievements which took place during the year 2022 have been listed in this newsletter. We aspire to bring two issues per year from 2023.

### INSIDE THIS ISSUE

- Events of CTRANS
- CTRANS in News
- Eminent Guest Interactions
- Conferences attended
- Journal Publications
- New Projects
- New faculty and staff
- Synergic, Industry-Academia event



### Progressive Transportation

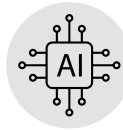
प्रगतिशील परिवहन  
Progressive Transportation is the new slogan for CTRANS. The slogan has been evolved through deliberations with all stakeholders. The slogan conveys the universal utility of transportation for the progress of the society.

CTTRANS is a Centre of excellence of IIT Roorkee in the area of Transportation and Infrastructure. The Centre aims to evolve a holistic approach to the study of transportation and its management systems. CTRANS is primarily a multi-disciplinary initiative working since 2005 with the collective participation of Engineers, Architects, Planners, Managers, Scientists and Researchers from all backgrounds.

CTTRANS promotes researches in sustainable transportation and mobility in all areas of transportation including Road Transport, Non-motorized Transport, Rail Transport, Inland Water Transport, Air Transportation, Freight & Logistics Transport, etc. Our endeavour is to bring meaningful research and professional support for Industries and Government Departments working in the field of transportation.



# School



## Mehta Family School of Data Science and Artificial Intelligence

The School is broadly organized into following discipline areas, and encourages inter-disciplinary studies. Data Science is a blend of various tools, algorithms, and principles, with strong mathematical and statistical basis, with the goal to visualize, discover, explain and predict hidden patterns from the raw data in an intelligent manner. Artificial intelligence systems demonstrate the following behaviors associated with human intelligence: planning, learning, reasoning, problem solving, knowledge representation, perception, motion, and manipulation and, to a lesser extent, social intelligence and creativity.

Several webinars/symposiums/workshops/conferences were organized, including Centre's Industry Day, Centre's Research Day



Total no. of Faculty	Details
Joint Faculty	22

## Academic Activities

The School has begun offering a full-fledged "BTech, MTech and Ph.D in data science and artificial intelligence" from this year. The faculty members of the School are offering executive education programs in Accelerators for Deep Learning

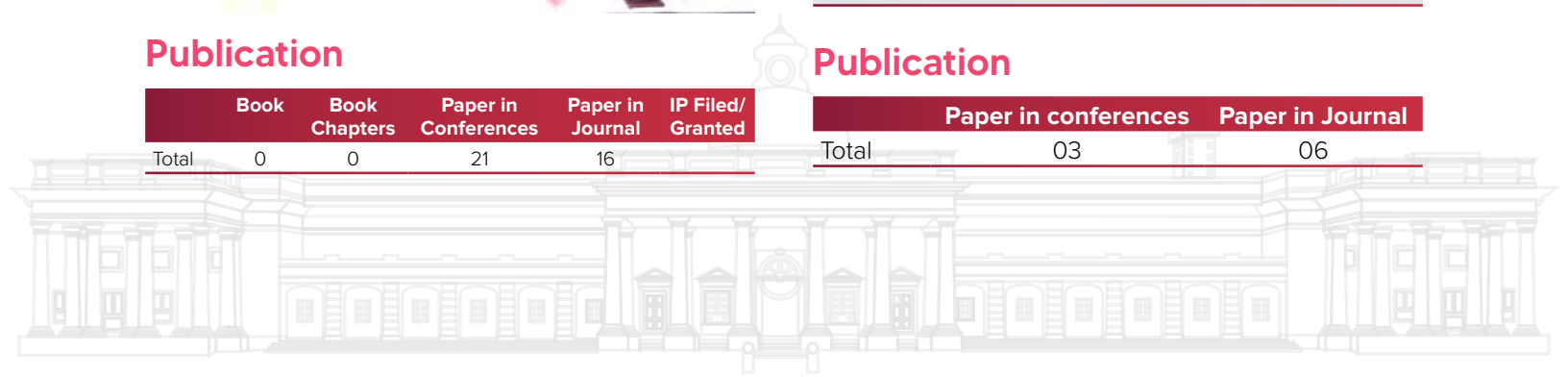
Programmes Offered	Students On-Roll
B. Tech	40
M. Tech	40
Ph. D	07

## Publication

	Book	Book Chapters	Paper in Conferences	Paper in Journal	IP Filed/Granted
Total	0	0	21	16	

## Publication

	Paper in conferences	Paper in Journal
Total	03	06



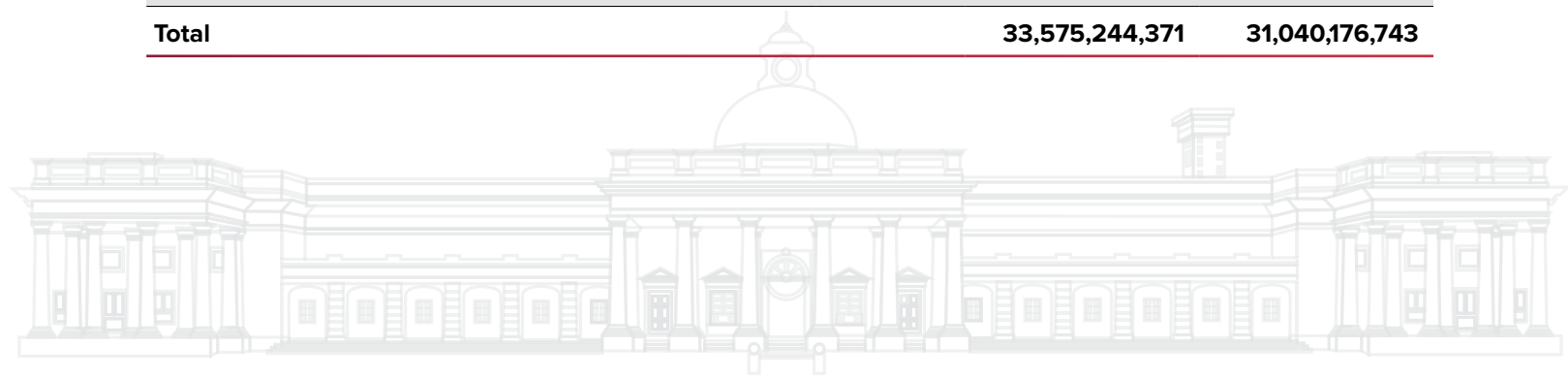
# Institute Account

- 1 Summary of Balance Sheet
- 2 Summary of Total Income & Expenditure
- 3 Details of MoE Expenditure
- 4 Details of Other Account
  - General Corpus Fund
  - Endowment Corpus Fund
  - Donations Received
  - Grant/Assistance Received from GOI

## Summary of Balance Sheet as at 31st March 2023

Amount in Rupees

Sources of Funds	Schedule	Current Year	Previous Year
Corpus/Capital Fund	1	3,623,224,000	2,892,322,216
Designated/Earmarked/Endowment funds	2	7,511,291,571	6,953,669,258
Current liabilities & Provisions	3	20,046,207,507	18,938,104,734
Un-Secured loan	3A	2,394,521,293	2,256,080,536
<b>Total</b>		<b>33,575,244,371</b>	<b>31,040,176,743</b>
<b>Application of Funds</b>			
<b>Fixed Assets</b>	4		
Tangible Assets		15,940,855,841	15,100,638,576
Intangible Assets		189,506,463	169,147,758
Capital Works-In-Progress		3,908,123,097	3,096,859,782
<b>Investments From Earmarked/ Endowment Funds</b>	5		
Long Term		6,451,417,269	5,208,504,743
Short Term			
<b>Investments - Others</b>	6	2,406,338,341	2,305,319,421
<b>Current Assets</b>	7	3,078,283,394	3,631,766,722
<b>Loans, Advances &amp; Deposits</b>	8	1,600,719,966	1,527,939,742
<b>Total</b>		<b>33,575,244,371</b>	<b>31,040,176,743</b>



## Summary of Total Income & Expenditure 2022-2023

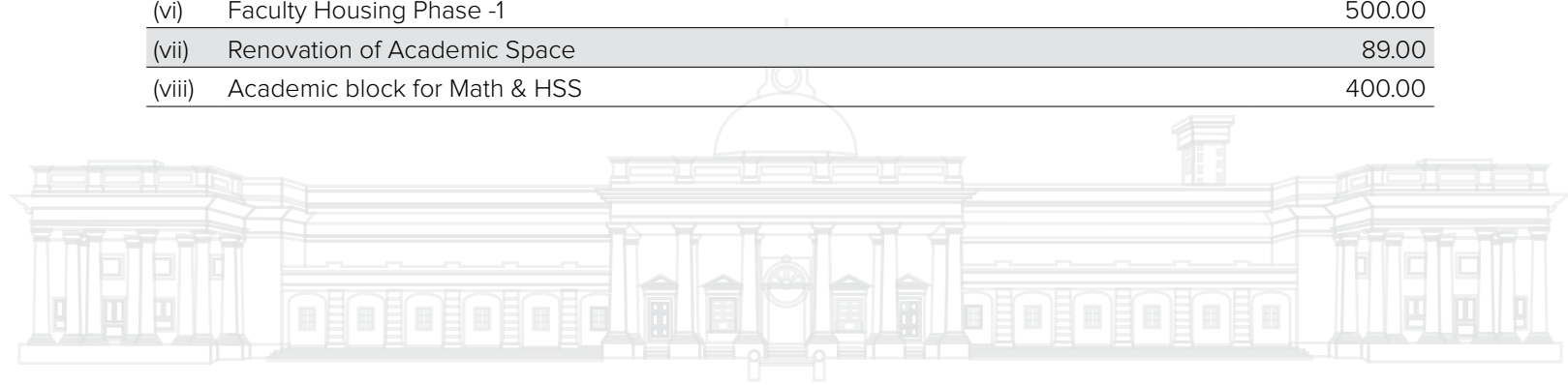
(Rs. in lakh)

Head of Accounts	Opening Balance	Allocation	Internal Receipts	Total Available fund	Expenditure during the year
MoE Main A/c	0.00	64864.81	7148.22	72013.03	72013.03
PM Research Fellowship	0.00	780.46	0.00	780.46	780.46
ASEAN Fellowship	0.00	46.04	0.00	46.04	0.00
UGC	9.92	78.25	0.27	88.44	78.46
CSIR	18.76	41.63	0.90	61.29	22.46
FEE	5197.06	0	17273.49	22470.55	19925.45
BRP	186.76	0	411.23	597.99	420.78
<b>Total</b>	<b>5412.50</b>	<b>65811.19</b>	<b>24834.11</b>	<b>96057.80</b>	<b>93240.64</b>

## Details of MoE Expenditure

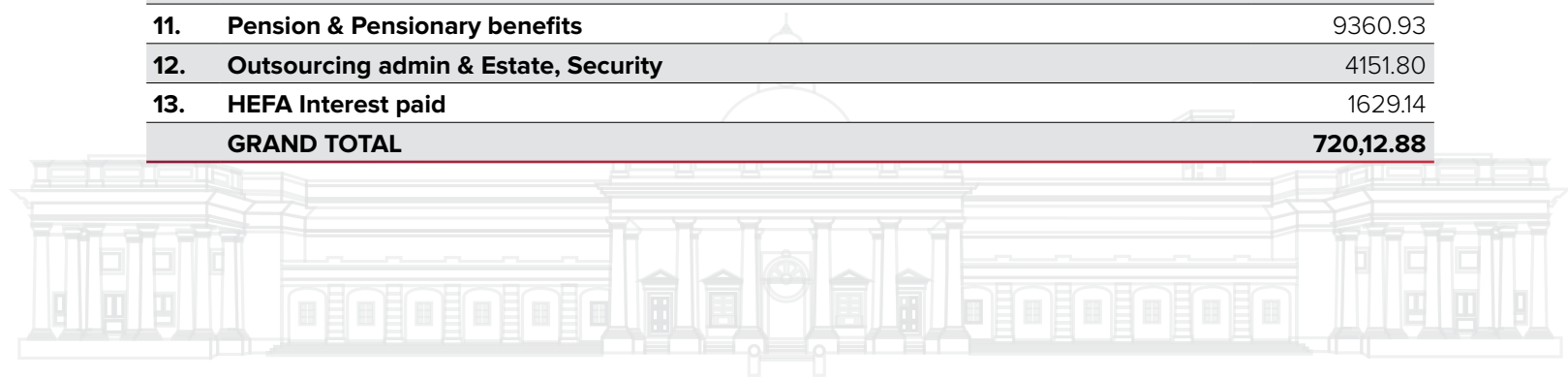
(Rs. in lakh)

Sl.	Head of Accounts	Expenditure 2022-23
<b>1.</b>	<b>Equipment</b>	
(i)	Replacement of obsolete equipment & modernization of laboratories	3273.25
(ii)	Equipment of new department/placement cell education Tech. Cell/EPBAX	34.17
(iii)	Office equipment/Automation	
	A few new offices	0
	Computerization of Adms. Functions	312.73
<b>2.</b>	<b>Up gradation of Computing facilities</b>	905.26
<b>3.</b>	<b>Up gradation of Networking &amp; Multimedia Facilities</b>	1423.15
<b>4.</b>	<b>Strengthening of library</b>	1543.62
<b>5.</b>	<b>Renovation/Extension of Buildings (including support services)</b>	
(i)	Furniture- (For Hostels, Departments, Admi offices etc.)	768.39
(ii)	Monitoring substation	128.83
(iii)	New Hostel Vigyan Kunj Roorkee (EWS)	2331.00
(iv)	Transit Accommodation	3.65
(v)	Renovation of Old hostel	33.00
(vi)	Faculty Housing Phase -1	500.00
(vii)	Renovation of Academic Space	89.00
(viii)	Academic block for Math & HSS	400.00



(Rs. in lakh)

Sl.	Head of Accounts	Expenditure 2022-23
(ix)	Roads for Roorkee /Saharanpur Campus	199.86
(x)	Renovation of Departments	96.76
(xi)	AC for Faculties in Roorkee & SRE Campus	592.96
(xii)	Sewerage System and STP Rke Campus	10.33
(xiii)	Sports Civil & Electric work	800.21
(xiv)	Mehta family school of DS&AI	5.90
(xv)	Wheel chair lifts	105.13
(xvi)	Renovation of Guest House	6.81
(xvii)	Greater NOIDA	10.99
	<b>TOTAL</b>	<b>135,74.96</b>
<b>6.</b>	<b>Establishment Expenses</b>	
(i)	Pay & Allowance	216,31.19
(ii)	OTA and Honorarium	11.26
(iii)	LTC	2,27.02
(iv)	Children Education Allowance	1,32.62
(v)	Medical Expenses	11,26.49
(vi)	Professor Development Allowance (PDA)	4,15.65
(vii)	Reimbursement (Tele-Internet)	56.88
(viii)	Retirement benefit	21,57.73
	<b>TOTAL</b>	<b>257,58.84</b>
<b>7.</b>	<b>Academic and Educational Expenses</b>	
(i)	Departmental Operating Costs	2076.64
(ii)	Contingency	302.93
(iii)	Student amenities /course/ Other Educational Expenses	586.84
	<b>TOTAL</b>	<b>29,66.41</b>
<b>8.</b>	<b>Assistantship/ Fellowship/ Merit-cum-Means</b>	7591.36
<b>9.</b>	<b>Maintenance Expenses</b>	
(i)	Estate & Electric Maintenance	3670.82
(ii)	Water Power & Fuel/Electricity	2035.23
(iii)	Property Tax	24.48
(iv)	Repair & Maintenance of Equipment/Furniture/Vehicle	75.02
	<b>TOTAL</b>	<b>58,05.55</b>
<b>10.</b>	<b>Other Expenses</b>	1173.89
<b>11.</b>	<b>Pension &amp; Pensionary benefits</b>	9360.93
<b>12.</b>	<b>Outsourcing admin &amp; Estate, Security</b>	4151.80
<b>13.</b>	<b>HEFA Interest paid</b>	1629.14
	<b>GRAND TOTAL</b>	<b>720,12.88</b>



## Details of Other Account

### General Corpus Fund

(Rs. in lakh)

Description	Amount
Opening Balance (Including FDR)	476,61.51
Receipts/Trfd from various A/c	42,91.65
Payments (Including Loan)	45,96.96
Closing Balance (Including FDR)	473,56.20

### Endowment Corpus Fund

(Rs. in lakh)

Description	Amount
Opening Balance (Including FDR)	65,24.27
Receipts/Trfd from various A/c	23,65.81
Payments (Including Loan)	7,92.98
Closing Balance (Including FDR)	80,97.11

### Donation Received

(Rs. in lakh)

Scheme/Programmes	Amount Received
Donation Received	18,64.41
<b>TOTAL</b>	<b>18,64.41</b>

### Grant/Assistance Received from GOI

(Rs. in lakh)

Scheme/Programmes	Amount received
DST	89.56
ICMR	27.87
EDCIL	3.28
AICTE	9.11
DBT	46.14
<b>TOTAL</b>	<b>175.96</b>



# Organization



**Prof. Kamal Kishore Pant**  
Director



**Prof. U. P. Singh**  
Deputy Director



**Prof. D.S. Arya**  
Dean, Administration



**Prof. Partha Roy**  
Dean, Resources and Alumni  
Affairs



**Prof. M L Sharma**  
Dean Finance & Planning



**Prof. A.K. Sharma**  
Dean, Faculty Affairs



**Prof. Akshay Dvivedi**  
Dean, Sponsored Research  
& Industrial Consultancy



**Prof. Mukesh Kumar Barua**  
Dean, Students' Welfare



**Prof. Umesh Kr. Sharma**  
Dean, Infrastructure



**Prof. Apurbba Kumar  
Sharma**  
Dean, Academic Affairs



**Prof. Vimal Chandra  
Srivastava**  
Dean, International Relations



**Prof. Sujay Chattopadhyay**  
Dean, Saharanpur Campus



**Mr. Prashant Garg**  
Registrar





## Heads of Departments

- **Prof. Gaurav Raheja**  
Department of Architecture and Planning
- **Prof. Millie Pant**  
Department of Applied Mathematics and Scientific Computing
- **Prof. Pravindra Kumar**  
Department of Biosciences and Bioengineering
- **Prof. Prakash Biswas**  
Department of Chemical Engineering
- **Prof. Rama Krishna Peddinti**  
Department of Chemistry
- **Prof. Praveen Kumar**  
Department of Civil Engineering
- **Prof. Sugata Gangopadhyay**  
Department of Computer Science and Engineering
- **Prof. Inderdeep Singh**  
Department of Design
- **Prof. Manish Shrikhande**  
Department of Earthquake Engineering
- **Prof. Anand Joshi**  
Department of Earth Sciences
- **Prof. Mukesh Kr. Pathak**  
Department of Electrical Engineering
- **Prof. N. P. Pathak**  
Department of Electronics and Communication Engineering
- **Prof. S.P. Singh**  
Department of Humanities and Social Sciences
- **Prof. Brijesh Kumar Yadav**  
Department of Hydrology
- **Prof. M.K.Singhal**  
Department of Hydro and Renewable Energy
- **Prof. Usha Lenka**  
Department of Management Studies
- **Prof. Premananda Bera**  
Department of Mathematics
- **Prof. Andallib Tariq**  
Department of Mechanical and Industrial Engineering
- **Prof. B.S. Sundar Daniel**  
Department of Metallurgical and Materials Engineering
- **Prof. Dharm Dutt**  
Department of Paper Technology
- **Prof. Gaurav Manik**  
Department of Polymer and Process Engineering
- **Prof. Vipul Rastogi**  
Department of Physics
- **Prof. Ashish Pandey**  
Department of Water Resources Development and Management



# Appendix

## Institute Hospital

The Institute Hospital at IITR had tirelessly providing medical services during the pandemic as well as been actively pursuant in improving the healthcare infrastructure. The institute had arranged for COVID-19 Vaccination (Covishield/Covaxin) of Regular /Retired Employees of IIT Roorkee and their dependents, through Vaccination Camps under supervision of CMO, Haridwar and Chief Medical Superintendent, Civil Hospital Roorkee. These vaccination camps have been immensely beneficial to the IITR fraternity.

In view of the pandemic, the institute had established Covid Care Centre at Ganga Bhawan Hostel of IIT Roorkee. The Medical Officers of the Institute Hospital provided their services in the centre under duty roster for 24 x7. The centre was under direct supervision of the CMO, Haridwar and Chief Medical Superintendent, Civil Hospital Roorkee.

The institute has appointed two General Duty Medical Officers, has facilitated the clinical and biochemical tests for the patients at Pathology unit by procuring a number of clinical equipment like Semi Auto Bio Chemistry Analyser, ESR Analyser etc.

One Microwave Diathermy machine, One Short Wave Diathermy machine, One Combination Therapy machine, One Interferential Therapy machine, One TENS, and Two Traction machines were procured and installed in the Physiotherapy Unit of the hospital for the benefit of patients. Four Fowler beds, One OT Table and One Horizontal Autoclave were procured and Installed in the Indoor of the Hospital. The overall Hospital infrastructure has been improved by installation of more Air conditioners, CCTV Camera

The Institute Hospital has entered into agreements and has got renewed agreements with several other Healthcare units for facilitating healthcare and medical services to the Campus residents. Some recently renewed MoU are with M/s Artemis Hospital, Gurugram, M/s Arogyam Hospital, Bhagwanpur, Roorkee, M/s Pushpawati Singhania Hospital & Research Institute,

Delhi, M/s Shri Swami Bhumanand Hospital, Haridwar. New MoU has been signed with M/s Singh Pathology Lab, Roorkee. All these hospitals will provide treatment to the referred patients from IITR at CGHS (Central Govt. Health Scheme) rates.

## Impactful Initiatives

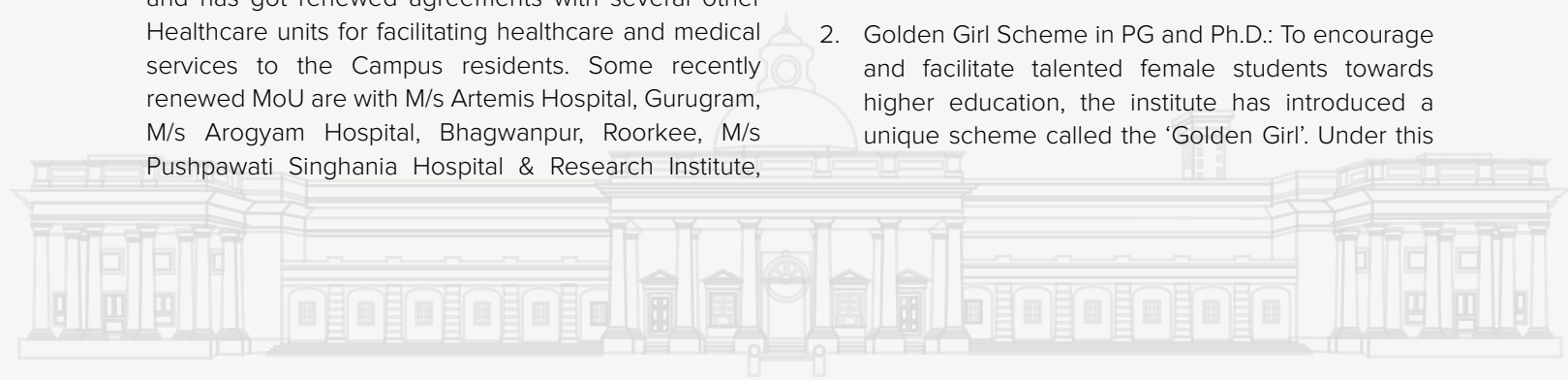
### Diversity and Inclusion

The Institute has always recognized the importance of inclusion and diversity in higher education and research by ensuring equal opportunities for all. "GATI" is an innovative Pilot Project launched by the Department of Science and Technology (DST). GATI seeks to change institutions by increasing their awareness of the positive impact that gender advancement can create. I am excited and very happy to share that IIT Roorkee has made it to the top 5 GATI achievers in the institutes of the National Importance Category. In total, from the 30 GATI pilot institutions which were initially selected to participate in this joint program of DST and British Council, 12 have received GATI achiever recognition. IIT Roorkee has always demonstrated a strong commitment to societal causes, recognizing its role as a premier educational institution in driving positive change. Following are few of the contributions by IIT Roorkee towards being the forebearers of Diversity and Inclusion in the society.

### Other Initiatives

In line with the NEP's fundamental principles of Inclusivity/ Women Empowerment, the following schemes have been introduced in the Academic Year 2022-23:

1. Application fee waiver for girl students: Application fee for the female applicants for applying in the Masters/Doctoral programs offered by the Institute has been waived off.
2. Golden Girl Scheme in PG and Ph.D.: To encourage and facilitate talented female students towards higher education, the institute has introduced a unique scheme called the 'Golden Girl'. Under this



scheme, the first rank holder (Gold Medalist) female candidates from the top 50 NIRF ranked institutes of the country shall be offered admission only through interview at the institute. Such candidate will be admitted into the Masters and PhD programs of the institute with full institute assistantship and there will not be any requirement of qualifying in All-India level exam like GATE/JRF etc.

3. Zero Hour: The institute has been known for providing good care to the needy students and faculty members. In order to reduce the disparity with respect to language, knowledge etc., the institute has created a unique interaction window for the students and faculty members. In this window, called 'Zero Hour', faculty members engage the needy students every week where they interact separately in vernacular languages to bridge language barriers, if any, and help them sorting out their difficulties.

## Unnat Bharat Abhiyan:

The institute actively engages with various social issues and strives to make a meaningful impact on society. Through being a platform to implement government's initiatives like the Unnat Bharat Abhiyan, IIT Roorkee leverages its knowledge and expertise to address rural development challenges and promote sustainable growth in villages.

Unnat Bharat Abhiyan envisions a transformation in the rural development processes by leveraging knowledge institutions to help build the architecture of an inclusive India. The idea is to enable the faculty and students of HEIs to work with the people of rural India in identifying development challenges and evolving appropriate solutions for accelerating the sustainable growth of villages.

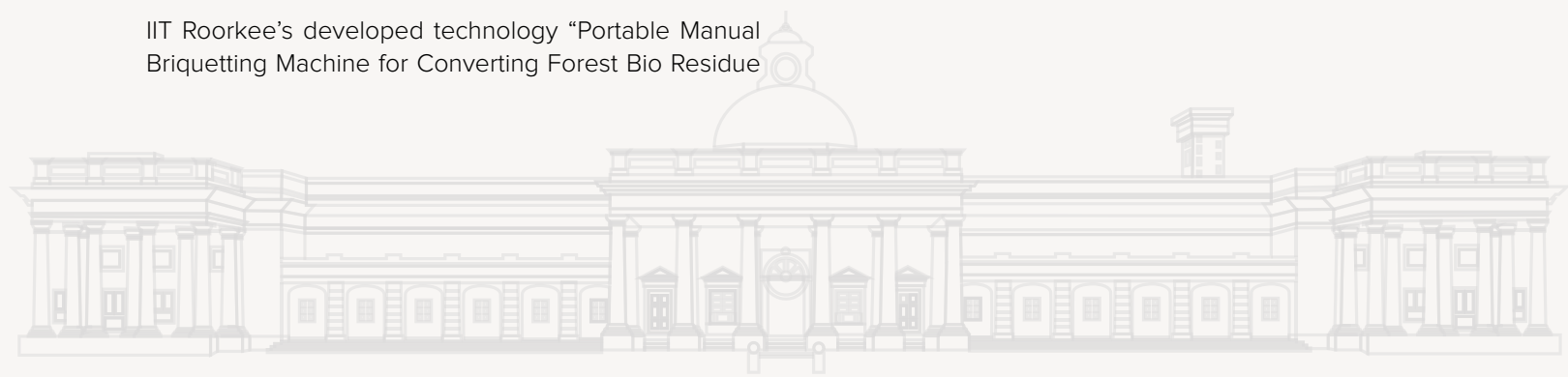
IIT Roorkee's developed technology "Portable Manual Briquetting Machine for Converting Forest Bio Residue

to Low-Cost Energy Briquettes" had been selected for demonstration in UNNATI" (Unnat Bharat Abhiyan Networking for National Atmanirbhar Technological Intervention) Mahotsav & Expo.

IIT Roorkee is committed on developing and promoting sustainable methods and technologies in a way that they are integrated with daily life, of not only employees but of all the residents of the campus. With an eye on moving towards sustainability and pollution reduction, we had observed the June 15th as a petrol/diesel-based vehicle-free day on campus.

**Anushruti Academy for the Deaf**, dedicated solely to the deaf or hearing-impaired children, was established in our campus in 1989. It is a social initiative of I.I.T Roorkee, a unique feature being the only special school in a premium Technology institute. IITR alumni are a major part of the support and success of this school. Six new classrooms are being constructed on the First Floor from the CSR grant of National High Speed Rail Corporation Limited (NHSRCL). Recently, Anushruti in collaboration with Skill & Entrepreneurship Development Institute (SEDI), organized an introductory program on "Real Skills & Real Jobs" for the students and their parents to create awareness about the possibilities on vocational training and employment.

**ASMITA** stands for A Skill Management, Improvement and Training Academy for women. Under the skill management part, ladies of the campus create work opportunities for underprivileged fully skilled girls and women, under the skill improvement part, we train semi-skilled girls and women as interns, under the skill training part, they train unskilled girls and women in Stitching, Embroidery, and other skills. ASMITA also provides free education to women and girls of the less fortunate classes of society



# Finance Committee

## **Padma Shri Dr. B.V.R. Mohan Reddy**

Chairperson, Board of Governors, IIT Roorkee &  
Executive Chairman, Cyient Limited, Hyderabad

Chairperson

## **Prof. Ajit K. Chaturvedi**

Director, Indian Institute of Technology Roorkee

Member  
upto. 12.10.2022

## **Prof. K.K. Pant**

Director  
Indian Institute of Technology Roorkee

Member  
w.e.f. 12.10.2022

## **Additional Secretary (TE)**

Ministry of Education  
Government of India  
Department of Higher Education  
New Delhi

Member

## **Additional Secretary & Financial Advisor**

Ministry of Education  
Government of India  
Department of Higher Education  
New Delhi

Member

## **Principal Secretary to Government of Haryana**

Technical Education Department  
Chandigarh

Member

## **Prof. U.P. Singh**

Department of Chemistry  
Indian Institute of Technology Roorkee

Member

## **Dean, Finance & Planning (Ex-Officio)**

Indian Institute of Technology Roorkee

Member

## **Prof. M. Parida**

upto 19.09.2022  
Deputy Director  
Indian Institute of Technology Roorkee

Permanent Invitee

## **Sri Prashant Garg**

Registrar  
Indian Institute of Technology Roorkee

Secretary



# Building & Works Committee

**Prof. Ajit K. Chaturvedi**

Director  
Indian Institute of Technology Roorkee

Chairman  
upto 12.10.2022

**Prof. K.K. Pant**

Director  
Indian Institute of Technology Roorkee

Chairman  
w.e.f. 12.10.2022

**Prof. M. Parida**

Deputy Director  
19.09.2022  
Indian Institute of Technology Roorkee

Member  
upto

**Prof. U.P. Singh**

Department of Chemistry  
Indian Institute of Technology Roorkee

Member  
w.e.f. 12.12.2022

**Dean, Infrastructure**

Indian Institute of Technology Roorkee

Member

**Er. K. Muruganand**

Superintending Engineer (Civil)  
Oil & Natural Gas Corporation -5  
Vasant Kunj, New Delhi

Member  
upto 31.12.2022

**Er. Anupam Singh**

Superintending Engineer (T&C)  
Power Transmission Corp. Ltd.,  
Government of Uttarakhand

Member  
upto 31.12.2022

**Sri Surendra Singh**

w.e.f. 01.01.2023  
Ex-Additional Director General, CPWD  
Flat No.B604, Prince Apartment  
54 IP Extension, Patpatganj,  
Delhi - 110092

Member

**Sri Rakesh Gupta**

Ex-Sr. Executive Director,  
NBCC (India) Ltd.  
B-603 Vidyut Apartment  
Plot N 81 IP Extension Patpatganj  
Delhi – 110092

Member  
w.e.f. 01.01.2023

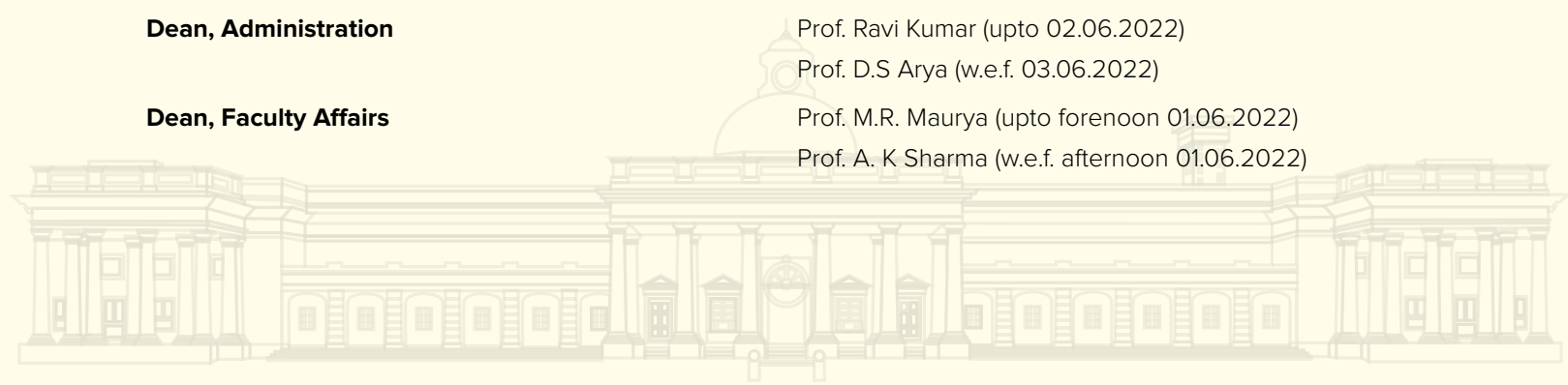


<b>Prof. C.S.P Ojha</b> Department of Civil Engineering Indian Institute of Technology Roorkee	Member
<b>Prof. Mukesh Kumar Pathak</b> Department of Electrical Engineering Indian Institute of Technology Roorkee	Member upto 31.12.2022
<b>Prof. Yogendra Singh</b> Department of Earthquake Engineering Indian Institute of Technology Roorkee	Member upto 31.12.2022
<b>Prof. Akhil Upadhyay</b> Department of Civil Engineering Indian Institute of Technology Roorkee	Member w.e.f. 01.01.2023
<b>Prof. Barjeev Tyagi</b> Department of Electrical Engineering Indian Institute of Technology Roorkee	Member w.e.f. 01.01.2023
<b>Institute Engineer</b> Indian Institute of Technology Roorkee	Member
<b>Dean, Finance &amp; Planning</b> Indian Institute of Technology of Roorkee	Special Invitee
<b>Sri Prashant Garg</b> Registrar Indian Institute of Technology Roorkee	Secretary

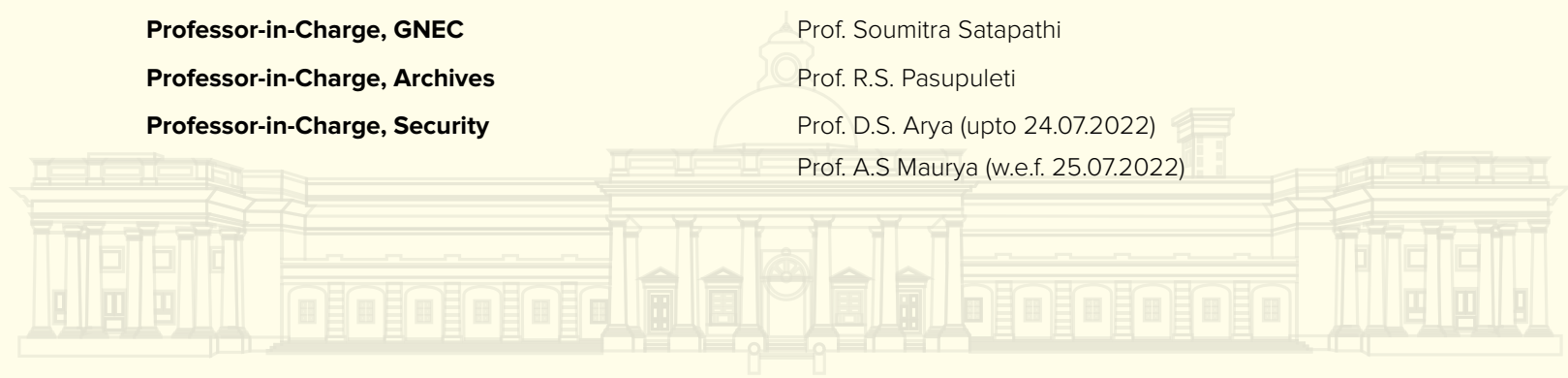
# Administration / Officers

(w.e.f. 1.4.2022 to 31.3.2023)

<b>Chairman, Board of Governors</b>	Shri B.V.R. Mohan Reddy
<b>Director</b>	Prof. Ajit K. Chaturvedi (upto forenoon 12.10.2022) Prof. Kamal Kishore Pant (w.e.f. 12.10.2022)
<b>Deputy Director</b>	Prof. M. Parida (upto 19.09.2022) Prof. Udai Pratap Singh (w.e.f. 12.12.2022)
<b>Dean, Administration</b>	Prof. Ravi Kumar (upto 02.06.2022) Prof. D.S Arya (w.e.f. 03.06.2022)
<b>Dean, Faculty Affairs</b>	Prof. M.R. Maurya (upto forenoon 01.06.2022) Prof. A. K Sharma (w.e.f. afternoon 01.06.2022)



<b>Dean, Sponsored Research and Industrial Consultancy</b>	Prof. M. Shrikhande (upto 06.06.2022) Prof. Akshay Dvivedi (w.e.f. 07.06.2022)
<b>Dean, Academic Affairs</b>	Prof. A.K Sharma
<b>Dean of Students Welfare</b>	Prof. M.K Barua
<b>Dean, Finance &amp; Planning</b>	Prof. M.L. Sharma
<b>Dean, Resources and Alumni Affairs</b>	Prof. B.R. Gurjar
<b>Dean, Infrastructure</b>	Prof. U.K Sharma
<b>Dean, International Relations</b>	Prof. P. Arumugam (upto 31.01.2023) Prof. Vimal Chandra Srivastava (w.e.f. 01.02.2023)
<b>Dean, Saharanpur Campus</b>	Prof. Sujay Chattopadhyay
<b>Associate Dean Innovation and Incubation (ADII)</b>	Prof. Rajat Agrawal
<b>Associate Dean Faculty Affairs</b>	Prof. P. Sumathi
<b>Associate, DoSW (Bhawans &amp; Mess)</b>	Prof. M.A Iqbal
<b>Associate, DoSW (Students Wellness)</b>	Prof. Kiran Ambatipudi (upto 28.02.2023) Dr. Avlokita Agarwal (w.e.f. 01.03.2023)
<b>Associate, DOSW (Students Activities)</b>	Prof. A.K. Gourishetty (upto 02.01.2023) Prof. M.V. Sunil Krishna (w.e.f. 03.01.2023)
<b>Assoc. Dean Corporate Interaction (ADCI)</b>	Prof. Akshay Dvivedi (upto 24.07.2022) Prof. Sai Ramudu Meka (w.e.f. 25.07.2022)
<b>Associate Dean, Infrastructure (Electrical &amp; AC)</b>	Prof. Anubrata Dey
<b>Associate Dean, Infrastructure (Civil)</b>	Prof. Rajib Chowdhury (upto 16.05.2022) Prof. E. Rajasekar (w.e.f. 17.05.2022)
<b>ADOAA (IT Systems &amp; Admission)</b>	Prof. A. Swaminathan
<b>ADOAA (Curriculum)</b>	Prof. .C.N Ramachandran
<b>ADOAA (Evaluation)</b>	Prof. Bhavesh Bhalja
<b>Professor -in-Charge, Transportation</b>	Prof. Sudhakar Subudhi
<b>Professor-in-Charge, Training and Placement</b>	Prof. Vinay Sharma (upto 24.07.2022) Prof. Kaushik Pal (w.e.f. 25.07.2022)
<b>Professor-in-Charge, Guest House</b>	Prof. Yogesh Kumar Sharma
<b>Professor-in-Charge, Safety</b>	Prof. Vishal Kumar (upto 05.01.2023) Prof. Amit Dhiman (w.e.f. 06.01.2023)
<b>Professor-in-Charge, GNEC</b>	Prof. Soumitra Satapathi
<b>Professor-in-Charge, Archives</b>	Prof. R.S. Pasupuleti
<b>Professor-in-Charge, Security</b>	Prof. D.S. Arya (upto 24.07.2022) Prof. A.S Maurya (w.e.f. 25.07.2022)



<b>Professor-in-Charge, STEP/TIDES</b>	Prof. S.K. Manhas
<b>Professor-in-Charge, Inclusion and Accessibility Services (IAS)</b>	Prof. Gaurav Raheja
<b>Coordinator, Intellectual Property Rights Cell</b>	Prof. Rajat Agrawal
<b>Coordinator, Incubation Centre for Construction Technology in Building and Roads</b>	Prof. Bhupinder Singh
<b>Chairman, Hindi Cell</b>	Prof. Manoj Tripathy (upto 17.07.2022) Prof. K.M Singh (w.e.f. 18.07.2022)
<b>Chief Vigilance Officer</b>	Prof. S.P. Singh (26.09.2022) Prof. Tanuja Srivastava (27.09.2022)
<b>Liaison Officer for SC/ST</b>	Prof. Prakash Biswas
<b>Liaison Officer (OBC)</b>	Prof. J.P. Narayan
<b>Nodal Public grievance Officer for Centralized Public Grievance Redress and Monitoring System</b>	Prof. C.S.P Ojha
<b>Students' Ombudsperson</b>	Prof. B.K. Mishra

## Chief Wardens & Wardens/Faculty Advisor

<b>Azad Bhawan</b>	Prof. Debasis Banerjee (ChW) Prof. Uaday Singh (W) Prof. D.B. Karunakar (Wel. W)
<b>Cautley Bhawan</b>	Prof. Champoungam (ChW) Prof. Tarun Sharma(W) Prof. D.B. Karunakar(Wel. W)
<b>Ganga Bhawan</b>	Prof. Ankik Kumar Giri (ChW) Prof. Gaurav Sharma(W) Prof. Pradeep Srivastava (Wel. W)
<b>Govind Bhawan</b>	Prof. Pratap Mohanty (ChW) Prof. Pradeep Srivastava (Wel. W)
<b>Jawahar Bhawan</b>	Prof. Ravindra Pandey(ChW) Prof. Basant Yadav(W) Prof. Sohom Chakrabarty (Wel. W)





**Kasturba Bhawan**

Prof. Rishman Jot Kaur Chahal(ChW)  
Prof. Sarbani Banerjee (W/Wel. W)

**Vigyan Bhawan (Girls)**

Prof. Pushpa Choudhary(ChW)  
Prof. Swastika Banerjee (W)

**Vigyan Bhawan (Boys)**

Prof. Kusum Deep(Wel. W)  
Prof. Manish K. Asthana(ChW)  
Prof. Amit Bhosale (W)

**Radha Krishnan Bhawan**

Prof. D.B. Karunakar (Wel. W)  
Prof. Varun Sharma (ChW)  
Prof. Shubhajit Sadhukhan(W)

**Rajendra Bhawan**

Prof. Sohom Chakrabarty (Wel. W)  
Prof. D. Bharat (ChW)  
Prof. S.P. Pradhan (W)  
Prof. Ashish Yadav (W)  
Prof. Sohom Chakrabarty (Wel. W)

**Rajiv Bhawan**

Prof. Puneet Gupta (ChW)  
Prof. Siddhartha Khare (W)  
Prof. Pradeep Srivastava (Wel. W)

**Ravindra Bhawan**

Prof. Sourabh Arora (ChW)  
Prof. Akhilesh Kumar Mishra (W)  
Prof. Pradeep Srivastava (Wel. W)

**Sarojini Bhawan**

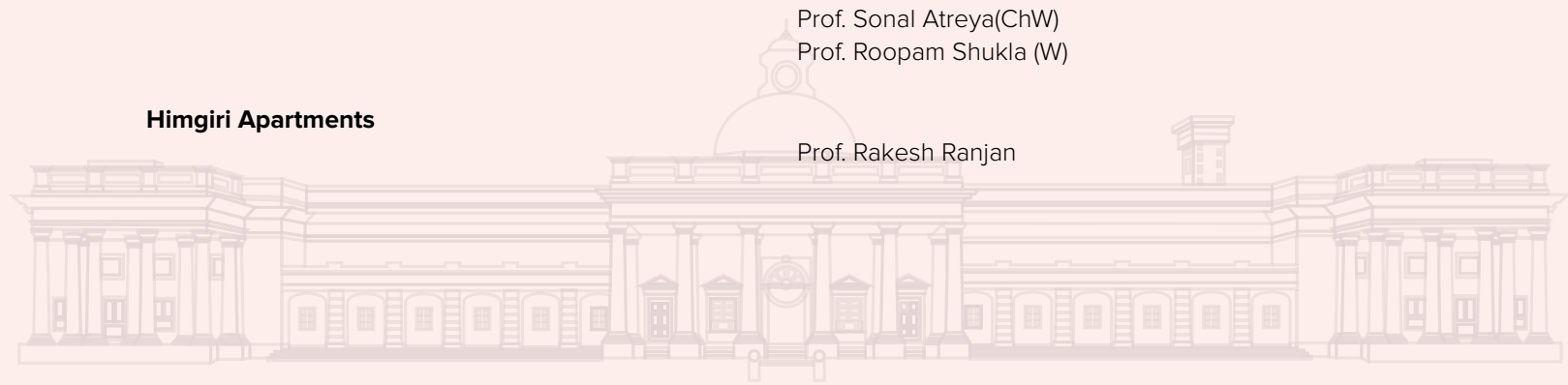
Prof. Harshit Sosan Lakra (ChW)  
Prof. Aparajita Singh (W)  
Prof. Sarbani Banerjee (Wel. W)

**Himalaya Bhawan**

Prof. Sonal Atreya(ChW)  
Prof. Roopam Shukla (W)

**Himgiri Apartments**

Prof. Rakesh Ranjan



**K.I.H., A.N.K. & Married Hostels (GP,MRC,DSB,Azad Wing & QRST Block, Vikas Nagar)**

Prof. Thanga Raj Chelliah (ChW)

Prof. Kusum Deep (Wel. W)

**Malviya Bhawan & Indira Bhawan, SRE Campus**

Prof. Millie Pant (ChW)

Prof. Pradip K. Maji (W)

Prof. Sham Sunder (Wel. W)

**\*(ChW)-Chief Warden, (W)-Warden, (Wel.W)-Wellness Warden****Faculty Advisor, Cultural Society/Spic****Macay/Cinema Club**

Prof. Meenakshi Rawat

**Faculty Advisor, NCC & NSS**

Prof. Diptimayee Nayak

**Faculty Advisor, Himalayan Explorer  
Club**

Prof. Ajanta Goswami

**Chairman, Sports Council (ISC)**

Prof. Nagendra Kumar

**Faculty Advisor, Sports**

Prof. P. Vinod

**Nominee of Director**

Prof. Bhanu Prakash Vellanki

**Faculty Advisor, Cultural, SRE Campus**

Prof. Saurav Kumar Sasmal

**Faculty Advisor, Sports, SRE Campus**

Prof. Gaurav Manik



# Administrative and Other Staff

## Registrar

Shri Prashant Garg

## Finance Officer

Shri G.K. Rastogi

## Joint Registrar

Dr. Shyam Narayan

Dr. Suman Kumar (On Lien at JNU, New Delhi)

## Dy. Registrars

Dr. Sheeba Ramola

Shri Abhishek Kumar

Shri S.K. Jainth (On Deputation at Ministry of Labour & Employment, New Delhi)

## Assistant Registrar

Shri Rajkumar Sharma

Ms. Bibi M. Barbhuiya

Shri D.K. Toppo

Shri Jain Singh

Shri Lalit Kumar

Shri Jitendra Dimri

Maj. (Retd.) Reeti Upadhyay

Shri B.S. Meena

Shri Lokesh Verma

Dr. Manoj Bhatt

Shri V. Vijayaraj

Shri Mahavir Singh

Shri Yashpal

Shri Jyoti Gurung

Smt. Chitra Maini

## Institute Works Department

### Institute Engineer

Shri Ajay Kumar Sharma

### Institute Architect

Shri Bhavneesh Lal



**Executive Engineer**

Shri Nepal Singh  
 Shri A.K. Barnwal  
 Shri Trilok Nath Tiwari  
 Shri Anshul Pal

**Assistant Executive Engineer**

Shri P.K. Dauhare  
 Shri O.A. Verma  
 Shri N.S. Rana  
 Shri Neeraj  
 Shri Mayur Sharma  
 Shri Jitendra Meena

**Mahatma Gandhi Central Library**  
**Chairman, Library Advisory Committee**

Prof. R.K. Peddinti (upto 22.05.2022)  
 Prof. Mahendra Singh (w.e.f. 23.05.2022)

**Librarian**

Dr. C. Jayakumar

**Deputy Librarian**

Shri Sanjeev Kumar Sunny

**Assistant Librarian**

Shri A.K. Sharma  
 Shri Ramniwas Soni  
 Dr. Rimai Atonring  
 Shri Sakhawat Hussain

**Hospital****Chairman/Chairperson, Hospital Advisory Committee**

Prof. R. N. Dubey (upto 31.12.2023)  
 Prof. Indra Vir Singh (w.e.f. 01.01.2023)

**Chief Medical Officer**

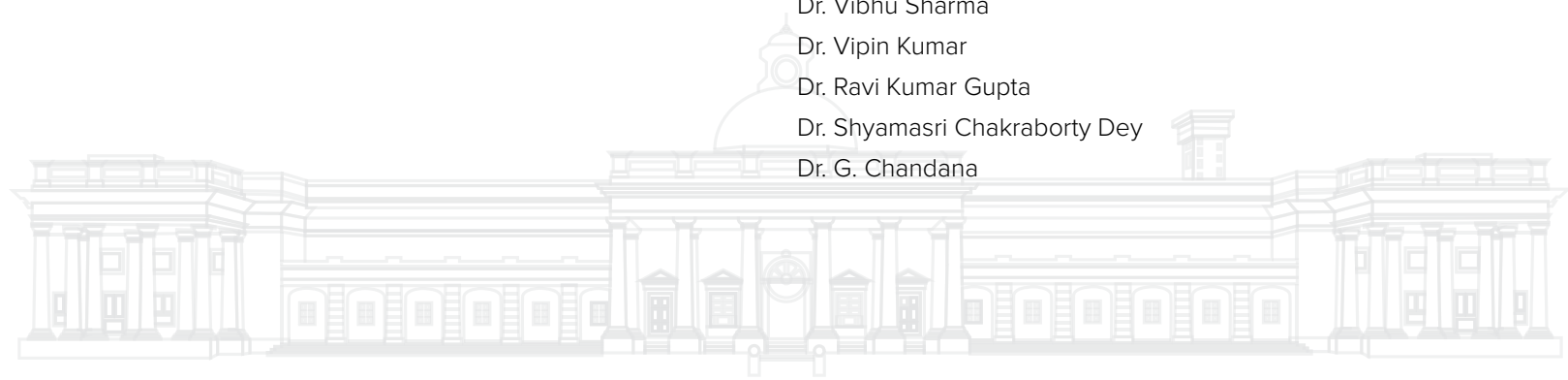
Dr. M.K Jha

**Institute Medical Officer**

Dr. (Smt.) Vandana Suhas Khobragade  
 Dr. (Mrs.) Anjula Roy  
 Dr. Rao Farman Khan  
 Dr. Alok Anand  
 Dr. Jeetinder Singh

**General Duty Medical Officer**

Dr. Anant Choudhary  
 Dr. Vaishali Bharadwaj (upto 01.10.2022)  
 Dr. Vibhu Sharma  
 Dr. Vipin Kumar  
 Dr. Ravi Kumar Gupta  
 Dr. Shyamasri Chakraborty Dey  
 Dr. G. Chandana



# Institution of New Awards/ Scholarships

The following awards/scholarships have been instituted with contributions from Alumni and Corporates to recognize and encourage the students to excel in various disciplines:

## A. Awards

- 1) Shri Hari Chand Nagalia Gold Medal
- 2) Smt. Prem Lata Nagalia Gold Medal
- 3) Shri Suresh Chandra Kapoor Gold Medal
- 4) Mrs. Mavis Bertha Wilkinson Gold Medal
- 5) Shri Jagdish Narain Saxena Gold Medal
- 6) Smt. Sukh Devi Kulshreshtha Gold Medal
- 7) Mr. Bevan Ross Wilkinson Gold Medal
- 8) Frau Odillie Schiffer Gold Medal
- 9) Smt. Lalit Kishori Gold Medal
- 10) Frau Gertrude Felden Gold Medal
- 11) Shri Jiya Lal Kulshreshtha Gold Medal
- 12) Alphaverse award
- 13) Best B.Tech. Project award in Electrical Engineering Department
- 14) ENCORE Awards

## B. Scholarships

- 1) Batch 1980-Girl Fee Waiver Partial Scholarship
- 2) HORIBA Talent Hunt Scholarship
- 3) Shanti Swarup Gupta Scholarship
- 4) Adarsh Kumar Pradhan MCM Scholarship
- 5) Arvind Kumar Jain MCM Scholarship
- 6) Sarojinites for Sarojinites MCM Scholarship
- 7) Sampath and Ayengar Scholarship
- 8) Shri Gyanesh Kumar Saxena MCM Scholarship
- 9) Shri Rakesh Kumar Saxena MCM Scholarship
- 10) Dr. Sarojini Devi Bisaria MCM Scholarship
- 11) Dr. Jagdish Sahai Kulshreshtha MCM Scholarship
- 12) Smt. Kamlesh Kumari Kulshreshtha MCM Scholarship
- 13) Shri Raghubir Sahai Kulshreshtha MCM Scholarship
- 14) Prof. Aruna Kulshreshtha MCM Scholarship
- 15) Prof. Sushma Kulshreshtha MCM Scholarship
- 16) Smt. Rashmi Srivastava MCM Scholarship
- 17) Smt. Mata Pujniya Lila Wati Ji MCM Scholarship

# Medals and Awards (AY 2022-23)

## 1. KUBADIA DRUPKUMAR VIJAYKUMAR,

Bachelor of Architecture

Smt. Chandravati Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Arch.

Smt. Kailash Kambo Award for securing the highest CGPA amongst the graduating students of B.Arch.

Everest Award of Excellence for securing the highest CGPA amongst the B.Arch. graduating students.

## 2. MANAS GANESH AVINASHE,

Bachelor of Architecture

Best Project Award for best project amongst the graduating students of B.Arch.

## 3. ADITI KOTHIALA,

B.Tech. Biotechnology

Mrs. Mavis Bertha Wilkinson Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Biotechnology).

Best Project Award for best project amongst the graduating students of B.Tech. (Biotechnology).

Prof. Ranvir Singh Shastri Cash Prize for securing the second highest CGPA amongst the graduating girl students of all B.Tech. programmes.

## 4. NAITIK JAIN,

B.Tech. Chemical Engineering

Kapil Garg Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Chemical Engineering).

Prem Prakash Gupta Cash Prize for securing the highest CGPA amongst the graduating students of B.Tech. (Chemical Engineering).

## 5. ATUL SINGH,

B.Tech. Chemical Engineering

Singhal's Tech for Society Award for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.

## 6. JOGESH GURJAR,

B.Tech. Chemical Engineering

Singhal's Tech for Society Award for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.

## 7. NAGENDRA SINGH RAJPUT,

B.Tech. Chemical Engineering

Singhal's Tech for Society Award for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.

## 8. NIPUN AGGARWAL,

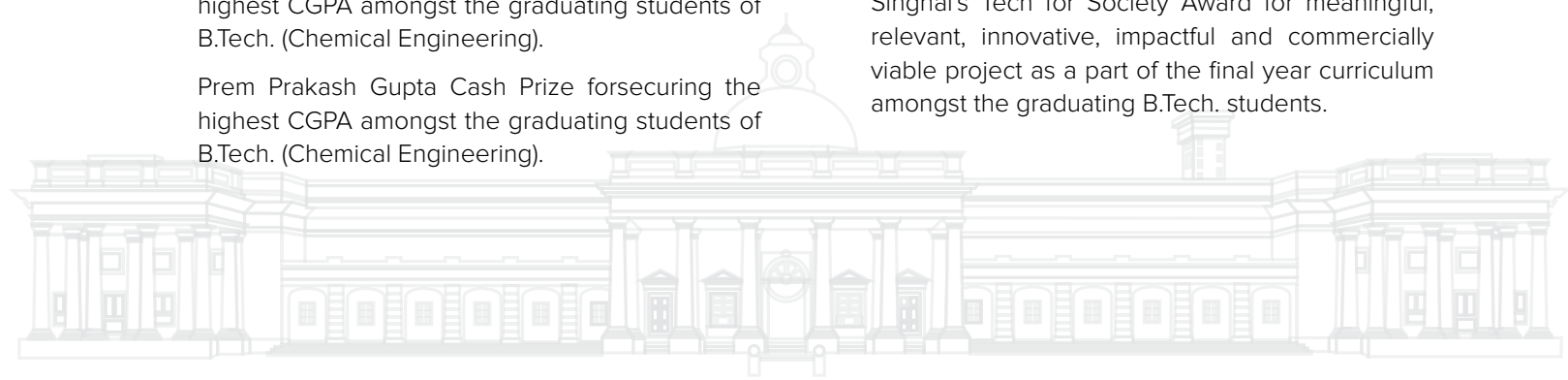
B.Tech. Chemical Engineering

Singhal's Tech for Society Award for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.

## 9. VISHAL TRIPATHI,

B.Tech. Chemical Engineering

Singhal's Tech for Society Award for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.



**10. YAVNIKA GARG,**

B.Tech. Chemical Engineering

Best Project Award for best project amongst the graduating B.Tech. students of Department of Chemical Engineering.

Professional Development and Innovation Award for the Innovative project in the final year amongst the graduating UG and PG students of engineering/architecture under the category of Best Women Innovator.

**11. ANURAJ SAXENA,**

B.Tech. Civil Engineering

Manmohan Das Seth Department Gold Medal for Securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

Kedar Nath Agarwala, I.S.E Memorial Trophy and Cash Award for academic excellence and outstanding community service amongst the graduating UG/PG students.

Prabhakar Swarup Civil Engineering Award for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).

Prof. C.L. Toshniwal Award in Civil Engineering for securing the highest marks in the compulsory courses of Environmental Engineering amongst the graduating students of B.Tech. (Civil Engineering).

Shri Shiv Nandan Swarup and Avadh Narayan Bhatnagar Cash Prize for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).

Madhusudan Dayal Mithal Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).

Rai Bahadur Sohan Lal Bhatia Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).

**12. AMIT KUMAR,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**13. ANGEL MEHTA,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**14. ANIRUDH VERMA,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**15. ANKIT KUMAR GUPTA,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**16. ANSHUL SACHDEVA,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**17. ANSHUL SAINI,**

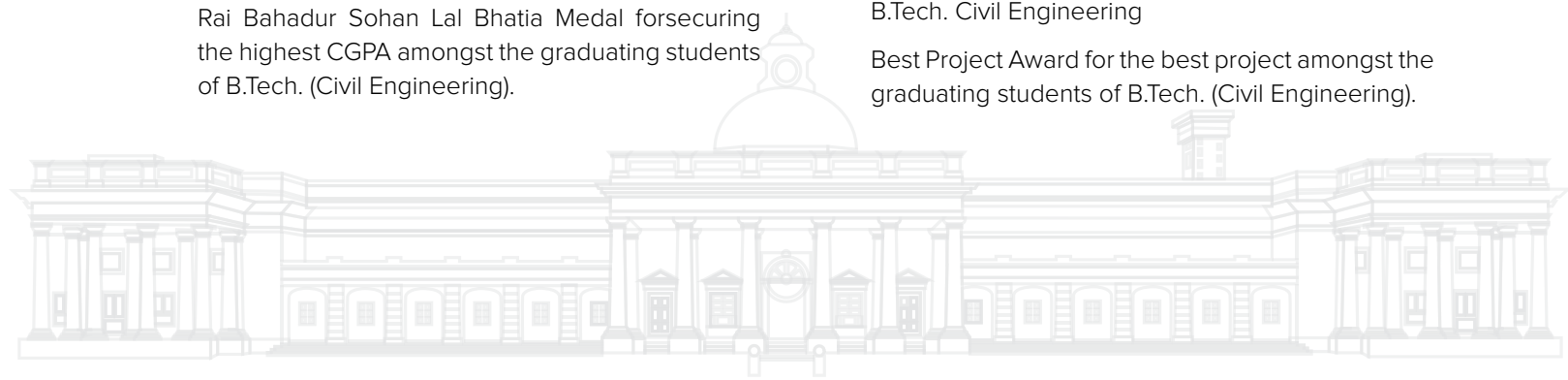
B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**18. ANUP,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).



**19. ANURAG YADAV,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**20. APOORVA KAUSHIK,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**21. ARCHANA KUMARI,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**22. HARSH KUMAR,**

B.Tech. Civil Engineering

Rural India Technology Based Upliftment (RITU) Excellence Award for Significant contribution towards development of rural India either in the form of a final year project or part of any other initiative at IIT Roorkee amongst the graduating student of B.Tech./Int.M.Sc./M.Tech., and dual degree programmes.

**23. VARUN MISHRA,**

B.Tech. Civil Engineering

Vinay Krishna Cash Prize for securing the second highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).

**24. DIVYANSH AGARWAL,**

B.Tech. Computer Science and Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Computer Science and Engineering).

**25. MD JUNAID MAHMOOD,**

B.Tech. Computer Science and Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Computer Science and Engineering).

**26. KEERTHANA NUTI,**

B.Tech. Computer Science and Engineering

Professional Development & Innovation Award for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.

**27. SHASHANK AITAL,**

B.Tech. Computer Science and Engineering

Professional Development & Innovation Award for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.

**28. SHREYAS DODAMANI,**

B.Tech. Computer Science and Engineering

Professional Development & Innovation Award for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.

**29. SAKSHAM SINGHAL,**

B.Tech. Electrical Engineering

Smt. Sukh Devi Kulshreshtha Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Electrical Engineering).

N.S. Agarwal Innovation Award for innovative work in their field amongst the graduating UG students.





**30. ANCHIT PROCH,**

B.Tech. Electrical Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Electrical Engineering).

**31. ADITYA SHARMA,**

B.Tech. Electrical Engineering

Professional Development and Innovation Award for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.

**32. VATSAL DIXIT,**

B.Tech. Electrical Engineering

Professional Development & Innovation Award for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.

**33. ABHISHEK SARONIYA,**

B.Tech. Electrical Engineering

N.S. Agarwal Innovation Award for innovative work in their field amongst the graduating UG students.

**34. AGRIM AGRAWAL,**

B.Tech. Electrical Engineering

N.S. Agarwal Innovation Award for innovative work in their field amongst the graduating UG students.

**35. SUTHAR NISARG MANISHBHAI,**

B.Tech. Electrical Engineering

N.S. Agarwal Innovation Award for innovative work in their field amongst the graduating UG students.

**36. DHRITI GUPTA,**

B.Tech. Electrical Engineering

Air Cmdr S.C. Mehra Scholarship for securing the highest CGPA amongst the graduating female students of B.Tech. (Electrical Engineering).

**37. S SHANMATHI,**

B.Tech. Electrical Engineering

Om Bala Thapar Cash Prize for best all-round performance amongst the graduating UG girl students.

**38. VISHU SAXENA,**

B.Tech. Electronics & Communication Engineering  
Shri Hari Chand Nagalia Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Electronics and Communication Engineering).

Best Project Award for the Best project amongst the graduating students of B.Tech. (Electronics and Communication Engineering).

Professional Development & Innovation Award for the Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Best Innovation.

**39. YASH JAIN,**

B.Tech. Electronics & Communication Engineering

Best Project Award for the Best project amongst the graduating students of B.Tech. (Electronics and Communication Engineering).

Professional Development & Innovation Award for the Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Best Innovation.

**40. GARVIT AGRAWAL,**

B.Tech. Electronics & Communication Engineering  
N.S. Agarwal Innovation Award for innovative work in their field amongst the graduating UG students.



**41. SANJANA NARAYAN,**

B.Tech. Electronics & Communication Engineering  
N.S. Agarwal Innovation Award for innovative work in their field amongst the graduating UG students.

**42. TANYA RAMPAL,**

B.Tech. Electronics & Communication Engineering  
Smt. Kaushalya Arya Cash Prize for the excellent overall performance amongst the B.Tech./ B.Arch. graduating female students.

**43. ANAND CHOUDHARY,**

B.Tech. (Engineering Physics)  
Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Engineering Physics).  
Best Project Award for the Best project amongst the graduating students of B.Tech. (Engineering Physics).

**44. EESH GUJRANIA,**

B.Tech. Mechanical Engineering  
Best Project Award for the best project amongst the graduating students of B.Tech. (Mechanical Engineering).

**45. KRITIN R. AGRAWAL,**

B.Tech. Mechanical Engineering  
Best Project Award for the best project amongst the graduating B.Tech. students of Department of Mechanical & Industrial Engineering.

**46. ASHANA SHARAN,**

B.Tech. Mechanical Engineering  
P.K. Kapse Award to Medhavi Girl for obtaining the highest CGPA amongst the graduating girl students of B.Tech. (Mechanical Engineering).

**47. RUTHIK KANTILAL JADHAV,**

B.Tech. Production & Industrial Engineering  
Best Project Award for the best project amongst the graduating B.Tech. students of Department of Mechanical & Industrial Engineering.

**48. VAIBHAV SAINI,**

B.Tech. Production & Industrial Engineering  
Best Project Award for the best project amongst the graduating B.Tech. students of Department of Mechanical & Industrial Engineering.

**49. RACHERLA GEETIKA,**

B.Tech. Metallurgical & Materials Engineering  
Frau Gertrude Felden Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Metallurgical and Materials Engineering).

**50. DHARAMSOTHU VENU,**

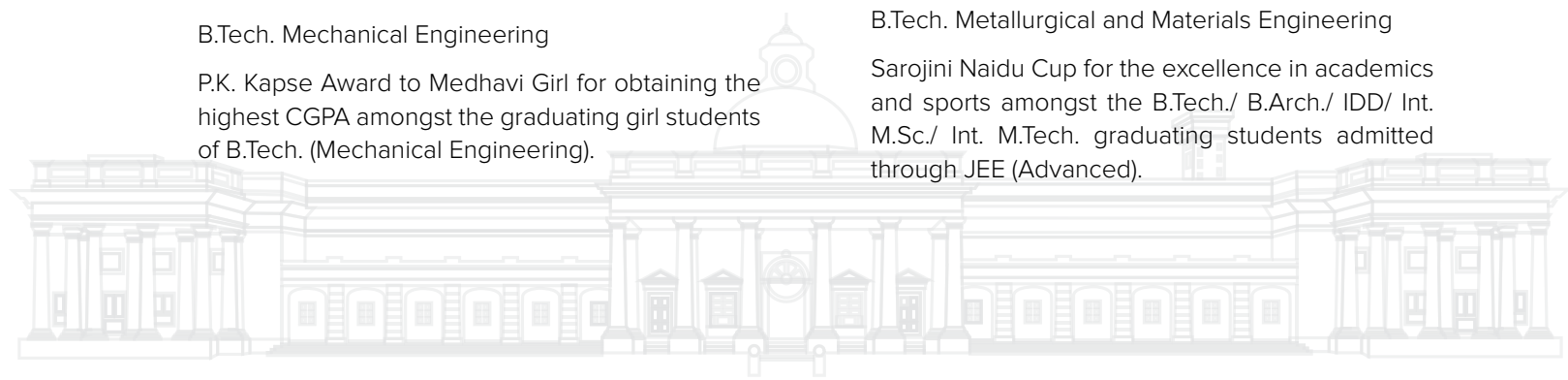
B.Tech. Metallurgical & Materials Engineering  
Best Project Award for the best project amongst the graduating students of B.Tech. (Metallurgical and Materials Engineering).

**51. ADITYA BIPINCHANDRA GITE,**

B.Tech. Metallurgical and Materials Engineering  
Hari Krishna Mittal Leadership Award for the significant contribution towards enhancing the entrepreneurship culture at IIT Roorkee amongst the graduating UG/PG (including Ph.D.) students.

**52. AISHWARYA,**

B.Tech. Metallurgical and Materials Engineering  
Sarojini Naidu Cup for the excellence in academics and sports amongst the B.Tech./ B.Arch./ IDD/ Int. M.Sc./ Int. M.Tech. graduating students admitted through JEE (Advanced).



**53. MEDA RADHEESH SHARMA,**

B. Tech. Polymer Science & Engineering

Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Polymer Science and Engineering).

Best Project Award for the best project amongst the graduating students of B.Tech. (Polymer Science and Engineering).

**54. SHIVAM MISHRA,**

Integrated M.Sc. Chemistry

Department Gold Medal for securing the highest CGPA amongst the graduating students of Integrated M.Sc. Chemistry.

**55. VINIT GUPTA,**

Integrated M.Sc. Applied Mathematics

Department Gold Medal for securing the highest CGPA amongst the graduating students of Integrated M.Sc. Applied Mathematics.

**56. AARUSHI VIJ,**

Integrated M.Sc. Applied Mathematics

Best Project Award for the best project amongst the graduating students of Integrated M.Sc. Applied Mathematics.

**57. VANSHAJ KERNI,**

Integrated M.Sc. Physics

Department Gold Medal for securing the highest CGPA amongst the graduating students of Integrated M.Sc. Physics.

**58. PARTH BAHUGUNA,**

Integrated M.Sc. Physics

Best Project Award for the best project amongst the graduating students of Integrated M.Sc. Physics.

**59. YASH SANJAY KUTE,**

Integrated M.Tech. Geological Technology

Department Gold Medal for securing the highest CGPA amongst the graduating students of Integrated M.Tech. Geological Technology.

Best Project Award for best project amongst the graduating students of Integrated M.Tech. Geological Technology.

**60. AKSHAY VIJAY KAMATH,**

Integrated M.Tech. Geophysical Technology

Frau Odillie Schiffer Department Gold Medal for securing the highest CGPA amongst the graduating students of Integrated M.Tech. Geophysical Technology.

Best Project Award for the best project amongst the graduating students of Integrated M.Tech. Geophysical Technology.

**61. KRITIKA SHARMA,**

Master of Urban and Rural Planning

Department Gold Medal for securing the highest CGPA amongst the graduating students of Master of Urban and Rural Planning.

Smt. Kailash Kambo Award for securing the highest CGPA amongst the graduating students of M.U.R.P.

**62. MANSI SOOD,**

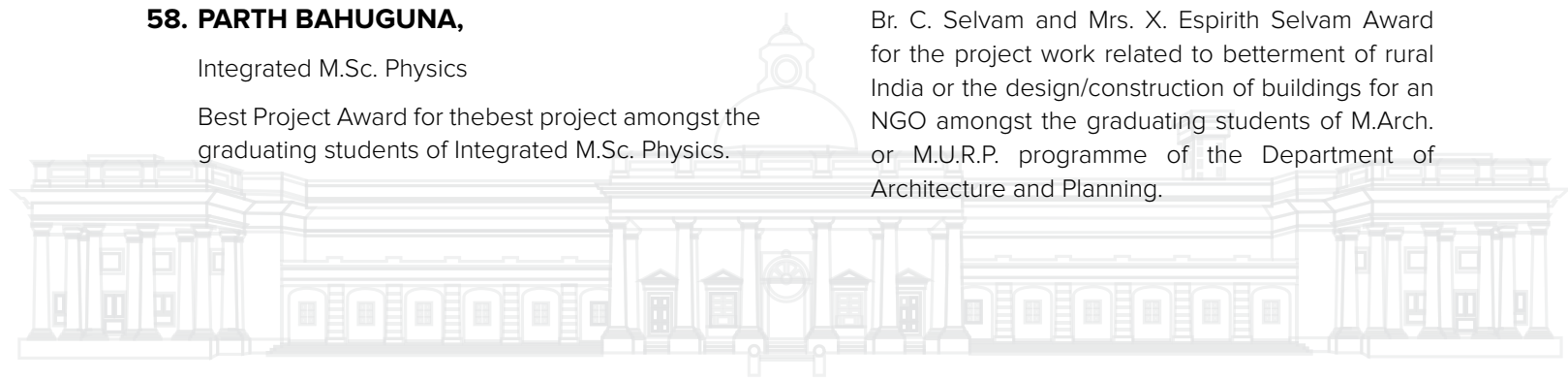
Master of Architecture

Smt. Kailash Kambo Award for securing the highest CGPA amongst the graduating students of M.Arch.

**63. DIBYANK DARSHI,**

Master of Urban and Rural Planning

Br. C. Selvam and Mrs. X. Espirith Selvam Award for the project work related to betterment of rural India or the design/construction of buildings for an NGO amongst the graduating students of M.Arch. or M.U.R.P. programme of the Department of Architecture and Planning.



**64. KM SWAPNIL SINGH,**

M.Tech. Alternate Hydro Energy Systems

MEENAKSHI POWER AWARD for securing the highest CGPA amongst the graduating female students of M.Tech. Alternate Hydro Energy Systems).

**65. PAGADALA SUKHANTH BABU,**

M.Tech. Alternate Hydro Energy Systems

BSHPC Cash Prize for securing the highest CGPA amongst the graduating students of M.Tech. Alternate Hydro Energy Systems.

**66. SACHIN AGGARWAL,**

M.Tech. Alternate Hydro Energy Systems

Electrosteel Award Cash Prize for the best dissertation amongst the graduating students of M.Tech. (Alternate Hydro Energy Systems).

**67. SRISHA GUPTA,**

M.Tech. Alternate Hydro Energy Systems

A.K. Goel Hydropower Award for the best dissertation in Hydropower subject amongst the graduating students of Department of Hydro and Renewable Energy.

**68. IRAM NAAZ,**

M.Tech. Environmental Management of Rivers and Lakes

Electrosteel Award Cash Prize for the best dissertation amongst the graduating students of M.Tech. (Environment Management of Rivers and Lakes).

**69. POOJA CHOUDHARY,**

M.Tech. Environmental Management of Rivers and Lakes

Meenakshi Power Award for securing the highest CGPA amongst the graduating female students of

M.Tech. Environment Management of Rivers and Lakes.

**70. VAIBHAV BISLA,**

M.Tech. Environmental Management of Rivers and Lakes

Chhattisgarh State Power Generation Corporation Hydro Award for securing the highest CGPA amongst the graduating students of M.Tech. (Environment Management of Rivers and Lakes).

**71. SHUBHALI SINGH,**

M.Tech. Bioprocess Engineering

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Biosciences and Bioengineering.

**72. SAMIKSHA,**

M.Tech. Chemical Engineering

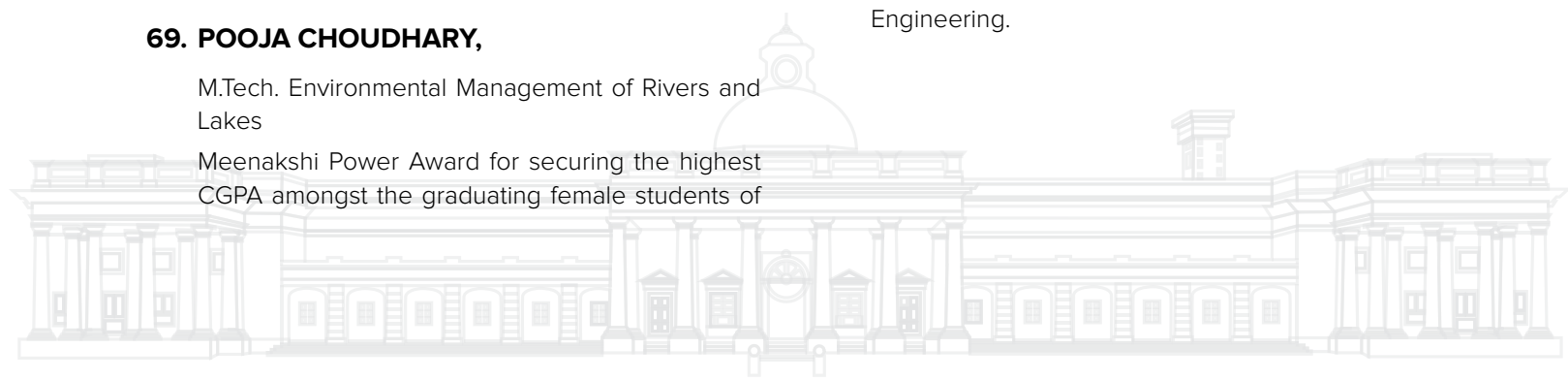
Smt. Prem Lata Nagalia Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Chemical Engineering.

**73. AASHUTOSH GARG,**

M.Tech. Environmental Engineering

Shri Suresh Chandra Kapoor Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Civil Engineering.

Prof. C.L. Toshniwal Award in Environmental Engineering for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Environmental Engineering.



**74. THOTA VIJAYA KUMAR,**

M.Tech. Geomatics Engineering

Amba Prasad - Kalawati Memorial Cash Prize for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Geomatics Engineering.

**75. AJAY DWIVEDI,**

M.Tech. Geotechnical Engineering

Tara Chand Kanti Devi Cash Prize for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Geotechnical Engineering.

**76. MANISH KUMAR YADAV,**

M.Tech. Transportation Engineering

Sunita Bahadur Memorial Medal for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Transportation Engineering.

**77. AMOL PRASAD SHARMA,**

Masters in Innovation Management

Department Gold Medal for securing the highest CGPA amongst the graduating students of Masters in Innovation Management programme of Department of Design.

**78. KALE ANURAG ANIL,**

M.Tech. Disaster Mitigation and Management

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Centre of Excellence in Disaster Mitigation and Management.

**79. WASIM AHMAD,**

M.Tech. Structural Dynamics

Smt. Lalit Kishori Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Earthquake Engineering.

The Indian Service of Engineers Cash Prize for securing the highest CGPA amongst the graduating students of M.Tech. Structural Dynamics.

**80. TANYA MALVI,**

M.Tech. Soil Dynamics

The Indian Service of Engineers Cash Prize for securing the highest CGPA amongst the graduating students of M.Tech. Soil Dynamics.

**81. ROSHAN SAHU,**

M.Tech. System and Control

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electrical Engineering.

Shri Bishwanath Bhattacharya Memorial Award for Best dissertation/thesis work amongst the graduating students of M.Tech. and Dual Degree programmes of Department of Electrical Engineering.

**82. KUNAL PANWAR,**

M.Tech. System and Control

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electrical Engineering.



**83. SOURABH KUMAR SHARMA,**

M.Tech. RF and Microwave Engineering

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electronics and Communication Engineering.

**84. ABHISHEK SHUKLA,**

M.Tech. Dam Safety and Rehabilitation

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Hydrology.

**85. SAURABH KUKRETI,**

M.Tech. Thermal Engineering

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Mechanical and Industrial Engineering.

**86. PANDYA RONAK MANISHBHAI,**

M.Tech. Data Science

Prof. Kumkum Garg Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Mehta Family School of Data Science and Artificial Intelligence.

Mrs. Chander Mohini Kapoor And Jeewan Kapoor Merit Prize for obtaining the highest CGPA amongst the graduating students of M.Tech. Data Science.

**87. M KRISHNA CHAITANYA,**

M.Tech. Artificial Intelligence

Professional Development and Innovation Award for innovative project in the final year amongst the graduating PG students of engineering/architecture under the category of Judges' Choice.

**88. DIVYA SHARMA,**

M.Tech. Materials Engineering

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Metallurgical and Materials Engineering.

**89. KAUSTUBH SHARMA,**

M.Tech. Packaging Technology

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Paper Technology.  
Shyam S. Biyani Cash Award for securing the highest CGPA amongst the graduating students of M.Tech. Packaging Technology.

**90. PRAVEEN KUMAR KUNAM,**

M.Tech. Pulp and Paper Engineering

Professional Development and Innovation Award for the Innovative project in the final year amongst the graduating PG students of engineering/architecture under the category of Best Innovation.

**91. JATOTH JAI KUMAR RATHOD,**

M.Tech. Infrastructure Systems

Shri Ravi Mohan Mangal Cash Prize for securing the highest CGPA amongst the graduating students of M.Tech. Infrastructure Systems of Centre for Transportation Systems.

**92. PIYUSH KUMAR,**

M.Tech. Irrigation Water Management

S.K. Kumar Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Water Resources Development and Management.

Dr. A.N. Khosla Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Water Resources Development and Management.



**93. SIMRAN GULERIYA,**

M.Sc. Applied Geology

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Earth Sciences.

**94. ISHA,**

M.Sc. Chemistry

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Chemistry.

Dr. Hari G. Garg Cash Prize for securing the highest CGPA amongst the graduating students of M.Sc. Chemistry.

**95. RISHABH GUPTA,**

M.Sc. Economics

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Humanities and Social Sciences

**96. NIKITA,**

M.Sc. Mathematics

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Mathematics.

**97. KRISHAN JOSHI,**

M.Sc. Physics

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Physics.

**98. HARDIK GARG,**

M.Sc. Biotechnology

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Sc.

programme of Department of Bioscience & Bioengineering.

Dr. A.N. Khosla Medal for securing the highest CGPA amongst the graduating students of M.Sc./ M.Tech. (Science) programmes.

**99. PRAKHAR DIXIT,**

Ph.D. Department of Polymer and Process Engineering

Excellence in Doctoral Research Award for outstanding Ph.D. work in Engineering Stream under the category of Applied Research.

**100. MANISHA MALIK,**

Ph.D. Department of Mathematics

Dr. Sushil Sharma Excellence in Doctoral Research Award for outstanding Ph.D. work in Science Stream under the category of Applied Research.

**101. SHWETA TRIPATHI,**

Ph.D. Department of Biosciences and Bioengineering

Excellence in Doctoral Research Award for outstanding Ph.D. work in Engineering Stream under the category of Fundamental Research.

**102. ANKIT BABU,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).

**103. ANUPRIYA,**

B.Tech. Civil Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Civil Engineering).



**104. PRANAW RAJ,**

B.Tech. Computer Science and Engineering

Best Project Award for the best project amongst the graduating students of B.Tech. (Computer Science and Engineering).

**105. SARTHAK SHARMA,**

B.Tech. Mechanical Engineering

Dr. A.S. Arya Cash Prize for excellent overall performance amongst the B.Tech./ B.Arch. graduating male students.

**106. AYUSH KUMAR DIXIT,**

IDD-B.Tech. (Mechanical Engineering) and M.Tech. (Thermal Engineering)

Vidya Dutt Department Gold Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Mechanical Engineering).

**107. PEDDAPOTHULA SAHITHI PRIYA,**

Integrated M.Sc. Chemistry

Best Project Award for the best project amongst the graduating students of Integrated M.Sc. Chemistry.

**108. GULLAPALLI TEJDEEP,**

M.Tech. Electric Drives and Power Electronics

Mr. Bevan Ross Wilkinson Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electrical Engineering.

**109. LOKMAN HAKIM,**

M.Tech. Packaging Technology

Professional Development & Innovation Award for innovative project in the final year amongst the

graduating UG and PG students of engineering/architecture under the category of Best Overseas Innovator.

**110. SPARSH WADHWA,**

Master of Business Administration

G.M. Singhvi Department Gold Medal for securing the highest CGPA amongst the graduating students of Master of Business Administration.

**111. AHZAM SHAKEEL,**

M.Tech. Alternate Hydro Energy Systems

Chhattisgarh State Power Generation Corporation Hydro Award to securing the highest CGPA amongst the graduating students of M.Tech. Alternate Hydro Energy Systems.

**112. PRATYAY BANERJEE,**

M.Des. Industrial Design

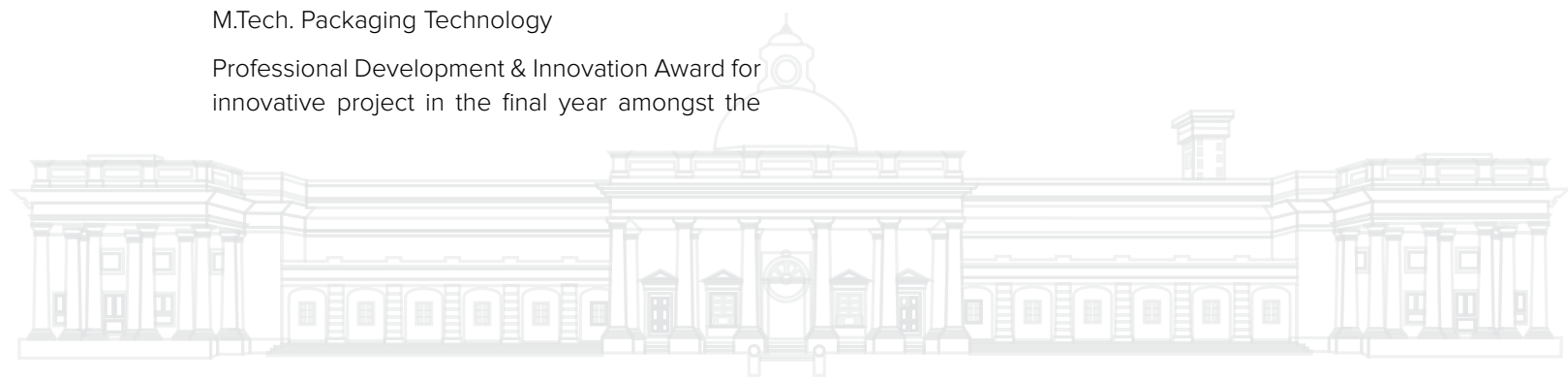
Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Des. programme of Department of Design.

**113. MAYANK GAUTAM,**

M.Tech. Polymer Science & Engineering

Department Gold Medal for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Polymer and Process Engineering.

Shyam S. Biyani Cash Award for securing the highest CGPA amongst the graduating students of M.Tech. Polymer Science and Engineering.







# Notes

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## Indian Institute of Technology Roorkee

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Roorkee, Uttarakhand - 247667, India