



# ANNUAL REPORT 2023 - 2024



**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**  
ROORKEE, UTTARAKHAND, INDIA - 247667



# Annual Report

## 2023-2024



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. Kamal Kishore Pant**

**Deputy Director**

**Prof. Udai Pratap Singh**



# Annual Report: At a Glance

2023-24

## Departments / Centres / Units / School

Academic Departments/Centres	23
Specialised Centres	14
Service Centres	07
Other Units	06
School	01

## Grants

Amount in Lakhs

MHRD	77243.74
Others	3077.07
CSIR	21.47
Research and Consultancy	27992.15
Total	80320.81

## Student Admitted

B.Tech. / B.Arch. / IDD	1328
PG Degree	1010
Research Scholars	604
Total	2942
Male	2270
Female	672

## Student Strength

B.Tech. / B.Arch. / IDD	5484
PG Degree	1824
Research Scholars	3069
Total	10377
Male	7893
Female	2484

## No. of Degrees Awarded

B.Tech. / B.Arch. / IDD	1077
PG Degree	685
Research Scholars	154
Total	1916
Male	1522
Female	394

## Faculty / Staff Strength

Faculty in Position	663
Scientist / Others in Position	18
Non-Teaching Staff in Position	604
Group A	96
Others (Group B, C & MTS)	508

## Research Papers

Journals	2146
Conference / Symposia	786
Total	2932

## Consultancy Projects

Number of New Projects	990
Outlay (.... of Rs.)	105.944

## Sponsored Research Projects

Number of New Projects	291
Outlay (.... of Rs.)	173.977



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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

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

# Director's Message

## For Annual Report 2023-24



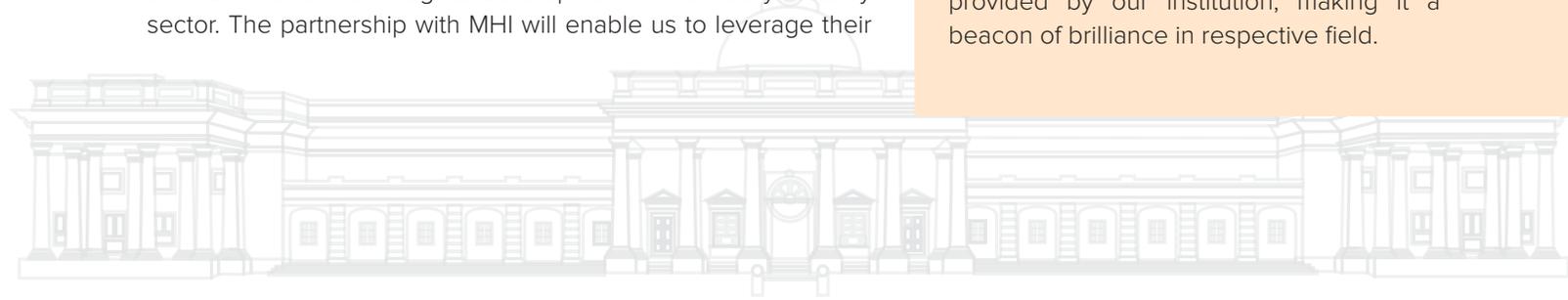
In 2024, IIT Roorkee has been conferred the “Most Innovative Institute” in India along with the “Grand Jury Award” by the CII Industrial Innovation Awards for four consecutive years from 2020 to 2023. Awards highlights a sustained commitment to innovation and excellence. It speaks volumes about the institute’s dedication to pushing the boundaries of knowledge and technology in India. Such recognition must have significantly boosted its reputation and encouraged further innovative endeavors.

We are proud to announce of our one of unparallel MoU signing with the Ministry of Heavy Industries (MHI). To set up “Industry Accelerator for AARTI (Automotive & Allied Research and Technology Innovations) and Center of Excellence (CoE) under the MHI Indian Capital Goods Scheme –Phase II of the Ministry of Heavy Industries, Government of India. This collaboration aims to synergize the strengths and capabilities of both entities to drive innovation and technological development in the heavy industry sector. The partnership with MHI will enable us to leverage their

industry insights and expertise, facilitating translating academic research into practical solutions to enhance efficiency, sustainability, and competitiveness in the heavy industry sector.

Further, in another landmark development, IIT Roorkee has forged an unprecedented Memorandum of Understanding (MoU) with the Director General Armed Forces Medical Services (DGAFMS), marking a significant milestone in collaborative biomedical research. This transformative partnership aims to promote collaborative research in the critical domains of Combat Medical Support and hospital care, leveraging the collective expertise of both institutions. Through a concerted focus on nurturing a culture of collaboration and synergy, facilitated by faculty exchange programs, joint academic initiatives, and vibrant events, this alliance endeavors to propel medical research in AFMS and nanotechnology to unparallel heights.

Our rankings in the National Institutional Ranking Framework (NIRF) are a testament to our consistent pursuit of excellence. We have secured the 5th rank in 2023 in the NIRF Engineering category and retained the 5th position in the NIRF Innovation ranking in 2023 is indeed a testament to our institution’s consistent pursuit of excellence and innovation. Achieving the 1st rank consecutively for the third time in the Department of Architecture underscores our expertise and leadership in this specialized domain. These rankings reflect the dedication, hard work, and quality education provided by our institution, making it a beacon of brilliance in respective field.



By embracing the foundational principles of NEP 2020, IIT Roorkee reaffirms its commitment to academic excellence, innovation, and societal relevance, empowering the next generation of leaders and change-makers to thrive in a rapidly evolving world. In alignment to this, IIT Roorkee embarks on a comprehensive revision of its postgraduate curriculum, paving the way for a dynamic and future-ready educational landscape.

The Convocation 2023 has been a momentous occasion, celebrating the accomplishments of our graduates and marking the beginning of their journey as alumni of IIT Roorkee. A total of 1916 degrees were conferred, including 1076 UG, 686 M.Tech, M.Arch, MBA, MURP, MSc, PG Diplomas, and 154 PhDs. Our proud graduates, equipped with the knowledge and skills acquired at IIT Roorkee, are ready to embark on their professional and academic pursuits, contributing to society and making a mark in their respective fields. We are confident that they will uphold the values and legacy of IIT Roorkee and continue to make us proud. Congratulations to all the graduates and their families on this momentous occasion!

IIT Roorkee offers various programs across engineering, sciences, management, architecture and planning, humanities, and social sciences. With 23 departments and 13 specialized centres, the Institute provides a broad spectrum of academic opportunities. Specialized centres like the Centre for Space Science and Technology, Mehta Family School of Data Science & Artificial Intelligence, Centre of Sustainable Energy, Centre of Indian Knowledge System and the International Centre of Excellence for Dams epitomize our commitment to cutting-edge research and interdisciplinary collaboration. The Institute has revamped its Under Graduation curriculum w.e.f. Session 2023-24 to make students future-ready with their global aspirations. The Institute introduces innovative concepts which make its curriculum a nation's pride, such as courses on Artificial Intelligence and Machine Learning (AI/ML), Data Science, Indian Knowledge System (IKS), Tinkering and Mentoring, Talent Enhancement Basket (TEB), Entrepreneurship, Environmental Science and Sustainability Course (ESSC), Community Outreach (CORE), Soft Skills, Theme bases Minor Specialization, Design thinking-based project and many more.

The ministry has nominated IIT Roorkee as Implementing Agency for the promotion of MSME Innovative (Design) Scheme. The core objective of this scheme is to bring Indian manufacturing sector and Design expertise/ Design fraternity on to a common platform. It aims to provide expert advice and cost-effective solution on real time design problems, new product development, its 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



Indian Institute of Technology Roorkee is one of the leading Institutes of National Importance in higher technological education and basic and applied research. Here, the Students will also be able to study selected courses from globally reputed universities while at IIT Roorkee.

IIT Roorkee prioritizes its students' holistic development, excelling in academics, sports, and societal activities. With a strong commitment to internationalization, our Joint Degree Initiatives foster collaborative academic pathways with global universities, providing students with unparalleled global opportunities. Enhanced global engagement is evident through streamlined admissions, a dedicated International Relations team, and the International Students Affairs Council (ISAC). Partnerships with institutions like DAAD Germany, SICI Canada, and IUSSTF USA, coupled with participation in ERASMUS+ and initiatives like VAIBHAV and VAJRA, bolster our global reach and faculty diversity. Despite pandemic challenges, international enrolments have rebounded, and plans for self-financing and joint degree programs are underway. A staggering 97 international students hailing from diverse nations such as Ethiopia, Syria, Sudan, Nepal, Bangladesh, Sri Lanka, Tanzania, Myanmar, and more have enthusiastically enrolled at IIT Roorkee during the last financial year. New schemes like Golden Girl and SAKUNTALA also aim to encourage and inspire female students, further strengthening IIT Roorkee's commitment to diversity and global excellence.

Our collaborations with industry and academia have strengthened significantly, leading to numerous MoUs and MoAs signed in 2023. These partnerships underscore our commitment to fostering innovation, research, and technological advancements that address global challenges and contribute to national priorities.

Additionally, IIT Roorkee has fostered a thriving entrepreneurial ecosystem, evidenced by a growing number of patents, incubated companies, and technology transfers, reinforcing its leadership in academia, research, and innovation. Our pursuit of knowledge has led us to set new benchmarks in patent filings, with 120 patents filed and 143 awarded in the past year alone. The introduction of the Faculty-led startup scheme in January 2023 further underscores our dedication to fostering entrepreneurial spirit and technological innovation among our faculty members.

Furthermore, our recent technology transfer initiatives have been instrumental in commercializing our research outcomes and bringing them to market. These efforts have facilitated the adoption of innovative technologies and created opportunities for collaboration between academia and industry, fostering a culture of innovation and entrepreneurship.



IIT Roorkee, building on its legacy of excellence, is grateful for the Rs. 772.44 crores support from the Ministry of Education. This funding reinforces our commitment to advancing education, research, and innovation for national growth. With this support and our dedicated community, we aim to drive impactful contributions across academia and industry, shaping India's future.

IIT Roorkee organized first ever the Uttarakhand Plastics Summit 2023 in collaboration with the Uttarakhand Pollution Control Board. This initiative themed to encourage industries to prioritize recycling and reuse of plastics is crucial for sustainable development. The collaboration between industries and academia to achieve meaningful progress, by developing innovative technologies, they can significantly reduce plastic waste and its environmental impact.

In a resounding echo of commitment to India's educational evolution, IIT Roorkee has proudly entered into the arena of the National Education Policy 2020. With "Empowering India: Nurturing Education, Innovation & Cultural Legacy," IIT Roorkee not only celebrates its 176th anniversary but also champions a comprehensive educational and innovative ethos. Recognizing the pivotal role of early education in shaping lifelong learning, IIT Roorkee embraces the foundational knowledge imparted at the school level.

In alignment with the visionary mission of Prime Minister Narendra Modi, IIT Roorkee gladly presents "India's Techade: Chips for Viksit Bharath," a groundbreaking initiative poised to revolutionize India's semiconductor landscape. At the forefront of this technological renaissance, IIT Roorkee showcases a strategic alliance with global semiconductor leaders, embodying a relentless pursuit of innovation and the cultivation of a highly skilled workforce. IIT Roorkee demonstrates its proactive approach to international cooperation and talent cultivation through its significant Joint MTech Program in Semiconductor Technology and its innovative partnerships with prestigious universities in Taiwan.

In seamless continuity with Prime Minister Modi's visionary roadmap for a developed India by 2047, IIT Roorkee witnessed the launch of "Viksit Bharat @2047: Voice of Youth" aimed at harnessing the potential of India's youth for the nation's development. At its core, it seeks to empower the youth to become architects of India's future, fostering a sense of ownership and responsibility towards national development.

**Prof. K.K. Pant**

Director, IIT Roorkee  
August 2024



# Board of Governors

## Chairman

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

**Chairperson**

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

## Two Nominees of State Government

**Prof. Narendra Singh**

**Member**

S/o Late Shri Harish Chandra, Distt. Haridwar upto 31.12.2023

**Prof. Onkar Singh**

**Member**

Vice Chancellor, Veer Madho Singh Bhandari, UTU, Dehradun – 248007 w.e.f. 23.02.2024

**Principal Secretary to Government of Haryana**

**Member**

Technical Education Department, Chandigarh

## Four Nominees of the Council of IITs

**Additional Secretary (TE)**

**Member**

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

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

**Member**

University of Delhi

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

**Member**

Himalayan Environmental Studies & Conservation Organization, Dehradun (Uttarakhand)

**Sri Ashwani Lohani**

**Member**

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

## Director (Ex-Officio)

**Prof. K.K. Pant**

**Member**

Director, Indian Institute of Technology Roorkee

## Two Senate Nominees

**Prof. C.S.P Ojha**

**Member**

Department of Civil Engineering, Indian Institute of Technology Roorkee upto 31.12.2023

**Prof. U.P. Singh**

**Member**

Department of Chemistry, Indian Institute of Technology Roorkee... upto 31.12.2023

**Prof. N.K. Samadhiya**

**Member**

Department of Civil Engineering, Indian Institute of Technology Roorkee.. w.e.f. 01.01.2024

**Prof. B.K. Gandhi**

**Member**

Department of Mechanical & Industrial Engineering,  
Indian Institute of Technology Roorkee w.e.f. 01.01.2024

## Special Invitee

**Prof. U.P. Singh**

**Member**

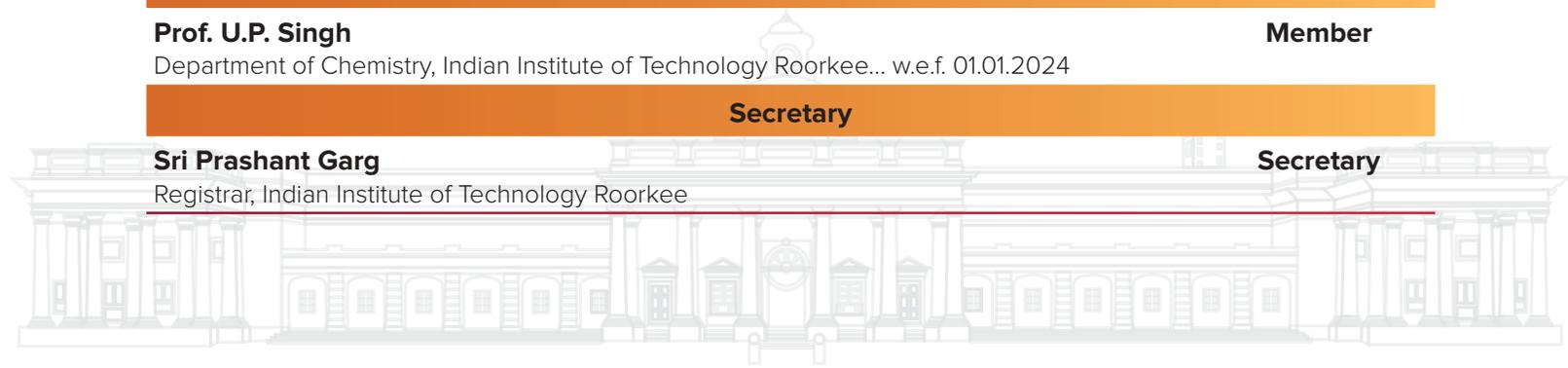
Department of Chemistry, Indian Institute of Technology Roorkee... w.e.f. 01.01.2024

## Secretary

**Sri Prashant Garg**

**Secretary**

Registrar, Indian Institute of Technology Roorkee



# Academic Affairs

The scope of IIT Roorkee continues to grow in fields that are important to undergraduate and graduate education. Academic affairs office deals with all matters related to Admissions, Curriculum and Evaluation of the Institute. Also involve in conducting meetings of IRC, IAPC and also shares a significant role in the conduct of Senate meetings. In addition Institute Lecture Hall & Conference Complex is maintained by Academic Affairs Office. 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

## Workshop on the Sustainability, Technology, Investments and Colloquium:

The Workshop on Sustainability, Technology, Investments, and Colloquium, organized by the Academic Affairs department, served as a platform for interdisciplinary dialogue and collaboration. The event aimed to explore the intersections of sustainability, technology, and investments while fostering meaningful discussions among experts and participants. H.E. Ms. Sofia Salas, Chargé d'affaires of the Embassy of Costa Rica, Mr. Gaurav Gupta, MD, Desire Energy, Mr. Arpit Chaturvedi, Co-Founder & CEO, Global Policy Insights and Professor Anil Gupta, a senior academician and Head of Division ECDRM at the National Institute of Disaster Management, Ministry of Home Affairs were the graced the workshop as experts.



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



**Workshop on PG 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 workshop to revamp its PG Curriculum. The workshop included external experts with global reputation representing industries, educational institutes/organizations, alumni, social communities, policy makers; in addition to faculty members and students of the IITR.



**Science Day:** On the occasion of the National Science Day, the institute organized various events in the month of Jan 2024 for the school children of Roorkee such as Quiz Competition, Interactive Idea Competition, Science Exhibition and open house.



Later, the annual Science Day lecture was delivered by the Chief Guest Padma Shri Prof. Anil K Gupta, Founder, Honey Bee Network, on Feb 28, 2024.



With an increase in undergraduate (UG) and postgraduate (PG) intake, the student strength has undergone significant changes in the last 10 years. In 2013-14, the number of UG students on-roll was 4450 while the number of PG students was 2166. This changed to 4159 and 1470 for UG and PG students, respectively in 2019-20. Presently, the Institute has about 10377 students of which 5484 are UG and 1824 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 1445 PhD students in 2013-14, the number increased to 3069 in 2023-24. Number of PhDs awarded in the Convocation 2023 is 154.

## Awards and Scholarships offered to Students in 2023-24:

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

- Total of 155 (UG & PG) awards are distributed among the graduating students during Convocation-2023.
- Total 94 SC & ST students are benefitted under the Institute Free Messing Scheme and 177 SC & ST students through National Scholarship Portal.
- Total 891 Merit Cum Means (MCM) Scholarships are distributed among students with lack of means, out of which 724 students are benefitted from institute MCM and 167 students are benefitted from donor sponsored MCM.
- Total 1474 students are benefitted under the Institute Tuition Fee Waiver Scheme.
- Total 98 students are benefitted from INSPIRE SHE Scheme.
- Total 571 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 Centers of Excellence for strengthening and diversifying the academic activities.

At PG level course based on Terahertz Communication and Sensing, Semiconductor Technology and Applied Mathematics & Scientific Computing are introduced in this academic session. These courses will help students to gain a comprehensive understanding of terahertz technology, hands-on experience in semiconductor labs and access to cutting-edge facilities. These programs offer diverse opportunities for students to delve into specialized areas of study, preparing them for rewarding careers and contributing to advancements in their respective fields.

New Ph.D. programs provide a platform for aspiring researchers to contribute to cutting-edge research, innovation, and knowledge dissemination in their respective fields. By leveraging the expertise and resources available at these specialized centers, candidates will be well-equipped to make significant contributions to their areas of study and address pressing societal needs.

The establishment of various centers at IIT Roorkee represents a significant step towards advancing research, innovation, and interdisciplinary collaboration in key areas of societal importance. Here's a closer look at each center

- Centre for Sustainable Energy, aims to explore renewable energy sources, energy efficiency technologies, and sustainable energy policies to mitigate climate change, enhance energy security, and promote economic development.
- The Indian Knowledge System center focuses to preserve, promote, and revitalize traditional knowledge systems indigenous to India. It may encompass diverse areas such as traditional medicine, indigenous agricultural practices, cultural heritage, and indigenous technologies.
- Centre for Sustainable Rural Development may undertake research, training, and outreach activities aimed at addressing key challenges such as poverty

alleviation, food security, access to clean water, rural livelihoods, and environmental conservation.

- Through research and innovation, the International Centre of Excellence for Dams contributes to enhancing dam safety, resilience, and environmental sustainability on an international scale.
- The Integrated Centre for Adaptation to Climate Change, Disaster Risk Reduction and Sustainability (ICARS) at IIT Roorkee fosters collaboration among experts from various disciplines such as environmental science, engineering, social sciences, and policy-making. It focuses on addressing critical challenges related to climate change, disaster risk reduction, and sustainability.
- The automotive and allied research technology innovation (AARTI) center at IIT Roorkee aims to contribute significantly to the advancement of automotive and allied technologies, addressing global challenges while supporting India's automotive industry's growth and competitiveness in the global market.

For JEE advanced 2023, IIT Roorkee zone conducted the examination at 55 centers in 27 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)-2023 was declared on June 18, 2023. The total number of registered candidates in IIT Roorkee zone was 17,310 out of which 4,499 got selected for seats in various IITs. The exam of Architecture Aptitude Test (AAT) was held on June 21, 2023. The total number of registered candidates for JEE (Advanced) 2023 were 1,89,487, out of which 1,80,372 appeared and 43,769 got selected in various IITs. IIT Roorkee zone will be conducting exam at around 29 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

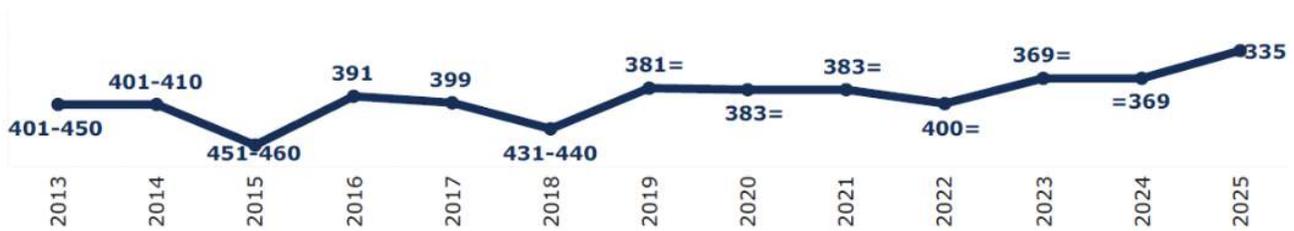
Grant in Aid received from MoE for the FY 2023-2024 includes (Amount in Crores)

Recurring	597.34
Non recurring	175.1
Total Grant	772.44
Income from Fee & other	102.00

# National and International Ranking

The QS World University Rankings is a portfolio of comparative college and university rankings compiled by Quacquarelli Symonds, a higher education analytics firm. Its first and earliest edition was published in collaboration with Times Higher Education (THE) magazine as Times Higher Education–QS World University Rankings, inaugurated in 2004 to provide an independent source of comparative data about university performance.

## IITR Ranking Trade





**335**  
 Indian Institute of Technology Roorkee  
 (IITR)

June 2024

Date

*Ben Sowter*  
 Ben Sowter  
 Senior Vice-President  
 QS Quacquarelli Symonds

Year	National Rank
2024	5

Note: The NIRF 2024 results have been delayed and were not announced in time for inclusion in the Annual Report 2024.



## 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



### IIT Roorkee professor gets IEI Young Engineers Award 2023-24 in Environmental

Indian Institute of Technology (IIT) Roorkee professor has won the 'IEI Young Engineers Award 2023-24' in the Environmental Engineering discipline. The IIT Roorkee Professor Ankit Agarwal is from the

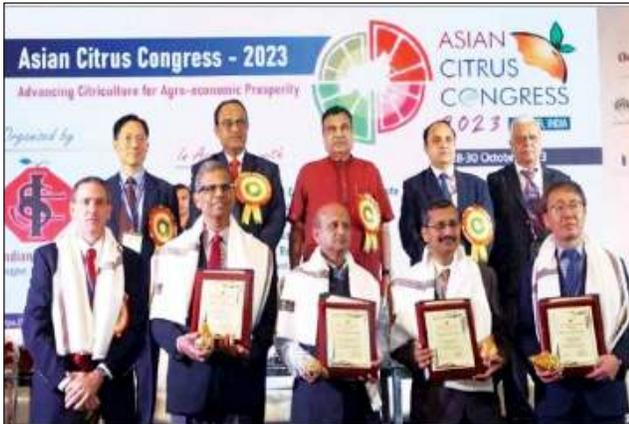


Figure caption: A. Panoramic view of Panandhra Lignite Mine, Kutch, Gujarat, India, showing the fossiliferous level (red arrow) where the 15 metre long snake *Vasuki indicus* was found. B. L-like reconstruction of the vertebrae of *Vasuki* in dorsal (top) view and their most likely position in the vertebral column highlighted in the artistic rendition of a madrasid snake. Picture credit: S. Bajpai, D. Datta and P. Verma. Artistic illustration of madrasid snake modified from <https://www.illustration.com/>

### IIT Roorkee professors discover fossil of 47-million-year-old snake in Gujarat

Researchers at the Department of Earth Sciences at IIT-Roorkee made a groundbreaking discovery in Gujarat, unearthing the fossil of a 47-million-year-old snake.





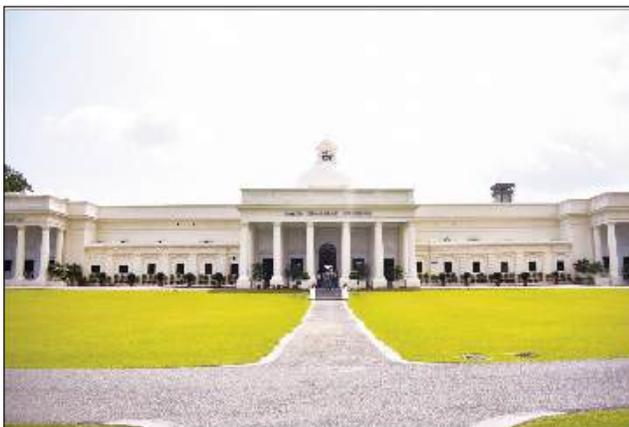
### IIT Roorkee's Prof. Ashwani Kumar Sharma Awarded Prestigious Honorary Fellowship

The Asian Citrus Congress-2023, held in Nagpur, India from October 28th to 30th, celebrated a historic moment where over 300 delegates from 16 countries united to advance the field of citriculture.



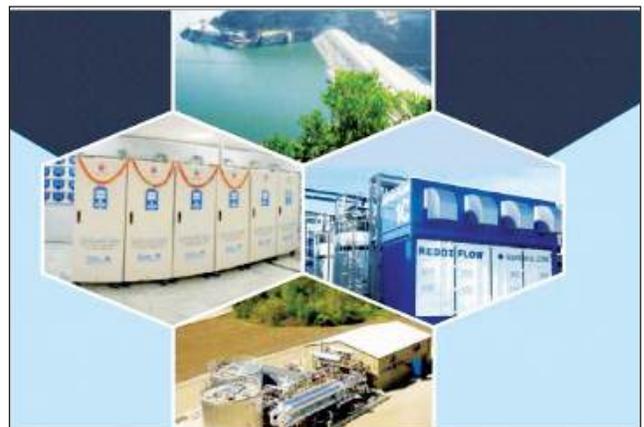
### IIT Roorkee Researchers Help In Understanding Humming Of Our Universe

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.



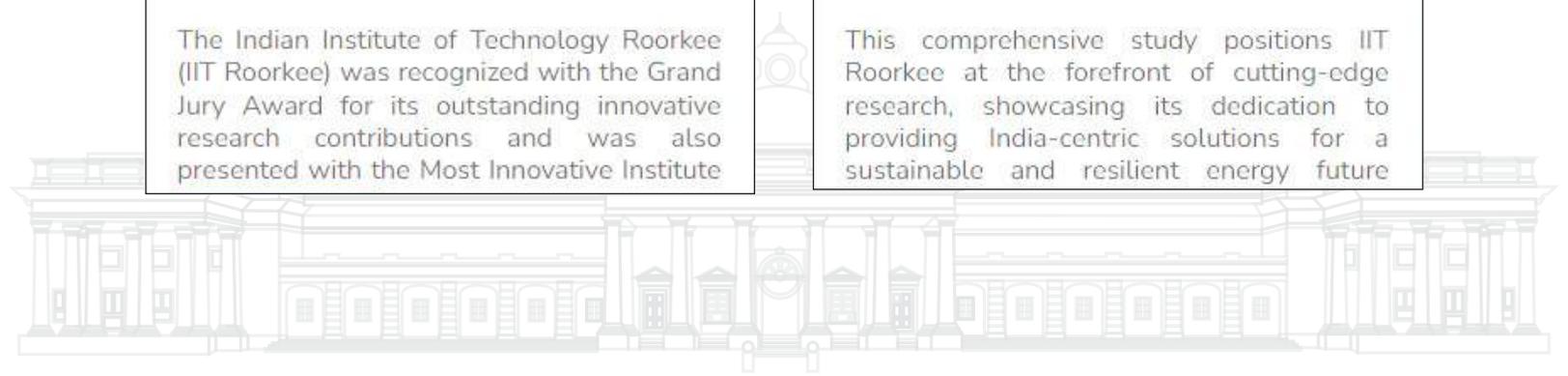
### IIT Roorkee Wins Most Innovative Institute Awards At CII Industrial Innovation

The Indian Institute of Technology Roorkee (IIT Roorkee) was recognized with the Grand Jury Award for its outstanding innovative research contributions and was also presented with the Most Innovative Institute



### IIT Roorkee leads study on Advanced Grid-Scale Energy Storage Technologies

This comprehensive study positions IIT Roorkee at the forefront of cutting-edge research, showcasing its dedication to providing India-centric solutions for a sustainable and resilient energy future





### 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.



### IIT Roorkee shines at 'G20 Standards Dialogue', representing India on global

IIT Roorkee made its mark at the "G20 Standards Dialogue" event, showcasing its commitment to strengthening stakeholder engagement and global standardisation.

## IITR in Media



### IIT Roorkee, Engineers India Limited partners to advance research and innovation

The memorandum of understanding (MOU) signed between IIT Roorkee and EIL outlines a comprehensive framework for cooperation in research-related activities.

[READ MORE](#)



### UP govt to collaborate with IIT Roorkee for enhanced disaster management

The MoU will be signed between the Relief Commissioner's office and IIT Roorkee on the instructions of Chief Minister Yogi Adityanath with the aim to minimise casualties and shift people to safe places

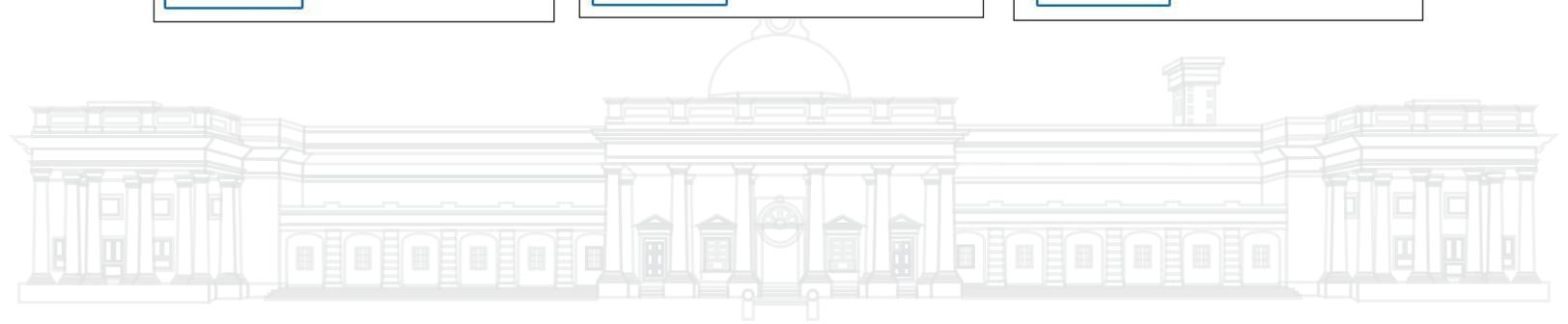
[READ MORE](#)



### Armed Forces Medical Services, IIT Roorkee forge strategic partnership

February 14, 2024, marked a watershed point in the advancement of research within the Armed Forces Medical Services when a formal Memorandum of Understanding was signed, cementing the collaboration

[READ MORE](#)





**IIT Roorkee organizes ICECEES-2024**

The Department of Chemical Engineering, Indian Institute of Technology Roorkee (IIT Roorkee) organized a three-day International Chemical Engineering Conference on Energy, Environment, and Sustainability



**C-DOT and IIT Roorkee signs agreement**

C-DOT, the premier Telecom R&D Centre of the Department of Telecommunications (DoT), Government of India and Indian Institute of Technology, Roorkee (IIT-R)



**Unveiling of a Revolutionary Innovation Hub at IIT Roorkee**

Rethink! The Tinkering Lab at IIT Roorkee Pioneers Innovation with Cutting-Edge Cyber Physical Systems Facility and Rethink! The Tinkering Lab Takes a Leap into the Future of Research.



**IIT Roorkee Gears Up for E-Summit 2024**

IIT Roorkee, a renowned hub for innovation and excellence, is set to host the 19th edition of North India's largest business conclave, E-Summit, from 2nd to 4th February 2024.



**IIT Roorkee Marks Republic Day with a Grand Celebration**

The Indian Institute of Technology Roorkee (IIT Roorkee) looks back at a memorable event that showcased unity, cultural diversity, and a deep appreciation for outstanding contributions within the



**IIT Roorkee's Sanskrit Club Achieves Milestone In Promoting Sanskrit Education**

In a commendable effort to promote Sanskrit education and Indian knowledge systems, IIT Roorkee's Sanskrit Club, in collaboration with Samskrita Bharati, presented the book "SubhashitaSamskritam"



**Roorkee Water Conclave 2024 Concludes with Resounding Success**

The Roorkee Water Conclave 2024, the third edition of the prestigious conference series, concluded successfully, bringing together over 50 international experts and 12 sponsors/exhibitors to address critical water-



**Innovation in Education: IIT Roorkee Launches Advanced Curriculum for Post**

IIT Roorkee revised its Post-Graduate curriculum to align with NEP 2020, aiming to improve the quality, relevance, and competitiveness of its academic programs. This ensures graduates are well-prepared



**IIT Roorkee and Micron sign MoU to foster innovation and develop highly skilled**

Research, experiential learning opportunities for students, cultivating student recruiting activities, and industry-relevant training are included in the MoU.





**IIT Roorkee Hosts the Indo-Europe Heritage Network General Assembly 2024**

The IIT Roorkee hosted the Heritage Network General Assembly Meeting 2024 during April 8-11, 2024, with the participation of Heritage Network member universities from Europe & India.



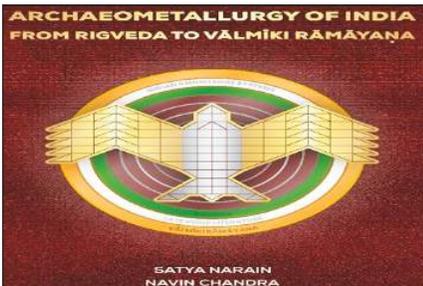
**IIT Roorkee licences 3 environmentally sustainable tech to Permionics Global**

The Indian Institute of Technology (IIT) Roorkee on Monday signed a technology transfer agreement with Gujarat-based Permionics Global Technologies for licensing of three innovative, environmentally



**Successful Inaugural Session Marks Commencement of CerAP2024 at IIT Roorkee**

The 4th Global Ceramic Leadership Roundtable, themed "Ceramics for Frontier Sectors: Emerging Advances and Prospects (CerAP2024)", commenced its journey with an illustrious inaugural session at IIT



**IIT Roorkee Unveils India's Historical Engineering Excellence with Metallurgical**

Indian Institute of Technology (IIT) Roorkee has made a significant contribution to the study of India's ancient metallurgical heritage with the release of "Archaeometallurgy of India from Rigveda to



**IIT Roorkee Establishes MHI Center of Excellence & Industry Accelerator on AARTI**

The Ministry of Heavy Industries (MHI) and the Indian Institute of Technology (IIT) Roorkee are collaborating to launch initiatives in line with the vision of Viksit Bharat, as envisaged by Prime Minister



**IIT Roorkee conclude international conference on geomatics in civil engineering**

The Indian Institute of Technology (IIT) Roorkee's civil engineering department concluded a two-day International Conference on Geomatics in Civil Engineering (ICGCE) 2024.



**Fossils of massive prehistoric snake found in lignite mine in Gujarat**

Researchers at the Indian Institute of Technology (IIT) Roorkee have reported the discovery of fossils of one of the largest snakes that ever existed and likely lived 47 million years ago during a period called the



**IIT Roorkee organises awareness programme on MSME Innovative (Design) Scheme**

Department of Design, Indian Institute of Technology Roorkee (IIT Roorkee) organised an Awareness Programme on MSME Innovative (Design) Scheme



**IIT Roorkee Hosts International Workshop on Social Determinants of Lifestyle**

The Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee (IIT Roorkee) organized an enlightening workshop titled "Social Determinants of Lifestyle Related Chronic





**IIT Roorkee, IIT Bhilai partners to preserve and promote Indian Knowledge System**

IIT Roorkee and IIT Bhilai signed an MoU on December 29, 2023 to strengthen the academic and research collaboration between the two institutions.



**IIT Roorkee's 'National Workshop on Earth Sciences' concludes**

The Indian Institute of Technology (IIT) Roorkee hosted the three-day National Workshop on Earth Sciences which concluded today.



**IIT Roorkee Sets the Stage for Revolutionary Insights at the Indian Geotechnical**

IIT Roorkee inaugurated the Indian Geotechnical Conference 2023 (IGC 2023) on December 14, 2023, at the Convocation Hall, signalling the start of discussions on 'Geotechnical Advances in Sustainable



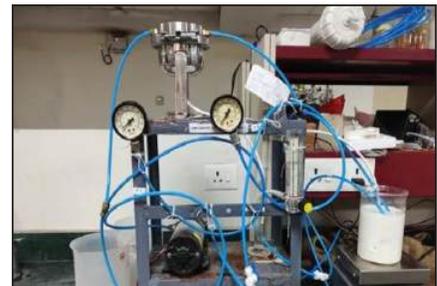
**IIT Roorkee's '2nd International Meeting on Energy Storage Devices 2023'**

The Indian Institute of Technology Roorkee (IIT) has kicked off the second international meeting on Energy Storage Devices 2023 and Industry-Academia Conclave on Thursday.



**IIT Roorkee Researchers developing sustainable technologies to tackle Plastic**

IIT Roorkee researchers are developing sustainable technologies to tackle plastic and e-waste. The large generation of plastic waste and electronic waste (e-waste) has become a matter of concern due to



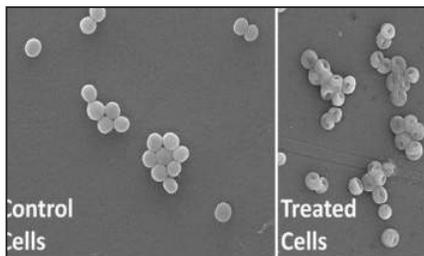
**IIT Roorkee research team develops a one-step separation of milk fat globules**

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



**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.



**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



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

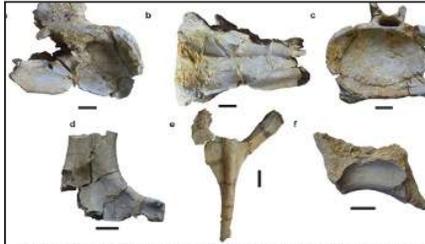
Researchers from the Centre for Nanotechnology at IIT-Roorkee have claimed to have developed a "first of its kind titanium-based coating" that would enhance the durability of the components of naval





**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



Neck vertebra of *Therapsaurus indicus* (a) side view, (b)undersurface view; (c)back view. Neural spine-vertebra of *Therapsaurus indicus*, (d) front view. Ribs from trunk region of *Therapsaurus indicus*, (e) front view, (f) side view. Scale bars represent 50 mm.

**A Desi Dinosaur Discovered: Oldest Plant-Eating Dicaeosaurid Unearthed**

Scientists from IIT-Roorkee and Geological Survey of India unearth the fossil remains of a new plant-eating dicaeosaurid dinosaur in Jaisalmer, further establishing India as a prominent hub of dinosaur evolution.



**IIT Roorkee researchers help in understanding humming of our universe observed**

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,



**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.



**IIT Roorkee pioneers novel catalyst to alleviate environmental impact**

Scientists at IIT Roorkee have unveiled an innovative catalyst designed to tackle the burgeoning concern of antibiotic pollution in the environment.



**Oldest yet fossils of a plant-eating dinosaur found in Rajasthan**

In a paper published recently in Scientific Reports, scientists from IIT Roorkee have characterised dinosaur fossils from the Middle Jurassic period, found in the Thar desert near the Jaisalmer Basin by the



**The Oldest Plant-Eating Dinosaur Has Been Found in India**

The Thar Desert today is a scorching region in western India's Rajasthan state. But in the Mesozoic Era, it was a tropical shoreline along the Tethys Ocean, inhabited by dinosaurs and marine creatures.



# Research and Development Activities

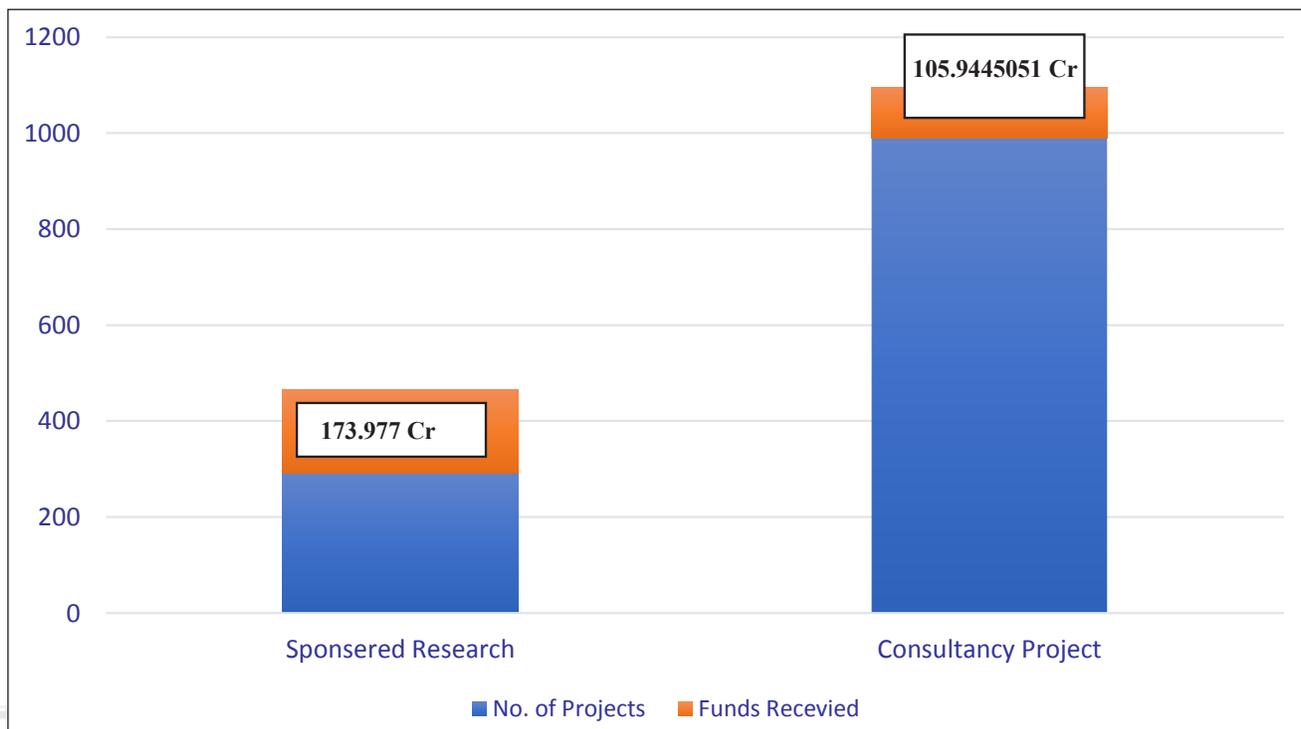
In financial year (FY) 2023-24, IIT Roorkee received external funding of Rs.279.917 crores for R&D-related activities. This included funding from government agencies, industries, and others within and outside India.

## 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 291 sponsored research projects with a total outlay of 173.977 Lakhs have been signed in this year. Similarly, a total of 990 consultancy projects with a total outlay of 105.9445051 Lakhs have been signed

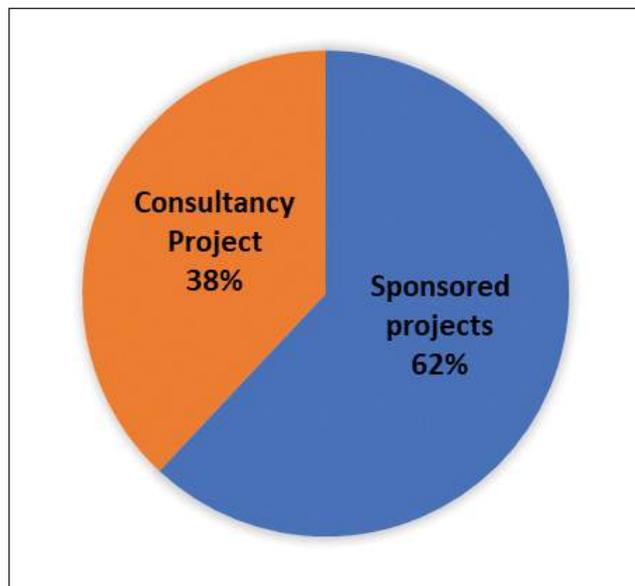
FY	Sponsored Projects		Consultancy Projects	
	Number	Sanctioned Outlay	Number	Project Outlay
2020-2021	148	7.51280	637	53.5213879
2021-2022	201	101.0213600	765	59.7390839
2022-2023	188	196.408	1122	82.67091
2023-2024	291	173.977	990	105.9445051



## External Funding for R & D

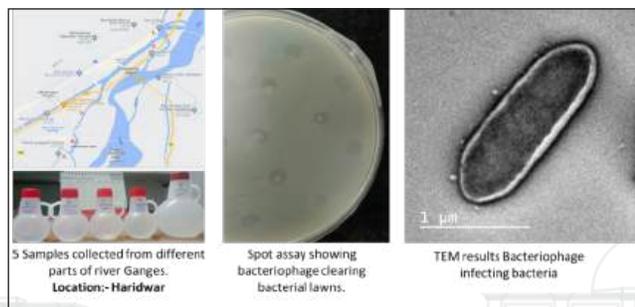
In FY 2023-24, IIT Roorkee received sponsored projects of 172.777 crore and Consultancy Project of 105.9445051, from private and government agencies.

Some of the major projects are:



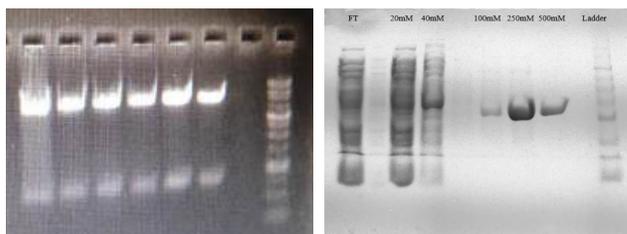
### 1. Developing a phage-based strategy against antimicrobial resistance (AMR) bacteria using the Ganges water.

The initiative involves isolating bacteriophages from Ganges water and assessing their specificity against antibiotic-resistant ESKAPE pathogens. Structural and biophysical analysis follows identification, leading to pre-clinical studies for combinatorial phage therapy development. This approach aims to combat antibiotic resistance, promising novel therapeutic interventions.



### 2. Enzyme engineering for the development of biofilters for plasticizers bioremediation in household water and STPs

The project involves identifying plasticizer-degrading strains and their enzymes, followed by cloning, expression, and purification. The biophysical and biochemical analysis informs their properties. X-ray crystallography determines enzyme structures for mechanistic understanding. Engineering via site-directed mutagenesis enhances efficiency and substrate specificity. Ultimately, enzyme-based biofilters are developed for sustainable plasticizer degradation, mitigating environmental pollution.



### 3. Industry Accelerator On AARTI (Automotive and Allied Research and Technology Innovations)

This project represents a joint effort to launch advanced initiatives for creating a Centre of Excellence (CoE) and an Industry Accelerator at IIT Roorkee under the Scheme for Enhancement of Competitiveness in the Indian Capital Goods Sector Phase II of MHI. This collaboration seeks to utilize the combined knowledge and resources of both organizations to support groundbreaking projects that will influence the future of transportation. Through this partnership, numerous start-ups have joined forces with IIT-Roorkee to pioneer projects in electric vehicles, significantly contributing to the nation's self-reliance in the e-mobility sector.



## Some major sponsored projects initiated are:-

- **Developing a phage-based strategy against antimicrobial resistance (AMR) bacteria using the ganga water**  
**Funding Agency:-** THDC INDIA LTD. (A JOINT VENTURE OF GOVT. OF INDIA & GOVT. OF U.P.)  
**Sanctioned Outlay (Cr.):**- 1.661
- **Enzyme engineering for the development of bio-filters for plasticizers bioremediation in household water**  
**Funding Agency:-** THDC INDIA LTD. (A JOINT VENTURE OF GOVT. OF INDIA & GOVT. OF U.P.)  
**Sanctioned Outlay (Cr.):**- 1.661
- **Establishment of DRDO industry academia - center of excellence (DIA-COE) IIT Roorkee**  
**Funding Agency:-** DRDO  
**Sanctioned Outlay (Cr.):**- 9.453
- **Fabrication of 2d transition metal dichalcogenides-based devices for optoelectronics applications**  
**Funding Agency:-** DRDO  
**Sanctioned Outlay (Cr.):**- 1.276
- **Adaptation of indigenous and local knowledge systems and fintech solutions for comprehensive tribal development in Chhattisgarh state**  
**Funding Agency:-** IIT BHILAI INNOVATION AND TECHNOLOGY FOUNDATION (IBITF), RAIPUR CHHATISGARH  
**Sanctioned Outlay (Cr.):**- 3.35
- **Industry accelerators on aarti (automotive and allied research and technology innovations)**  
**Funding Agency:-** MINISTRY OF HEAVY INDUSTRIES, NEW DELHI  
**Sanctioned Outlay (Cr.):**- 16.0545
- **Centre of excellence on aarti (automotive and allied research and technology innovations)**  
**Funding Agency:-** MINISTRY OF HEAVY INDUSTRIES, NEW DELHI  
**Sanctioned Outlay (Cr.):**- 8.61
- **International center of excellence for dams (ICOED)**  
**Funding Agency:-** CENTRAL WATER COMMISSION, DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & MINISTRY JAL SHAKTI, GOVERNMENT OF INDIA  
**Sanctioned Outlay (Cr.):**- 108.01

## Some major Consultancy projects initiated are:-

- Construction quality audit of the building blocks at Meerut
- Design, development & implementation, operation & maintenance of web-based integrated land records management system software for computerised (automated) spatial and textual mutation and real-time updation of map and records
- Proof checking of structural design of extra dosed bridge unit - 2
- Design and DPR for infrastructural services (road, drainage, water supply & sewerage) for greenfield township, Ayodhya
- Proof consultancy work of "final location survey (fls) using modern survey technologies for new broad gauge line from Tanakur to Bageshwar (approx 170.721 km) in the state of Uttarakhand, India"
- Assessment of e-flows and delineation/identification/ marking of the flood plain of river Yamuna from Shahpur to Prayagraj

The Institute released funds to the tune of Rs. 3.29 crores in total for R&D related activities. Funds to the tune of Rs 3.13 crores were sanctioned as FIG for initiation of research for new faculty members. The funds released by the Institute during the FY 2023-24 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) 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 22 projects have been sanctioned with a total outlay of 15.75 lakhs.
- 3) 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

In order to leverage Industry Academia linkages, institute continuously promotes the activities like participation in corporate summits, cooperate lectures, 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 66 MoUs were signed with various government and private entities. The list is as follows:

1.	NCDR Taiwan & COEDMM IITR
2.	National Power Training Institute NPTI
3.	NTTM Ministry of Textiles, GOI
4.	Government of Odisha (Department of Water Resources)
5.	The M.K. Morse Company, USA
6.	Azbil Corporation
7.	Mishra Dhatu Nigam Limited MIDHANI Hyderabad
8.	Deendayal Research Institute (DRI)
9.	IOCL & IITR
10.	Watershed Development & Soil Conservation Department, Government of Rajasthan
11.	NID Haryana & IITR
12.	NITTTR Chandigarh
13.	Survey of India & IITR
14.	Protecon BTG Private Limited (PBTG)
15.	Laghu Udyog Bharti, Saharanpur
16.	Dev Sanskriti Vishwavidyalaya Haridwar
17.	TIH & IITR
18.	Central Power Research Institute (CPRI)
19.	International Center for Automotive Technology ICAT
20.	Carbon U Turn Technology Pvt. Ltd.
21.	Shigan Nexgen Technologies LLP
22.	SIDCUL Manufacturers Association Uttarakhand (SMAU)
23.	University of Patanjali
24.	Central Sanskrit University, New Delhi
25.	THDC (Generic MOU)
26.	THDC (7 MoU's)
27.	Sanskrit Promotion Foundation, New Delhi
28.	IIRS, ISRO
29.	NIT Uttarakhand
30.	Damodar Valley Corporation
31.	LUMAX Industries Limited
32.	CRISP Bhopal
33.	ITC Limited
34.	Indian Industries Association (IIA)



35.	Odisha Integrated Irrigation Project for Climate-Resilient Agriculture (OIIPCRA)
36.	ICAR, National Institute of High-Security Animal Diseases, Bhopal
37.	VR Consultant
38.	Railtel Corporation
39.	Centre of Innovation and Applied Bioprocessing, (CIAB)
40.	IIT Bhilai
41.	NTRO
42.	CSIR-AMPRI
43.	Hemvati Nandan Bahuguna Garhwal University (HNBGU)
44.	Micron Technologies LLP
45.	NIT Jalandhar
46.	Sardar Swaram Singh Institute of Bioengineering Kapurthala (SSIB)
47.	Tata Power Delhi Distribution Limited
48.	Novius Technologies India Private Limited
49.	Engineers India Limited
50.	Director General Armed Forces Medical Services-(DGAFMS)
51.	REC Institute of Power Management & Training
52.	Vyom Space Exploration and Services Private Ltd.
53.	NIH-IITR THDC (3 Mou's)
54.	MHI- Industries Accelerator
55.	Office of Relief Commissioner (Revenue Dept.)
56.	FutureWiz LLP
57.	Jaro Institute of Tech Management & Research
58.	HunarHo
59.	National Highway Logistics Management Limited & Vishakhapatnam Port Road Company Limited & IIT Roorkee
60.	Telecommunication Consultants India Limited, TCIL
61.	Central Power Research Institute (CPRI)
62.	AIESKY Advisory & Consultancy Services
63.	NITTTR Signs MoU with IITR
64.	Survey of India signs MoU with IITR
65.	Laghu Udyog Bharti, Saharanpur Signed MoU with IITR
66.	Future Tech Wizards LLP signs MoU with IITR



Some of the prominent MoUs are:

- **The Odisha government has signed an MoU with the Indian Institute of Technology (IIT)**

The Department of Water Resources (DoWR) and IIT-Roorkee signed the Memorandum of Understanding (MoU) for the preparation of the State Specific Action Plan (SSAP) on the water sector for Odisha in the presence of Minister of Water Resources Tukuni Sahu and Development Commissioner Anu Garg in Bhubaneswar.



- **MoU with NCDR, Taiwan for Mutually Developing Technology**

The objective of the MoU is to mutually develop technology solutions to natural hazards, including earthquakes, landslides, floods, debris flow, and compound disasters. The researchers from IIT Roorkee and NCDR aim to co-establish an early warning sensor network equipped with P-Alert sensors at selected locations in Uttarakhand.



- **MoU with National Power Training Institute (NPTI)**

The 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).



- **MoU with M K Morse Company**

The faculty members of the academic institution and the company's engineers would engage in mutually agreed collaborative research as and when necessary, utilizing each other's expertise and facilities on mutually agreed terms and conditions.



- **Soil Conservation Department, Government of Rajasthan has signed an MoU with IITR**

The objective of the MoU was to Partnering and support each other in capacity and Joint academics and lastly to Exchange of Knowledge, Publications, etc.



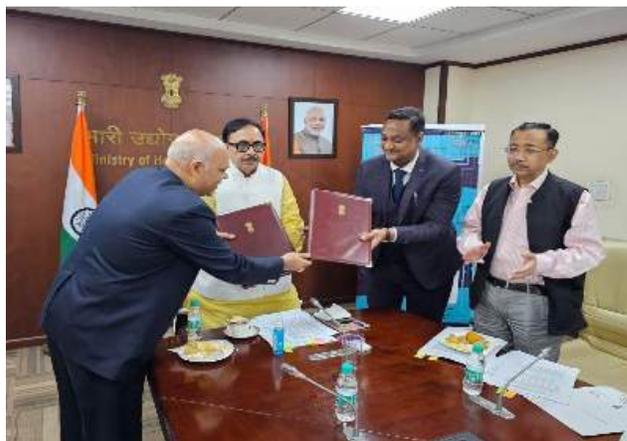
- **Protecon BTG Private Limited has signed an MoU with IITR**

To set up a platform under Industry-Academia collaboration for enhancing the employability of young Engineers and upgrading the professional knowledge of working professionals.



- **International Center for Automotive Technology ICAT signed MoU with IITR**

To further strengthen the partnership and to build a Center of Excellence (CoE) for Innovation and Consultancy for the development of India's first ADAS system, 6G technologies, smart vehicle propulsion systems, AI-assisted ADAS including database development & designing algorithms, Joint R&D on hybrid engines.



- **SIDCUL Manufacturers Association signs MoU with IITR**



- **NIT Uttarakhand signs MoU with IITR**



- **Damodar Valley Corporation signs MoU with IITR**



- **LUMAX Industries Limited signs MoU with IITR**



- **Centre for Research & Industrial Staff Performance (CRISP) Bhopal signs MoU with IITR**

To further signify a substantial leap towards fostering educational and innovative initiatives and improving the sustainability of industrial operations, marking a crucial stride in the growth trajectory of Uttarakhand.



- **Odisha Community Tank Development and Management Society, Bhubaneshwar signs MoU with IITR**

To focus on enhancing the capacity of 160 field engineers/officers in the Minor Irrigation (MI) Organization under the Department of Water Resources, Odisha. The collaboration prioritizes training in cutting-edge Water Resources Management technology, particularly in Minor Irrigation Systems. A major step towards a sustainable future.



- **IIT Bhilai signs MoU with IITR**

To strengthen the academic and research collaboration between the two institutions. This strategic partnership aims to preserve and promote Indian Knowledge Systems (IKS) and seeks to contribute to socio-economic development in tribal areas, emphasizing research on traditional medicinal plants, tribal culture studies, agricultural practices in tribal regions, and financial literacy among tribal populations.



- **CSIR-AMPRI Bhopal signed an MoU with IITR**

To engage faculty members & researchers while utilizing each other expertise and facilities in the areas of lightweight materials, radiation shielding materials, hybrid wood composites, smart and functional materials, building materials, water resources management, etc.



- **Engineers India Limited signed an MoU with IITR**

To develop the following collaborative activities in the research areas of mutual interest, on a basis of equality and reciprocity collaborative research as and when necessary.

- **Hemvati Nandan Bahuguna University Garhwal signs MoU with IITR**

To have joint & collaborative research & mutual exchange of Innovation, Scientific Meetings, conferences, teaching, and technical expertise.



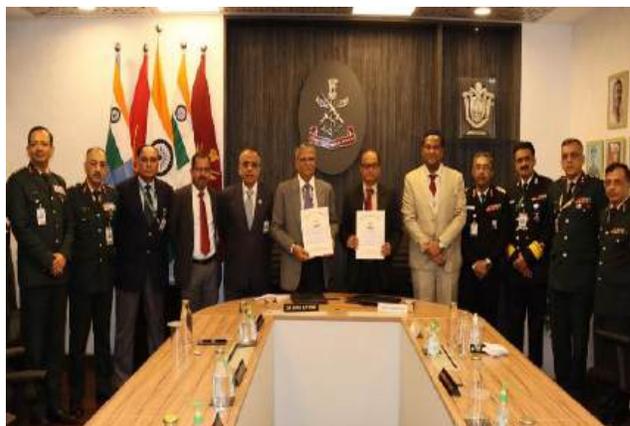
- **Director General Armed Forces Medical Services (DGAFMS) signs MoU with IITR**

To promote Collaborative research in biomedical aspects of Combat Medical Support and hospital care. Faculty exchange programs, joint academic activities, and events towards the mutual exchange of ideas, and furthering medical research in AFMS, and nanotechnology.



- **Micron Technologies signs MoU with IITR**

To collaborate and contribute both organizations are primed to play a pivotal role in shaping India's semiconductor landscape, contributing significantly to the nation's development goals by 2047.



- **Jaro Education signs MoU with CEC, IITR**

To enhance the professional knowledge and cutting-edge skills of young professionals, students, and individuals by offering certificate courses in the latest and in-demand technologies.



- **Hunarho Learning Solutions Private Limited signs MoU with IITR**

To offer hybrid and online certification programs in subjects and domains as mutually agreed between the Parties as per CEC guidelines of IIT Roorkee.



## Intellectual Property Right Activities

The Institute's IPR Cell is the hub for all activities related to Intellectual Property. The range of work of the IPR Cell includes filing and managements of all types of IP's. Further, IPR Cell also facilitate the preparation of patent application for facilitating the granting process and further commercialization of technologies. To improve in TRL level of technologies TRLB scheme was launched in 2022. Afterwards, many inventors received Institutional support for improving the TRL level of their respective technologies. IPR Cell makes constant efforts to raise awareness on departmental & Institutional level through different workshops, and other informative sessions to encourage students and faculty members to invest in their own innovative ideas and protect their intellectual assets.

The regular components of IPR cell webinars include training on prior art search using XLSCOUT and Derwent Innovation databases. Periodically, a lot of IPR competitions are also held. A number of webinars, expert talks, and workshops were held in an attempt

to create a comprehensive IP ecosystem. The IPR Cell is dedicated to process, streamlining and accelerating the application and granting of intellectual property is seen a record-breaking 120 patent applications, with 141 being granted.

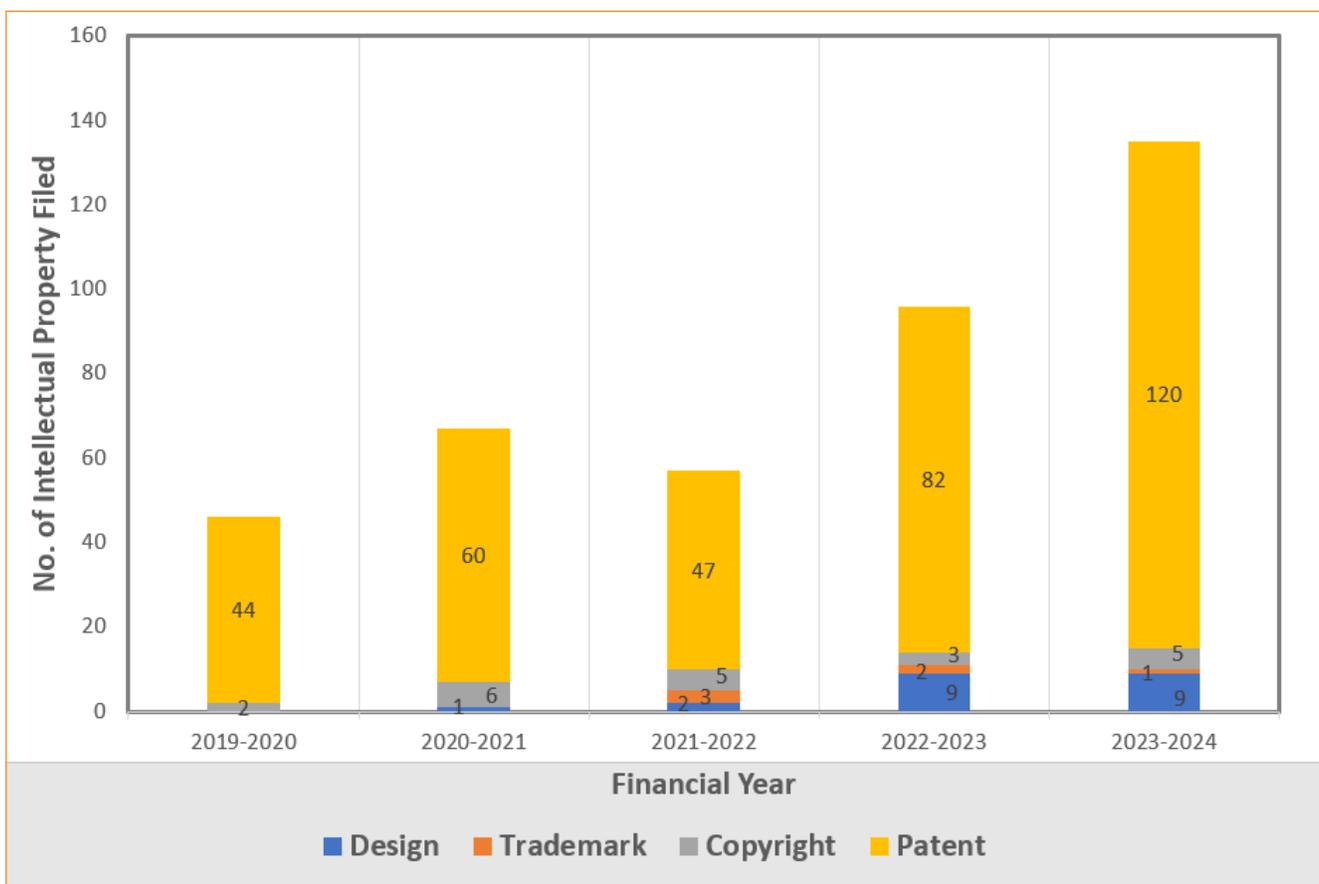
### IP Filing

In the dynamic landscape of intellectual property (IP) innovation, last financial year marked a significant surge. During this time frame, the Intellectual Property Rights (IPR) Cell was abuzz with various activity, having received a notable influx of 152 IP applications from the pool of students and academic members. These submissions underwent meticulous scrutiny by the Intellectual Property Assessment Committees (IPACs), leading to a remarkable outcome of 120 patents being filed. This period epitomized a thriving culture of creativity and ingenuity, culminating in tangible contributions to the realm of intellectual property.



**Table 1:** Patents and other IPR Applications filed FY 2023-24

IP type	Applications filed (No.)	Granted (No.)
Indian Patents	120	144
Foreign patents	1	00
Trademark	1	1
Industrial Design	8	9
International Design	1	1
Copyright	5	4
Total IPs	136	159



**Figure 1:** Number of intellectual property applications filed in the last five years



## Licensing Activities in FY 2023-24

### Support to Entrepreneurship

At IIT Roorkee, fostering a culture of innovation and entrepreneurship is paramount. The campus provides a conducive environment for the emergence and development of scientific endeavors, driven by the institution's resolute backing and facilities. These initiatives, which are the result of cutting-edge technologies, are proof of the innovative spirit and teamwork that are deeply rooted in the IIT Roorkee innovation ecosystem. During last financial year 07 start-ups have been created in IIT Roorkee for translating the technologies which includes:

- OJAS-SEMI
- E3BIOCLEANTECH Pvt. Ltd
- M/s DIPAK Jantech Pvt. Ltd.
- SAI-EWS
- M/S DWAAR Pvt. Ltd.
- Bio Informatics

### Technology licensed in the last Financial year

Technology transfer and commercialization are crucial processes for bringing innovations from research labs to the marketplace to bring it real ecosystem, IPR Cell works on following key aspects of technology :

- Identification of Technology: Researchers or innovators identify technologies with commercial potential
- Market Assessment: An analysis is conducted to understand the market demand, competition, and potential customers
- Licensing or Collaboration:
- Assistance may be provided to the licensee for integrating the technology into products or processes

In Last financial year following technologies have been licensed

### A water-soluble acrylic–styrene co-resin formulation and its method of synthesis, licensed to M.S. Papers Delhi.

By Prof. Dharm Dutt, Prof. Anurag Kulshreshtha, Prof. Akshay Dvivedi, Prof. Millie Pant and Brahma Prakash (DPT, MIED and AMSC)

The present invention relates to water-soluble acrylic–Styrene co resin formulation for paper and paper board coating applications and its method of synthesis. It comprises waterborne acrylic-styrene copolymer resin (acrylic-st-co-resin). The coating is performed by gravure cylinder on the paper and paper boards. Butyl acrylate (BA) is a soft monomer that enhances the chain flexibility of waterborne resin. Methacrylic acid (MAA) is the functional monomer that enhances the solubility of the resin in water and also binds resin to the substrate to achieve the required adhesion and Grafting of Styrene (ST) to enhance the film-forming property of resin with paper surface. Coated paper and paper boards can be recycled and repulpable due to water-soluble nature of coated resin after disintegration soaking with 2-5% of NaOH solution.



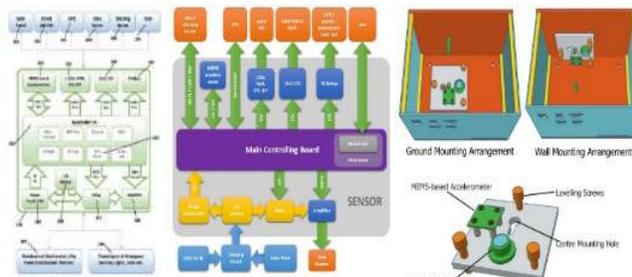
### A strong ground motion sensor, licensed to Seismic Hazard and Risk Investigations Pvt Ltd.

By Prof. Ashok Kumar, Prof. Ravi Sankar Jakka, Prof. M L Sharma, Pro. Kamal and Mr. Govind Rathore (EQD & ES)

The present invention relates to a low-cost accelerometer sensor, which is an EEW sensor. The strong ground motion sensor operates with solar light has a dual mounting facility. The sensor has inbuilt SIM card support for providing Internet Connectivity. It works as a simple data recorder or as an onsite earthquake early warning system or as a sensor to transmit real-time strong ground motion data to one or more servers or as a siren/relay for regional EEW system or as a combination



of these. Three LED lights have been provided for quick information about the status. The sensor is provided with a web-based portal for configurations.



**Baseband controlled linearization of high power amplifiers, licensed to Linearized Amplifier Technologies and Services Private Limited.**

*By. Prof. Meenakshi Rawat, and Dr. Girish Chandra Tripathi (ECE)*

The invention of the present method can comprise hardware, software or firmware code executing on the computer, microprocessor, DSP processor, microcontroller implemented in a field-programmable gate array (FPGA) or in the Application-specific integrated circuit (ASIC) or programmable logic.

**Multi-octave modes for switching power amplifiers, licensed to Linearized Amplifier Technologies and Services Private Limited.**

*By. Prof. Karun Rawat, and Dr. Yericharla Mary Asha Latha (ECE)*

Present invention relates to a switching power amplifier (SPA) operating over multi-octave frequency range. The switching power amplifier (SPA) consists of a switching transistor (S), a shunt capacitor (C) and a load network (N). The DC (IDD) is provided to the switching transistor (S) through the dc supply voltage VDD. The switching transistor (S) operates as a switch to achieve minimum overlap between the drain voltage and current waveforms. The capacitor (C) connected in shunt with the switching transistor (S) aids in the switching operation. The switching transistor (S) operates with the duty cycle of 50%. When the switching transistor (S) is on, the total current (i) flows through the switch (iS), and there will be no voltage across the switch (S). When the switching transistor (S) is off, the total current (i) flows through the capacitor (iC) and finite voltage exist across the switching transistor (S). The total current (i) comprises of DC (IDD) and load (iL) currents.



# Incubation Activities

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

Technology Innovation & Development of Entrepreneurship Society (TIDES) is a Society formed under the Society Registration Act, 1860 to promote innovation and entrepreneurship at IIT Roorkee and local Uttarakhand region.

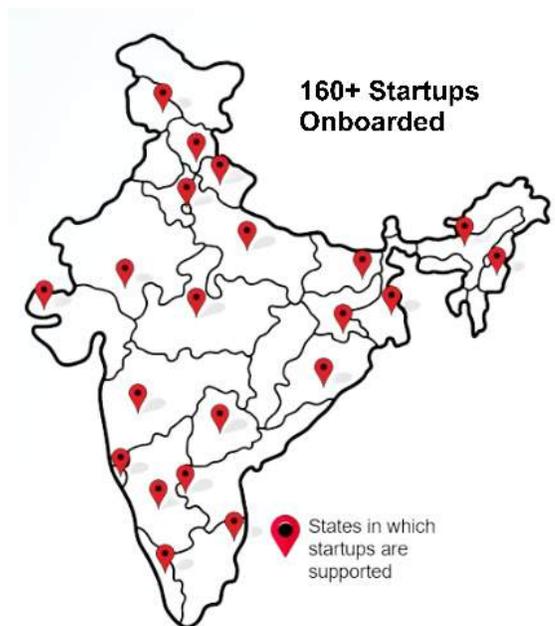
TIDES runs and manages a Business Incubator “TIDES Business Incubator” at IIT Roorkee to facilitate incubation of new startups with innovative technologies by incubating them. TIDES Business Incubator is recognized as a leading Incubator by Government of India.

## Startup Portfolio

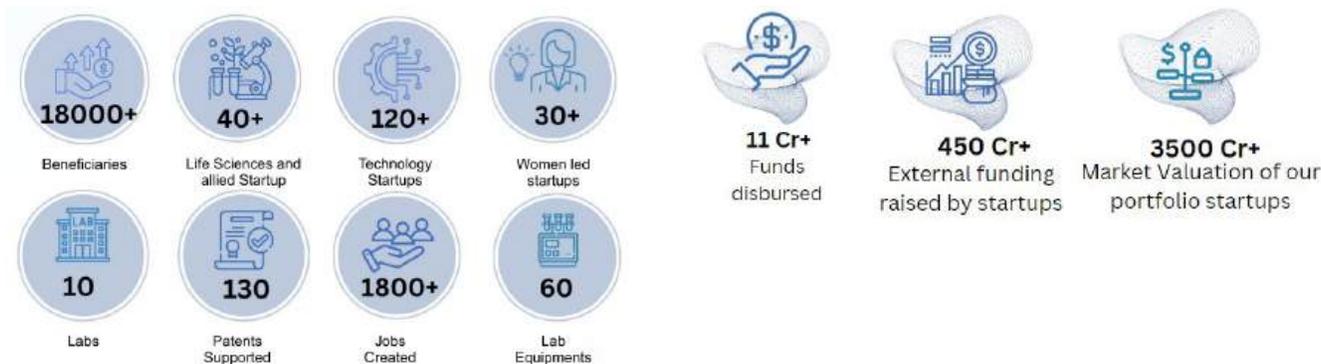
TIDES is offering two type of incubation programs as given below:

- 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 160 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 18,000 beneficiaries through its innovative initiatives. The incubator has supported over 40 life science and allied startups, 120 technology startups, and 30 women-led startups. TIDES has also equipped startups with over 60 advanced lab instruments, supported over 130 patents, and disbursed over 11 crore funds. The incubator’s portfolio startups have achieved a remarkable market valuation of over 3500 crore



## Funding and Acquisition

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



**12+**  
Startup funding programs



**5+**  
Ministries associated



## 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.



**60+**  
Ecosystem partners



## iHUB DivyaSampark, TIH

iHUB DivyaSampark is a section 8 company which is a Technology Innovation Hub, at IIT Roorkee set up under National mission on Interdisciplinary Cyber Physical Systems (NM-ICPS), initiated by Department of Science and Technology (DST) and Indian Institute of Technology Roorkee (IITR) to build innovative solutions, to train manpower and encourage entrepreneurship for the world's current challenges like Defense, affordable health care, Industry 4.0 and sustainable smart cities. iHUB's core focus is on fostering research and innovation to develop and commercialize products and technologies in CPS, with a particular emphasis on relevant and next-generation Smart Devices, Technologies and Materials.

### Focus Areas:

- Affordable health care
- Industry 4.0
- Sustainable smart cities
- Defence

### Activity Focus Area:

#### 1. Entrepreneurship development

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 26 start-ups with funding support worth Rs. 18Cr.

We provide support via:

- Incubation Support
- Entrepreneurship-in-Residence (EIR)
- Grant support for Prototype Development (Up to Rs. 10 Lakhs)
- Seed Funding (up to Rs. 50 lakhs)
- Acceleration Program (up to Rs. 2Cr)



\*No companies are graduate as all of them are in their initial stage.

#### 2. 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 **63+** projects with our Spoke Hubs

Also supporting **250+** young and innovative minds via Chanakya UG Fellowships



### 3. 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.

*iHUB Divyasampark have successfully established **30 labs** (across India) and **7 smart classrooms** (in North east region) focussing on IoT, Drone and AR/VR to provide access to cutting edge technologies and to improve the skillset to thrive in the digital age.*

*So far, we have trained **40,000 + Students & Faculties** via training programs in emerging technologies.*



### Intellectual Property Generated

#### Key points:

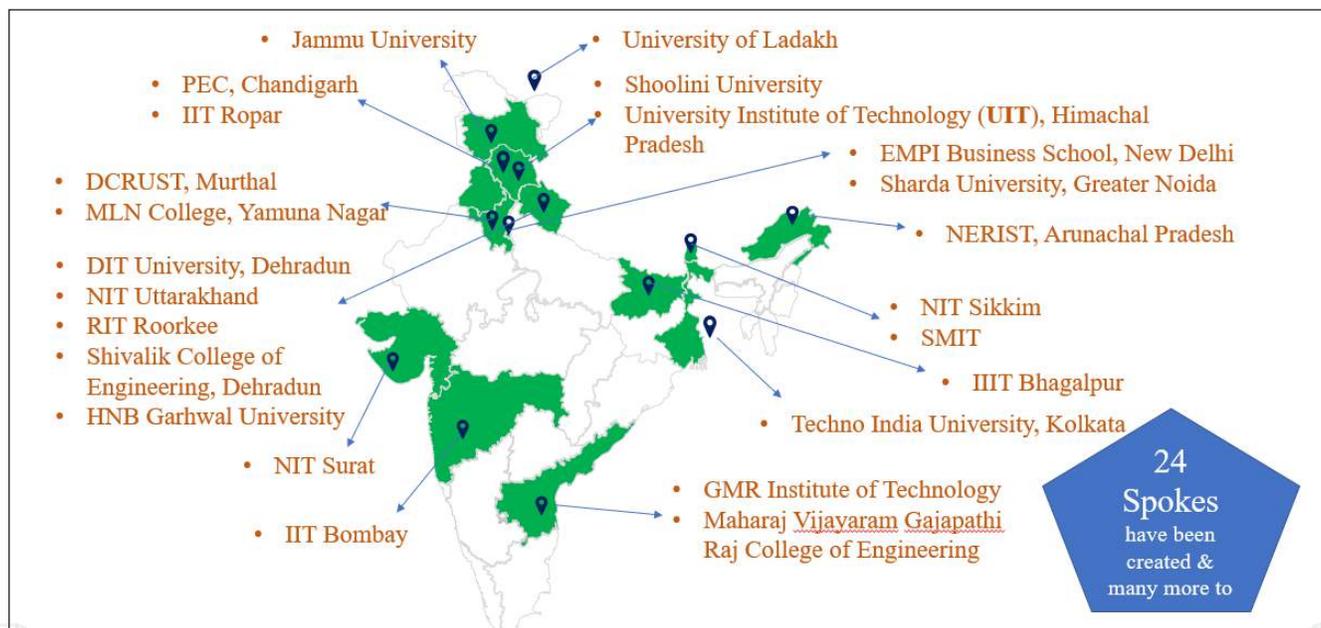
- 2 patents have been granted
- Filed and published 15 patents
- Filed 1 copyright application

### Alliances

To ensure that innovation can emerge from anywhere, including remote and hilly areas, iHUB DivyaSampark implemented a unique Hub-and-Spoke model and until now, we have established 24 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. The core hub coordinates with satellite “spokes” in various regions, actively engaging with local talent and startups. This approach extends our reach, supporting innovation in diverse landscapes, and underlines our commitment to making innovation thrive universally.

### Spoke Hubs of iHUB Divyasampark MoU, Partnership and Collaborations

- In the year 2023-24, iHUB Divyasampark has signed MoU’s with **10 Spoke Hubs** and **6 Industry Partners** to address regional challenges and offer localized solutions. Also signed MoU with **RITES** to explore business avenue.



## International Collaborations

1. Southern Cross University, (A body incorporated under the Southern Cross University Act, 1993), Military Road, East Lismore, 2480, NSW, Australia
  - Promoting cooperation in joint educational and training projects, research projects, and student recruitment.



Some glimpses of iHUB Divyasampark participating in various events:

## Awards received by the Startups associated with the Institute

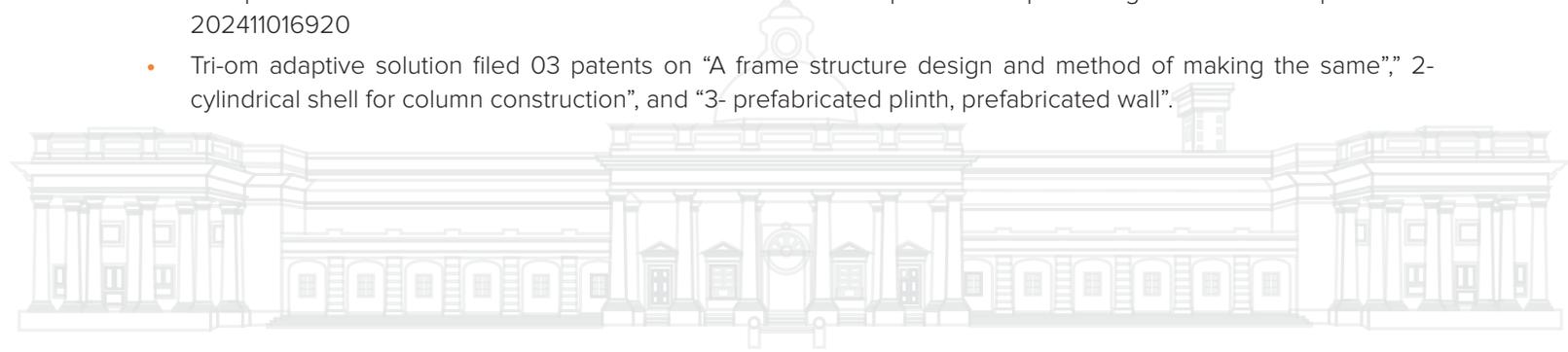
1.	Universally Green Technology Pvt Ltd has been shortlisted among top 100 startups of India by Leap to Unicorn conducted by IDFC First Bank, moneycontrol.com, CNBC TV-18.
2.	Akasha Labdhi Pvt Ltd has been awarded Best innovative startup of the year 2023-24 by Startup Odisha, Ministry of Industry.
3.	Avkalan Labs, won the prestigious 1st prize at the E-Summit'24. This event, organized by TIDES in collaboration with E-cell IIT Roorkee, Startup India, and Startup Uttarakhand.
4.	Indigenous Energy Storage Technologies Pvt. Ltd. ha been awarded 1st position under the category “Waste to energy solutions & recycling technologies” of SIDBI Young Environmental Champions Challenge.
5.	Startup Hornet Biologics is selected under ELEVATE 2023 call 2 (Grant-in-Aid)! Where evaluation committee has recommended INR 21,00,000/- (Rupees Twenty-One Lakhs only) for their idea/project under IDEA2PoC Grant-ion-Aid scheme (ELEVATE 2023 Call 2) of Karnataka Startup Policy 2022-27, KITS, Dept. of Electronics, IT, Bt and S&T Govt. of Karnataka.



6.	Ardent Privacy Pvt. Ltd. was awarded as winner of DISC-9 Cyber security by iDEX-DIO on August 29, 2023.
7.	JMV Bharat Pvt. Ltd. was the winner of iDEX DISC-10 BDL Challenge.
8.	Startup Fermentech Labs Pvt. Ltd., receives One LOI from the textile industry and one LOI from the animal feed industry, Fermentech enzymes also got NABL and FSSAI certifications. At E-Summit, IIM Amritsar, scored 2 runner up and awarded a cash prize of INR 1 Lakh.
9.	TRI-OM ADAPTIVE SOLUTION secured SISFS funds – 10 Lakh and was awarded best startup award by Startup Fest Gujarat.
10.	Startup Deeparogya scored Finalist of BIRAC “BIG” Grant, also scored Semi-finalist of Eureka “Asia’s Biggest Startup Competition”. Further scored the Finalist of IIT Delhi E-Summit for 1 minute to pitch competition and remain Finalist in a pitch competition at IIT Bombay.
11.	Startup GoHemp Agroventures Pvt. Ltd. Selected for FIED IIM and Birac Big Grant. Secured finalist position at National Startup Awards, at IDFC leaders of tomorrow awards. Also, winner at smart city expo and convergence EXPO 2024 held at pragati Maidan. At International level, they represented India at Bangladesh startup Summit, Hemp building symposium France and at Slush Finland. Startup was the winner of Parivartan startup Grant by HDFC
12.	Fuelcab Startup was winner of Startup Mantra 2022-23 and were awarded by Directorate of Technical Education Uttarakhand. They were also the Eureka Finalist 2024 and was honored with the prestigious Entrepreneur 40 under 40 accolade by BW-Business World.
13.	STICK Startup cleared two rounds of Shark Tank India Campus Special and got a call for Mumbai auditions. They were selected in SUPER 25 startups during Start-up Conclave organised by Udhmodya Foundation, University of Delhi. They also secured 1st position at Step Ahead - a startup competition organized by Innovation Council and University Incubation Centre, Aligarh Muslim University and got their trademark granted for the word STICK in class 42 by Intellectual Property India.
14.	Ballice Smart Devices Pvt. Ltd awarded as Best Start-up award at IIT Roorkee in India’s biggest renewable expo and also awarded as The Best Entrepreneur of the year 2023 award
15.	IDR R&D Development Pvt. Ltd Secured all India position 3 in idex Indian navy challenge across India also Recognized by Union Minister Dr. Jitender Singh at the “Indian Military Heritage Festival” 2023.
16.	Dheya Engineering Technologies Pvt. Ltd awarded as Karnataka Start-up award under Elevate-2023 by Govt of Karnataka
17.	Teqbot Innovations Pvt. Ltd awarded as Best Startup Award at UKUM 2023 in Uttarakhand Udyog Mohatsav.
18.	Jyoma Solutions Pvt. Ltd was the winner of the IDEX DISC 6 challenge rolled out by IOL for the Development of Gyro Chassis intended for use in the Gunner Sight of Tank T-90.
19.	Evigway Technologies Pvt. Ltd was selected as top 5 companies in Road To Unicorn by Ministry of Electronics and IT(MeitY) & ESC
20.	Unscene Innovations Pvt. Ltd was awarded for their efforts towards the development of Indigenous technology using Artificial Intelligence for the Defense by the Government of India.

## Patents Filed by Start up

- Fermentech filed a patent on “Method of production of xylanase, XoS and high calorific value fuel pellets” with patent no. 202311057283 and on “Solid substrate and a process for producing cellulase” with patent no. 202411016920
- Tri-om adaptive solution filed 03 patents on “A frame structure design and method of making the same”, “2-cylindrical shell for column construction”, and “3- prefabricated plinth, prefabricated wall”.



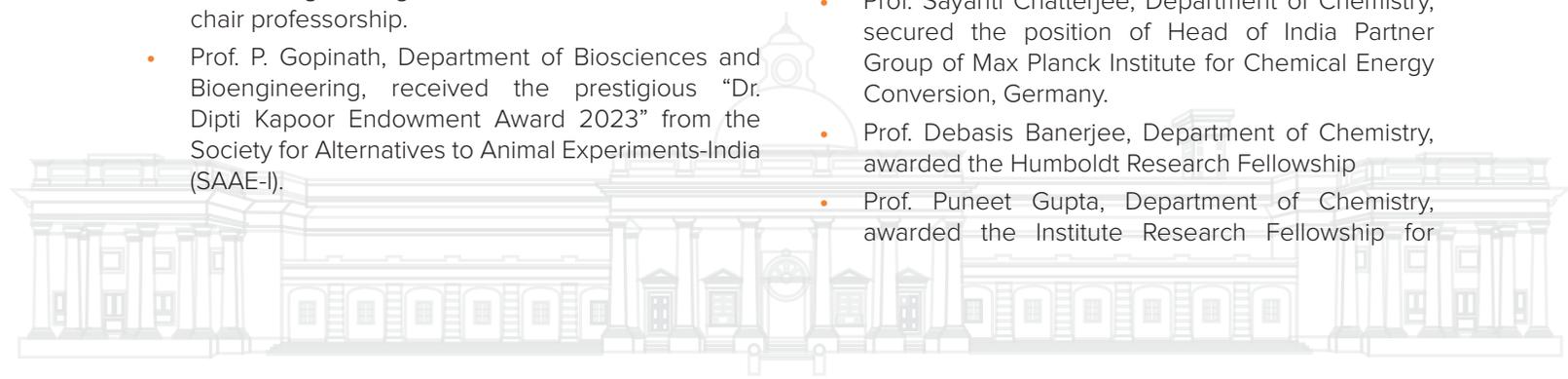
# Administration Affairs

The Institute's administrative procedures, services, and personnel management for non-project and non-teaching staff (permanent, temporary, and outsourced) are managed by the Office of the Dean (Administrative Affairs). To address this, the division is in charge of creating rules for administrative structures and linkages, assessing the need for staffing and manpower at different levels, defining job functions and profiles, authority levels and duties, recruitment policies, career and promotion stages, and the allocation and sanctioning of the best manpower resources to different units, in addition to hiring and recruiting related staff. kindly refer to the list of non-teaching officers below.

## Faculty Affairs

During the year, 33 faculty members (20 Assistant Professor Grade I, and 13 Assistant Professor Grade II) joined the Institute. The number of fulltime faculty members on the roll of the Institute has risen to 533 comprising 204 Professors, 121 Associate Professors, 170 Assistant Professors (Grade-I) and 38 Assistant Professors (Grade-II). In addition, there are 50 Adjunct faculty members and 30 post doctoral fellows on the roll. Around 10 faculty members retired, 9 of whom were re-employed and 3 resigned during the year. The Institute provided financial assistance to -- faculty members for participating in international conferences.

- Prof. Arindam Biswas, Department of Architecture and Planning, Expert group member of the "Building plan approval knowledge standards – Guidelines and specifications" by the Ministry of Housing and Urban Affairs, Government of India.
- Prof. Harshit Sosan Lakra Department of Architecture and Planning, International Facilitator, Center for Innovation in Procurement, Environmental and Social Standards (CIPESS), World Bank-assisted Centers of Excellence established by the Federal Government of Nigeria, 2023.
- Prof. Pravindra Kumar, Department of Biosciences and Bioengineering, received Ashok Soota Institute chair professorship.
- Prof. P. Gopinath, Department of Biosciences and Bioengineering, received the prestigious "Dr. Dipti Kapoor Endowment Award 2023" from the Society for Alternatives to Animal Experiments-India (SAAE-I).
- Prof. Ranjana Pathania, Department of Biosciences and Bioengineering, awarded with the Ramkumar Prize for Outstanding Teaching & Research.
- Prof. K. M. Poluri, Department of Biosciences and Bioengineering, received Prof. H S Atreya Award by Nuclear Magnetic Resonance Society (NMRS), India. In addition also received Science and Technology Award for Research (SERB-STAR) by Science and Engineering Research Board (SERB).
- Prof. Pranita P. Sarangi, Department of Biosciences and Bioengineering, received GPTalwar Mid-Career Scientist Oration Award at Indian Immunology Society, AIIMS, New Delhi, India.
- Prof. Zulfequar Ahmad, Department of Civil Engineering, received S N Gupta Memorial Lecture Award by Indian Society for Hydraulics.
- Prof. Satish Chandra, Department of Civil Engineering, received S. R. Mehra Memorial Award.
- Prof. Kaustav Chatterjee, Department of Civil Engineering, awarded with INSA Associate Fellow 2023 in Engineering and Technology by Indian National Science Academy.
- Prof. K. S. Hari Prasad,, Department of Civil Engineering, received Outstanding Teacher Award
- Prof. Siddhartha Khare, Department of Civil Engineering, received \$4000 CAN scholarship from Forest Study Center, Quebec, Canada
- Prof. Sonalisa Ray, Department of Civil Engineering, received Outstanding Young Faculty
- Prof. Vimal Kumar, Department of Chemical Engineering, received SIRE Fellowship.
- Prof. P Mondal, Department of Chemical Engineering, received Hiyoshi Think Ecology Award.
- Prof. Shishir Sinha, Department of Chemical Engineering, received Heritage Institute of Technology Award
- Prof. N.S.M. Reddy Department of Chemical Engineering was recognized as Young Influential Researcher – Asia -2023 by ACS IE&C.
- Prof. Sayanti Chatterjee, Department of Chemistry, secured the position of Head of India Partner Group of Max Planck Institute for Chemical Energy Conversion, Germany.
- Prof. Debasis Banerjee, Department of Chemistry, awarded the Humboldt Research Fellowship
- Prof. Puneet Gupta, Department of Chemistry, awarded the Institute Research Fellowship for



#### Outstanding Young Faculty.

- Prof. Raksha Sharma, Department of Computer Science and Engineering, received Qualcomm Innovation Fellowship.
- Prof. Rajrishi Chakravarti, Department of Earth Sciences, awarded the SERB international research experience fellowship.
- Prof. Jeevanand S., Department of Electrical Engineering, received SERB International Research Experience fellowship.
- Prof. Abdul Saleem Mir, Department of Electrical Engineering, received 2023 IEEE PES Outstanding Working Group Award for Outstanding Technical Report.
- Prof. Gowrish Basavarajappa, Department of Electronics & Communication Engineering, received young Professional Excellence Award.
- Prof. Sparsh Mittal, Department of Electronics & Communication Engineering, received Best paper award honorable mention” at AIML Systems Conference (Bengaluru). In addition also received best paper award” at COMSNETS India Internet Governance Workshop (Bengaluru).
- Prof. Priyansha Kaurav Department of Electronics & Communication Engineering, received Smt C Ranganayakamma Memorial Award
- Prof. Tharun Kumar Reddy, Department of Electronics & Communication Engineering, received Best poster award” at the NYC IKS Conference and at the IEEE INDISCON Conference.
- Prof. Abhay Kumar Sah, Department of Electronics & Communication Engineering, received MathWorks Research Award.
- Prof. Ankit Agarwal, Department of Hydrology, awarded the ‘IEI Young Engineers Award in the Environmental Engineering discipline. Also selected as a Young Outstanding Faculty and awarded with Institute Research Fellowship.
- Prof. Sanjeev Kumar Prajapati, Department of Hydro and Renewable Energy, Outstanding Young Faculty of the Year.
- Prof. Sonal K Thengane, Department of Hydro and Renewable Energy, received SRTF Fellowship.
- Prof. Vinay Sharma, Department of Management Studies, received AIMS International awarded AIMS-IBA & Outstanding Management Researcher Award
- Prof. Usha Lenka, Department of Management Studies, received AIMS IBA Outstanding Woman Management Research award.
- Prof. Ram Jiwari, Department of Mathematics, received Ulam NAWA Research fellowship, Polish National Agency, Poland.
- Prof. Sanjeev Kumar, Department of Mathematics, received Professor Bal Krishna Outstanding Teacher Award.
- Prof. Kaushik Pal, Department of Mechanical and Industrial Engineering, received Japan Society for the Promotion of Science (JSPS) Invitational Fellowship.
- Prof. Akshay Dvivedi, Department of Mechanical and Industrial Engineering Felicitated by the Hon’ble Governor of Uttarakhand for invaluable contributions for excellent leadership in the implementation of TechSarathi Scheme of Indian Institute of Technology Roorkee and invaluable contribution in promoting the development of MSMEs.
- Prof. Anjan Sil, Department of Metallurgical and Materials Engineering, felicitated as an exemplary scientist and educator in the field of Materials Engineering by Jiwaji University, Gwalior in its National Conference on “Emerging Trends in Materials Chemistry”
- Prof. Dharm Dutt, Department of Paper Technology, awarded with Gujrat Paper Mills Association.
- Prof. Kirtiraj K. Gaikwad, Department of Paper Technology, received FSSAI Research Award from Food Safety & Standards Authority of India (FSSAI), also received J.C. Bose Memorial Award.
- Prof. N C Mishra, Department of Polymer and Process Engineering, awarded with the Sushruta Memorial Award.
- Prof. Pradip Kumar Maji, Department of Polymer and Process Engineering, received Best Teacher award.
- Prof. Vipul Rastogi, Department of Physics, received Outstanding Teacher Award.
- Prof. Yogesh Kumar Sharma, Department of Physics, received, National Startup award in Energy Storage.
- Prof. Soumitra Satapathi, Department of Physics, received Best Young Scientist Award, and Fulbright Climate Fellowship.
- Prof. Ashish Pandey, Department of Water Resources Development and Management, received Bharat Singh Chair Professor by Ministry of Jalshakti, Govt. of India.
- Prof. Ramesh Chandra, Institute Instrumentation Center, received Hon'ble Raksha Mantri Shri Rajnath Singh award for his outstanding contributions towards developing technology for DRDO.

# Student Affairs

In 2023-2024, students maintained a high level of accountability and discipline while performing exceedingly well academically. We at Student Affairs have adapted to many new methods for managing and have worked tirelessly to assist students live balanced lives in harmony with their teachers, peers, and families. By gradually allowing re-boarding, it was ensured that the freshers could easily adjust to their environment. Orientation programs were held at the beginning of the academic term. The counselling program advised students on personal matters, financial difficulties, and psychological and emotional issues that were interfering with their academic aspirations. Student Affairs conducts all of its operations with the goal of helping students' academic endeavors while also encouraging general personality development, realizing their potential, and supporting their ideas, with a focus on responsible student leadership.

## Wellness Center

The wellness center hosted 38 programs from April 2023 to March 2024 to promote mental health literacy, preventive measures, interventions, and help-seeking in the IIT community. The center attended 1176 new cases, 2594 follow-ups, and mitigated 43 emergencies. It launched new initiatives, such as tracking students with low CGPAs, psychological profiling for new entrants, and orienting parents of newly admitted undergraduate students. Mental health literacy outreach programs targeted all sections, including Deans and security staff. The center also conducted the first Inter-IIT wellness meet, attended by wellness officials from 19 IITs.

Several events were organized, a few of them are Bicycles Donation for Needy UG Students, Program on Adolescents' mental health & Sexuality, On-Rec recorded a community outreach, An interactive group session dedicated to addressing exam stress was organized at different bhawans, Online training for counsellor on "Biograph infinity" Software & Biofeedback hard, Online Queer con, organized a worldwide campaign Brighter Tomorrow on World Suicide Prevention Day, **Mental health** literacy Month, Digital Detox", Student Mentorship Program, "Yaaron ki Mehfil, Sensitization program, Workshop in "Harmony in Relationship" many more.

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 as mentors to mentees. The program has implemented various initiatives, such as the SMP-AMP Collaboration, departmental cross-mentorship drives, career talks, mentor evaluations, recruitment panels, branch coordinators, mentor workshops, ice-breaking sessions, and Bhawan visits.

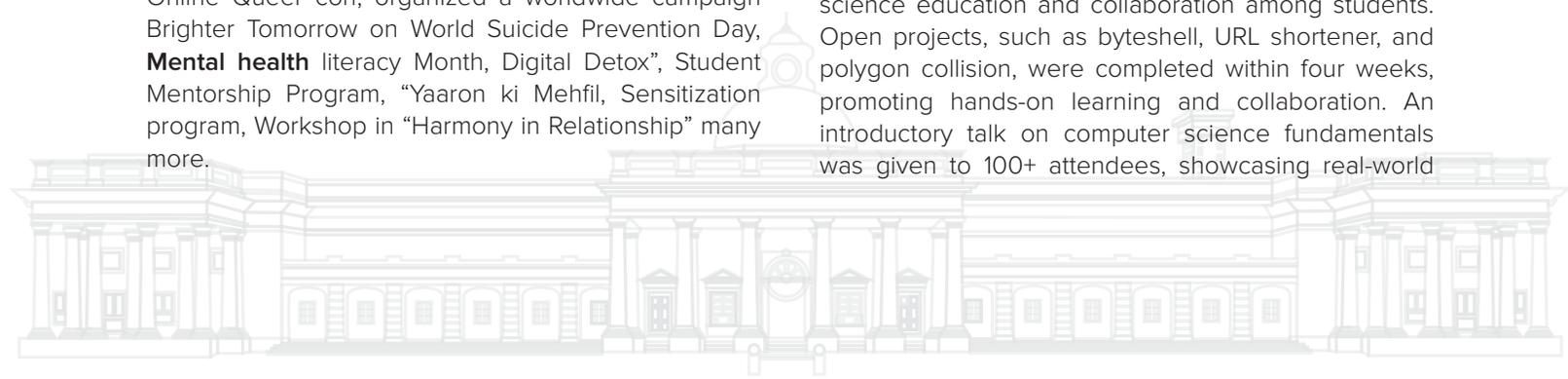
In April 2023, the SMP-AMP Collaboration was introduced, aiming to help first-year students adjust to college life. The program also introduced mentoring recruitments, branch coordinators, and a mentor workshop with the help of the Wellness Centre. In September 2023, a mentor's training workshop was conducted with the help of the Wellness Centre, and counselors were invited as speakers to guide newly recruited mentors.

The SMP Web Development team is working on a new official website and an app called Campus Connect, which facilitates communication between first-year students and SMP mentors at IITR. In April 2024, a departmental cross-mentorship drive was organized to avoid monotony and generate interactions with other mentors. To improve awareness about SMP, an email series for faculty was planned to send out information about SMP's mission and what they do to help first-year students. In March 2024, an annual evaluation of all mentors was conducted to ensure the continuous and beneficial functioning of the Mentorship program throughout the academic session. In conclusion, the Student Mentorship Program (SMP) and the Students' Aid Committee (StAC) are vital initiatives in supporting needy students in financial distress.

## Technical Affairs

### ACM Student Chapter

The institute hosted several events to promote computer science education and collaboration among students. Open projects, such as bytshell, URL shortener, and polygon collision, were completed within four weeks, promoting hands-on learning and collaboration. An introductory talk on computer science fundamentals was given to 100+ attendees, showcasing real-world



applications. An internal hackathon focused on parallel computing and Flutter development, fostering collaboration and creativity. An open discussion on operating systems covered kernel basics, networking, memory management, and synchronization/scheduling algorithms. A code decipher challenge was organized, allowing participants to test problem-solving skills and coding proficiency. The team is currently revitalizing KSOS, their operating system, and developing a VR renderer with advanced headtracking capabilities. Competitions, such as Inter IIT and Inter Bhawan, showcased the team's prowess in various problem-solving domains and fostered teamwork and camaraderie. The club's participation in Inter Bhawan events also fostered unity and collaboration among different residential communities. Two team members were selected for Google Summer of Code and one was runner up in the GCSC Kalyani Hackathon.

## AirSoc

The AirSoc Club has participated in numerous competitions and events, including gliders, DoBaSS-UAV, SAE Aero Design, Bionic Bird Simulation, Flight Fury at Cogni, and lectures on plane and drones overview. The club has manufactured nearly 20 gliders

and successfully modified an existing UAV model to incorporate VTOL features. The SAE Aero Design Competition aimed to foster skills in designing, building, and flying remote-controlled aircraft with specific mission profiles. The club also created a lightweight, efficient aircraft model that performed well in all test flights. The club also hosted a gliders workshop for first-year students, allowing them to construct their own gliders under the guidance of experienced club members. This initiative encouraged collaboration and teamwork, empowering participants to apply theoretical knowledge to real-world engineering challenges. The club's commitment to fostering interest in aviation among students and the broader community showcases its commitment to nurturing talent and expertise within the field of aerospace engineering. The AirSoc Club's involvement in national and international competitions has strengthened their technical capabilities and team's collaborative spirit. They are excited to build on their current projects and explore new opportunities in the world of aerospace technology. The club's achievements include the Best Project Award at TMI-101, Gold in Inter-IIT Low-Prep PS, Silver in InterIIT High-Prep PS, and Bronze in InterIIT High Prep PS (DevRev).



## ASME Chapter

The team participated in workshops such as Solidworks, AnSys software, ROS (Robot Operating System) workshop, Motor Driver workshop, and TinkerCAD workshop. They developed several projects, including a RAM-Effect Vehicle, a drone with 4 thrusters, a hand gesture mechanism, a gripper, and a cozmo clutch. They also developed a remote-controlled underwater vehicle with 10 degrees of freedom, capable of maneuvering in aquatic environments. They designed a single rod 8-thruster ROV to reduce drag and conducted ANSYS Fluent simulations. The 8-thruster model was built as a prototype for the Singapore Autonomous Underwater Vehicle Challenge, capable of moving in all 12 degrees of freedom. The team also designed a camera casing to ensure clear visibility in a 180-degree field of view. The gripper mechanism, consisting of folding mechanisms and a linear actuator, was designed skillfully on solidworks software. They competed in the IIT Bombay Tech Fest, where they built a remote-controlled boat and a plane. The finalized AUV participated in the SAUVC and secured 10th position at the international level.

## Blockchain Society

The Blockchain Society IITR at IIT Roorkee has 38 members and hosts various events and meetings. These include the S2D Hackathon, an ethereum-focused hackathon, an intro talk, a recruitment talk, a ZK lecture series, and projects like Open Stylus, Arcave, FlockChain, DappHack, HyperLand, HorseRiders, ZkMask, Sketch-Stylus, PrivateChainEx, PointCaster, and ReturnX. The society has participated in various hackathons and competitions, including ETH Mumbai Hackathon 2024, ETHIndia Hackathon 2023, ETHGlobal Paris 2023, Circuit Breakers 2024, Inter IIT Tech 12.0: Aptos Labs PS 2023, LFG GH0 Hackathon 2024, ink! Polkadot Hackathon 2023, Unfold 2023, Best Filecoin Project at ETHOnline 2023, and 2nd Position at Huffathon 2023. The society has also received awards such as the Google Summer of Code and yAcademy Security Research Fellowship. The society also hosts a ZK Lecture series, focusing on Zero Knowledge Proofs (ZKPs), fostering secure collaboration and data confidentiality. The society has also participated in various awards and fellowships, such as the Google Summer of Code and yAcademy Security Research Fellowship. The society's goal is to foster a culture of web3 development and promote decentralized innovation on campus.



## E-Cell

Development Cell IIT Roorkee (EDC IITR) was established in 2006 to foster and promote entrepreneurship among India's youth. The organization aims to ignite the minds and nurture the ideas of talented students, providing them with the right direction in the startup ecosystem. E-Cell IIT Roorkee organizes various events and initiatives, such as the Entrepreneurship Weekend, which celebrated World Entrepreneurship Day with a 3-day event. E-Cell organized several events, including a Business Model Canvas workshop, a Founder's Talk, an Entrepreneurship Quiz, and an Entrepreneurship-inspired Treasure Hunt. On August 21, an open house session with the administration of IIT Roorkee took place, where students engaged with the college's administrative authorities to discuss startup policies and avenues for enhancement. The E-Summit, a three-day extravaganza, honored the history and spirit of entrepreneurship and inspired leaders and problem solvers of today and tomorrow. The theme for this edition of the summit was "Ventura Incertus," which translates to "The Journey is Uncertain." The event brought together over 2000 people, including students, corporates, entrepreneurs, and budding enthusiasts from India and around the world.

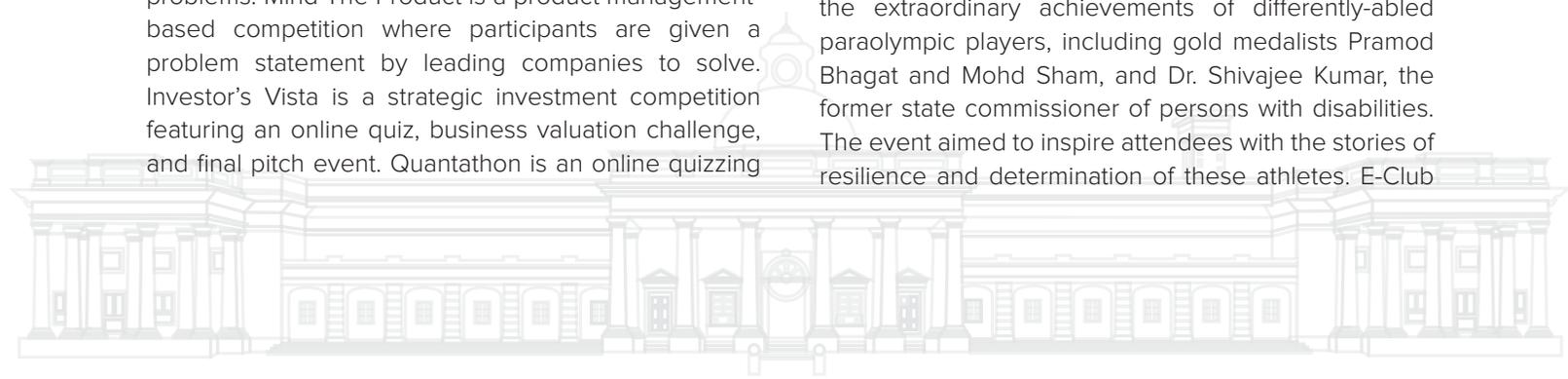
E-Cell IIT Roorkee's efforts have empowered students to take the leap from creative sparks to tangible ventures, making it a vital stepping stone for aspiring business leaders.

The Entrepreneurship Cell at IIT Roorkee hosts various competitions to promote entrepreneurship and innovation. These include IdeaStorm, which involves 200 teams pitching their ideas, Productathon, Mind The Product, Investor's Vista, Quantathon, Aeonea, Biz-Nexus, Startup Expo, Campus Ambassador Program (CAP), and Hi-Res. Ideastorm is an idea-building and pitching competition organized by the E-Summit, with over 500 participants from different countries. Productathon is a 36-hour development competition for creating innovation-driven solutions to modern life problems. Mind The Product is a product management-based competition where participants are given a problem statement by leading companies to solve. Investor's Vista is a strategic investment competition featuring an online quiz, business valuation challenge, and final pitch event. Quantathon is an online quizzing

and offline deck pitching event in collaboration with the Indian Institute of Quantitative Finance (IIQF) Mumbai. Aeonea is a business case study competition designed to ignite the strategic minds of aspiring consultants. Biz-Nexus is an exclusive event in collaboration with Chroma Ator, inviting students to tackle a problem statement provided by Chroma Ator in the deep tech domain. Startup Expo showcases over 25 innovative startups from across India, attracting top venture capital firms like Titan Capital, 7Square Ventures, IP Ventures, and Huddle Ventures. Notable startups from the campus, such as Zetpay, SpyderX, and Indian Knowledge Systems, were major attractions. The Campus Ambassador Program (CAP) aims to increase outreach to as many students as possible throughout the country and spread the entrepreneurship spirit. This year, E-Summit has reached around 2000+ colleges through 800 Campus Ambassadors. The CAP was conducted entirely online, with webinars on marketing and internship opportunities for the best ambassadors. The event has a timeline of November 2023 - December 2023 - December 24, 2023, and February 2-4 - E-Summit'24.

The ECell campus hosted several workshops, including an AI masterclass by Ansh Mehra, a design meetup featuring industry experts, and a TEDxIITRoorkee event featuring a theme of 'Defying Defiance'. The event, held on 23rd March 2024, attracted 200-300 attendees, with speakers including Mr. Wajahat Hasan, Col. Rajiv Bharwan, and Mr. Aman Dhatarwal. The event featured captivating performances by a sand artist, a renowned dancer, and a flute artist. The event drew a large audience, with attendees actively participating and providing positive feedback. Chai Pe Charcha celebrated the unsung heroes of the campus, including mess workers, e-rickshaw drivers, and guards, sharing their stories and experiences. The event aimed to highlight the importance of recognizing and appreciating these individuals, often overlooked in society, and underscore their significant impact. The event left attendees with a renewed sense of appreciation and motivation.

'Abhyuday' was a transformative event that showcased the extraordinary achievements of differently-abled paraolympic players, including gold medalists Pramod Bhagat and Mohd Sham, and Dr. Shivajee Kumar, the former state commissioner of persons with disabilities. The event aimed to inspire attendees with the stories of resilience and determination of these athletes. E-Club



at IIT Roorkee aims to foster entrepreneurship thinking, promote business knowledge, and technical skills, and enhance confidence among its members. The club connects members to entrepreneurial resources, facilitates networking with community entrepreneurs, and fosters idea-sharing. Startup Weekly Digest provides a weekly email newsletter to keep students of IIT Roorkee updated with the entrepreneurship world. Delta IIT Roorkee is an opportunity portal that connects students to professionals in the outside world.

E-Cell IIT Roorkee has introduced a series of intra-team activities to foster intellectual inquiry and financial literacy. These include “Book Decoding Sessions,” where a team of three to four individuals explores a book chosen based on collective interest, and “Investor’s Den,” where teams participate in a simulated investment challenge. These events aim to develop an understanding of the investment process and decision-making in the startup ecosystem. Alum sessions provide insights into real-time industry trends and increase network among members. Weekly discussions aim to improve analytical skills and startup knowledge, with two individuals leading discussions on various topics. Partnerships and collaborations include Tides, Startup Uttarakhand, and Startup India, as well as IIT Roorkee Alumni Association, IvyCap Ventures, Climate9ers, Chroma Ator, and various services partners. Media partners include StartupNews and Cistheta, while events partners include HeyPM, ZeltaTech, Pitch Prodigy, Product Folks, Upsurge club, Fampay, and Martian. Workshop partners include Airtribe, Edufabrica, and IIQF.

E-Summit’24 also saw partnerships with Fragment AI and the National Health Authority.

## ENACTUS

ENACTUS IIT Roorkee is a chapter of the global Enactus college/institute network, aiming to create a platform for students interested in social entrepreneurship and creating a social impact through the power of business. The organization has several projects, including the “floral waste management” project, which aims to utilize flower waste in Haridwar, Roorkee, to produce products like incense sticks, Gulal mosquito repellents, and perfumes, thereby creating employment opportunities for women in villages.

The project has already completed its RND stage for Holi Colours and incense sticks, aiming for sustainable development goals of decent and economic growth, gender equality, and life under the river. The project has also provided comprehensive training to two self-help groups (SHGs) in organic gulaal production, promoting economic empowerment of women and the success of SHG initiatives.

The “Anushruti” project, a collaboration between Enactus and Anushruti Academy at IIT Roorkee, aims to address communication barriers faced by the deaf and mute community by developing a solution that converts sign language into text and speech. The project involves capturing video input of sign language gestures and leveraging machine learning technology to interpret and convert these gestures into spoken words and written text. Lastly, the “Khoj” project is a tourism-based social entrepreneurship focused on researching and scouting out places with potential to become popular tourist attractions, enabling residents to improve their socio-economic status and lead better lives.

The research journey began with exploring Roorkee city, focusing on its rich history and hidden treasures. The team discovered the “Five Lions of Roorkee” and the Solani River Aqueduct, two iconic British colonial-era engineering marvels. They also compiled a report on Roorkee’s heritage sites and launched Campus Diaries to gather information about nearby tourist spots. Next, they focused on Haridwar, a holiest place in northern India, to explore the valuable “Bhai Khata,” family records that document the lineage and ancestral history of specific families. They met with sages who care for these records and documented their experiences.

The project “Banana Pad (Project Parwati)” aims to develop a standalone machine for creating biodegradable sanitary pads from banana fiber, addressing environmental concerns and empowering entrepreneurs to start their own ventures in sustainable menstrual health management. They conducted extensive research on the pad making process, consulting with Prof. Indardeep Singh Lab, and connecting with campus staff like Mr. PK Goyal. They also visited the Department of Design to learn about the compression-molding process and the Doiwala Padmaking Industry in Deharadun. The project also focuses on developing a system for carbon capture and



conversion to reduce CO2 emissions from industrial processes. They conducted literature reviews, feasibility assessments, expert consultation, and engaged with industry experts to gain insights and collaboration. In conclusion, the research journey focused on exploring Roorkee city, Haridwar, and developing innovative projects to address environmental concerns and create economic opportunities.

## Finance Club

The Finance Club at IIT Roorkee, founded in 2018, is a collaboration among finance enthusiasts to foster a finance culture and attract more firms for placements. The club hosts events such as a workshop on quantitative finance by WorldQuant, guest lectures by Vatsal Khandelwal, an introductory lecture by Nikhil Tyagi and Amit Chakarabarty from the CFA Institute, a free workshop titled “A-Z of Stock Market,” and a 2-day Financial Workshop hosted by E-Cell and the Indian Institute of Quantitative Finance (IIQF). The club also launched open projects such as “Fundamental Analysis,” “Technical Analysis,” and “Monte Carlo Simulation” for campus junta. Additionally, the club conducted workshops on topics such as “The Shimmery World of Stonks,” “Introduction to Economics and Personal Finance,” and “Probability Intuitive” to spread finance culture among the IITR community. The club’s goal is to guide and direct individuals with a keen interest in finance. The Finance Club continues its flagship competitions, Finvista, Quantathon, and Finception. Finvista is a comprehensive case study problem statement competition, requiring participants to create detailed PowerPoint presentations. Quantathon is a unique mathematical puzzle event that tests participants’ problem-solving abilities and financial mathematics proficiency. Finception is a second version of Finception that tests participants’ knowledge in both qualitative and quantitative finance, as well as their awareness of current affairs. Collaborations include E-Cell for Investor’s Vista, an investment competition, and Stats Symphony, an algo trading event. The club collaborates with Finshots to deliver a weekly college newsletter for campus junta. Achievements include securing national rank 4 in the Market Risk division of the EY CAFTA Case Championship, and the Indian Fintech Olympiad Finals, backed by Axis Bank, CashRich, and Zerodha. The Finance Club has also achieved success

in the EY CAFTA Case Championship, an annual event for undergraduate and postgraduate students in India, and the Indian Fintech Olympiad Finals, a national level event with significant participation from colleges.

## Geek Gazette’s

The Geek Gazette’s activity report for August 2023 to May 2024 includes an internal rebranding sprint, an intro talk, and a Comic Challenge. The team interviews Grant Sanderson from ‘3blue1brown’, a math education platform on YouTube. The theme for the upcoming issue of 2024 is ‘grain’. Web development lectures focus on HTML/CSS and provide resources and games to polish basics. The magazine is finalized, and designers collaborate with editorial. Finance conducts market trips for sponsors. Adobe Illustrator lectures are conducted, followed by web development lectures on Javascript and ReactJS. Adobe Photoshop lectures are also conducted. The editorial brainstorming session on ‘Understated Impact of Datasets in ML development’ is held.

## iGEM

iGEM, IIT Roorkee participated in various activities and events for the academic year 2023-2024, focusing on winning medals and track prizes at the iGEM Grand Jamboree 2023 in Paris. Their project, Neurasense, involved a diverse and holistic approach to diagnosing Alzheimer’s disease. They participated in the All India iGEM Meet 2023, conducted interviews with renowned neurologists, and collaborated with Prof. Saugata Hazra and Prof. Gopinath Packirisamy to produce a proof of concept for their Alzheimer’s diagnostic kit. They also held an intro talk, designed a team wiki, and participated in the iGEM Grand Jamboree, where they clinched a gold medal for the third consecutive time and were nominated among the top five undergraduate teams with the best diagnostic project. In January 2024, they hosted an open-to-all research event titled “Research pe Charcha” to improve undergraduate research culture and spread awareness about foreign research programs and internships. In March 2024, they submitted their project ideas for iGEM 2024 to multiple professors, and in May 2024, they drafted their first research paper on “CRISPRLY” in collaboration with Prof. Harsh Chauhan.



## Quantum Computing Group

The Quantum Computing Group (QCG) at IIT Roorkee aims to promote and enhance the culture of quantum computing among students. They engage in activities like concept discussions, hands-on workshops, collaborative projects, and hackathons to enhance the technical progress of the campus community. Three projects are open for all students, ranging from quantum adders to quantum machine learning and optimization. Other activities include discussions on universality in quantum gates, quantum key distribution, Shor's Algorithm, and qutrit-based quantum algorithms.

## MARS

The Models and Robotics Section at IIT Madras is dedicated to turning imagination into reality through robotics projects. The section offers lectures and workshops on microcontrollers, sensors, actuators, and more. The team has participated in various competitions, including the JLR Chiplet Challenge at Inter IIT Tech Meet 2023, where they secured a silver medal. They proposed wireless interconnects and on-chip antennas as the future of interconnects, showcasing their microarchitecture diagrams for electric vehicles' ADAS, BMS, and infotainment systems. The Flipkart Grid 5.0 Robotics Challenge, organized by Flipkart, involves teams from top colleges across India to develop autonomous robots capable of performing tasks. The team also participated in the Zengripper competition at IIT Roorkee, a gripper that combines differential drive and robotic manipulation, and the Maze Solver competition. The team has achieved several achievements, including being a finalist in the Flipkart Grid 5.0 Robotics Challenge and securing a silver medal in the JLR Chiplet Challenge.

MaRS conducted two workshops and one introductory session this year to teach beginners about various fields in Robotics, including Arduino, CAD, and fundamental electronics. The workshops covered the basics of Arduino, its uses, and basic circuits like differential drive, security system, ultrasonic sensors, and infrared sensor control. The CAD modeling workshop was held in October to give freshers a kickstart in the field. Over 150 students attended the paid workshop, which covered topics such as OpenCV, Arduino, and CAD. The workshops provided a glimpse into real-life applications of robotics knowledge.

TMI projects completed under MaRS' guidance included Smart Shopping Trolley, Water ATM, Fingerprint-Based Exam Hall Authentication, Skin Disease Detection System using CNN, Traffic Light Controller, Automated Plant Watering System, Face Detection Attendance System, Jumping Lungs using Torsion Springs and actuators, Step Counter using IMU Sensor, Gripper using Soft Robotics, Frisbee Throwing Bot, Continuous Robotic Manipulator, Cartpole, and Self Balancing 2 Wheeled Robot. These projects focused on developing autonomous robots, water ATMs, fingerprint-based exam hall authentication, skin disease detection systems, traffic light controllers, automated plant watering systems, face detection attendance systems, jumping limb systems, step counters, grippers, Frisbee throwing bots, continuous robotic manipulators, cartpoles, and self-balancing two-wheeled robots. The goal was to provide hands-on experience and practical application of robotics knowledge in various scenarios.

The team is working on several projects to improve the efficiency and effectiveness of various industries. One of the core projects is a contactless pharmacy bot that uses face detection for patient registration, doctor appointment scheduling, medication management, symptom diagnosis, expiry date detection, and real-time inventory tracking. Another project is a robotic arm equipped with a suction mechanism that simplifies logistics tasks by picking up and placing boxes in warehouses and factories.

Another project is an automated chess board with an electromagnetic system that uses electromagnets embedded in each square to detect the position of magnetic sensor-equipped pieces. This technology allows for automatic tracking of moves, eliminating manual piece movement and enabling features like AI opponents and online connectivity. Automated chessboards make the game more accessible by enabling remote play with opponents from anywhere in the world. Other projects include cart pole control system optimization using reinforcement learning, AI-based e-waste segregation system, maze solver using reinforcement learning, point cloud shape completion with Generative Adversarial Networks (GANs), IMU-based mouse for enhanced interaction, curve-drawing robot, design and simulation of a four-legged robot in Gazebo and Rviz, introduction to Thing Speak platform, counter using a segment display and push button in the Wokwi simulator, wall following robot, ROS Turtle Sim exploration, and line-following robot.



These projects aim to showcase the effectiveness of reinforcement learning in controlling problems and providing insights into real-world applications. By incorporating computer vision and artificial intelligence techniques, these projects aim to enhance the efficiency and effectiveness of various industries.



## Motorsports

IIT Roorkee Motorsports is a team of Formula students at IIT Roorkee that designs and manufactures electric race cars. They participate in national and international competitions, such as Formula Student UK 2023 and Formula Bharat 2024. The team has made significant improvements to their previous car, including an in-house battery management system (BMS), vehicle control unit (VCU), and data logging system featuring Controller Area Network (CAN) support. In April 2023, the team unveiled their Formula Student Car at IIT Roorkee's campus, with the car boasting impressive specifications such as peak motor torque (240 Nm), peak motor power (100 kW), and top speed (150 km/hr). The team also participated in National Technology Day events, where they presented the car to the Governor of Uttarakhand.

In June 2023, the team prepared for FSUK 2023 in the United Kingdom, where they performed various tests

and competed against other teams. In July 2023, the team made a comeback at Formula Students UK, where they achieved first place in Engineering Design, Cost and Manufacturing, and overall ranking among Asian teams. In October 2023, the team organized a lecture series that welcomed students from IIT Roorkee and neighboring institutions in Uttarakhand, highlighting the importance of automobile engineering and its role in shaping the future. The team also participated in the annual cultural fest, 'Thomso', which featured an in-house race-car simulator. In December 2023, the team returned to campus to participate in Formula Bharat 2024, where they worked tirelessly to ensure the car met the competition standards. Their dedication and hard work have contributed to their passion for electric mobility and carbon neutrality.

In January 2024, the team made its debut in Formula Bharat, showcasing their hard work and dedication. They successfully cleared the pre-technical inspection and gained valuable experience, including a Mathworks Modelling Award, Business Plan, Design Finals, and Overall Rank. In February, the team held a recruitment session for first-year students, showcasing their achievements and the opportunity to engage in innovation through designing and building race cars. In March, the team began the design phase of their next car, optimizing workflow and collaborating with team members. Weekly design sessions provided valuable insights and input, and a testing session with the last car, RMSE 23, allowed for further refinement. The team also participated in Cognizance 2024, the annual technical fest of IIT Roorkee, showcasing their cutting-edge RMSE19 simulator, which replicated real-time racing. The team members played a crucial role in sharing information about the car and promoting their sponsors, fostering a culture of knowledge sharing and learning.



## Robocon

Robocon Gravity is a student organization affiliated with the Indian Institute of Technology Roorkee, specializing in space robotics. The team participated in various competitions and projects throughout the 2023-2024 season, including the International Rover Challenges (IRC) 2024, Flipkart Grids: Robotics, Inter IIT: Tech Meet, Inter-Bhawan, and Cognizance. In July, the team initiated tasks to help first-year students understand Robot Operating System (ROS), SLAM algorithm, Computer Vision, CAD, analysis, and fabrication. They also enhanced communication and video streaming systems for seamless integration into rover navigation protocols. In August, they began research on developing a robotic arm and a science laboratory for soil collection and life detection. In September, they started working on the SDDR report and video for IRC 2024, accompanied by CAD design and analysis. They also conducted an educational session to raise awareness about the Chandrayan missions at Khanjarpur School. In October, they prepared for the International Rover Challenge (IRC) in Coimbatore, focusing on auto-navigation and integrating closed-loop control algorithms. They also qualified for the final round of Flipkart Grid 5.0: Robotics.

In December, the team focused on enhancing automation of the robotic arm and conducting extensive testing protocols to simulate diverse tasks. They participated in the Inter-IIT Tech meet and bagged a gold medal in the mechanical design problem statement presented by Prof. Ashish Kothiyari. In January 2024, the team debuted in the IRC 2024 international competition, achieving an overall 13th position. They also participated in the final round of Flipkart Grid 5.0 and submitted their proposal for ISRO's novel rover challenge IRoC-U. In March 2024, the team encouraged freshers' attendance at daily sessions at the Robocon lab, focusing on project-centric learning. They participated in Techzibition during Cognizance'24 and Techshila, the inter-bhawan tech meet.



## Society of Automotive Engineers (SAE)

The Society of Automotive Engineers (SAE) has been involved in various projects, including a sugar motor rocket, a nitro car, and a 3-D printing workshop. The sugar motor rocket is a homemade rocket engine fuelled by a mixture of sugar and an oxidizer, often potassium nitrate. The project aims to provide a hands-on learning experience about rocketry and propulsion. The RC car is a small, powerful car controlled by a remote, running on nitro fuel. The team participated in the Zaplin Junker event, a celebration of innovation and engineering prowess. A 3-D printing workshop was organized for freshmen of IIT Roorkee, introducing participants to 3D printing technology and providing hands-on experience with 3D printers, software, and materials.

Evo Rush, the flagship event organized by SAE in Cognizance, pits nitro-vehicles against each other in a thrilling display of speed, skill, and engineering prowess. The recruitment process aimed to attract new members to the SAE Club and provide opportunities to engage in various projects and activities.

The TMI (tinkering and mentoring) project was overseen by SAE, overseeing 26 diverse projects spanning various domains. The projects included pedal-operated cell phones, dual-axis vehicle steering mechanisms, solar power seed sprayers, hydraulic cranes, rocket propulsion systems, parachute ejection systems, light sensor circuits, mini electromagnetic engines, springless car suspension, remote-controlled mini-forklifts, gripper mechanisms, speaker systems, ball throwing machines, stairs climbing bots, intersecting copters, remote-controlled mini-forklifts, gripper mechanisms, mobile jammer circuits, emergency first aid bots, garbage detectors, and recycling mechanisms.

The Society of Business at IIT Roorkee is actively involved in fostering a culture of management consulting, product management, and data analytics among its students. The group conducts various initiatives throughout the year, including placement and internship talks, introductory talks, and competitions. They collaborate with Titan Capital and eCell to expose students to these fields and provide them with essential skills.

## Society of Business

The Society of Business IITR also hosts a national-level case competition in collaboration with eSummit, IIT Roorkee. Additionally, they conduct recruitment talks and guesstimate workshops to help students prepare for interviews. The club has been working on inculcating a culture of consulting, product management, and analytics skills on campus since the Spring Semester last year. They host Placement & Internship Talks across the three domains, host Start-up/Idea Pitching events, and organize Winter Analytics competitions for first-year students. Projects include Intra SocBiz 2023, which involves conducting three projects in Data Analytics, Product Management, and Consulting for second-year students. Startup projects include Tvelp, which focuses on user research and persona creation, Coversure, which focuses on AI-first insurance startups, Actofit, which provides pocket-friendly AI-based transform plans, and COOX, which makes it easy for people to book party services. Capstone projects include completing a capstone project in all verticals that marks the culmination of the cohort and curriculum. In addition, Intra SocBiz 2024 involves conducting one Intra SocBiz event for current 1st-year students, building an exciting problem statement and helping them get exposure to the space.

The group has won several awards in various competitions, including the PM Case Competition, ProdHive, Konsulenza, Indian Case Challenge, and Shri Ram Vyapar. They have also participated in the Inter IIT Tech Meet 12.0 Contingent, the KPMG ideation challenge, ZS Campus Beats Challenge, B-Plan Competition, Ericsson Innovation Award, “Trash to Treasure” ideation hackathon, Silver Medal winners in Tech Entrepreneurship, Supply Chain, Product, and Case Study Challenges, and won Gold and three Silver Medals at the 11th InterIIT Tech Meet. The group’s in-house curriculum is regularly updated to align with industry needs and global trends in product, consulting, and analytics.

## Software Development Section

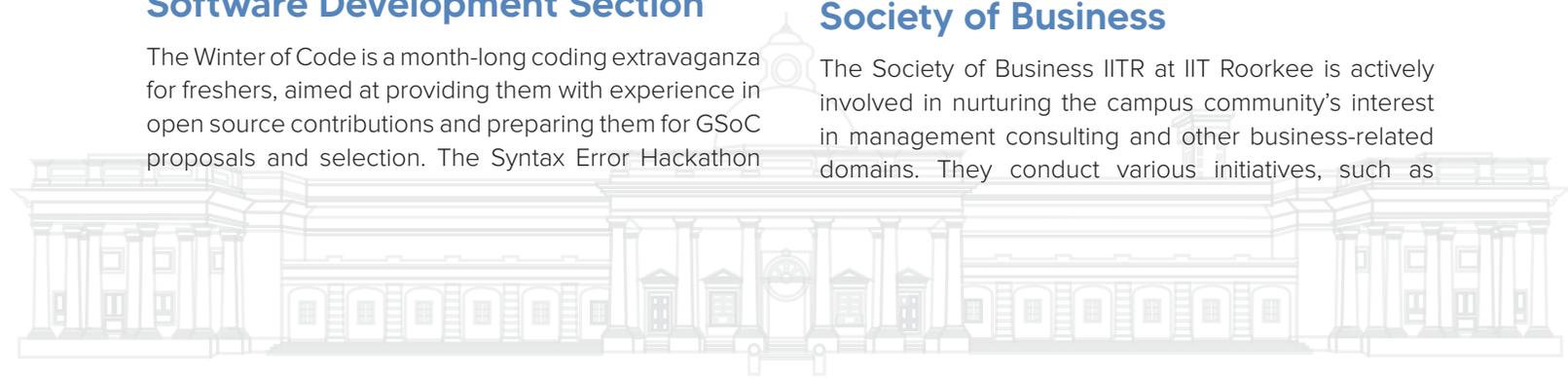
The Winter of Code is a month-long coding extravaganza for freshers, aimed at providing them with experience in open source contributions and preparing them for GSoC proposals and selection. The Syntax Error Hackathon

is a 2-3 day overnight hackathon targeting first and second-year students, inviting sponsorship from various companies. The Blogathon is an event where students write blogs on their favorite machine learning models, showcasing their understanding of the concept. The Bring Your Own Project is a month-long sprint of select individuals trying to manifest their ML project proposals with code to get hands-on experience with creating and deploying Machine Learning models. The Inter-College Competitive Programming Camp is conducted from August to January by clubs from 12 colleges IIIT-H, IIT-K, IIT-M, IIT-D, IIT-R, IIT-P, IIT-G, IIT-KGP, IIT-BHU, IIT-BBS, IIIT-D, and BITS Pilani. The Open Contest Series is a weekly open contest series where IITR students solve problems on various topics from beginner to advanced level and test their mettle against students from other colleges and IITs. Competitions include the Hackentine CTF, BackdoorCTF, n00bCTF, Starter’s Hypothesis, Thermaoracle, Supervised Learning Challenge, Algorithobic, Numberphile, Codeblitz, Endgame, Algorhythm, Codify Rumble, and ICC. Applications launched include Gasper, Quizio, Accounts, Gameboy Emulator, SDSLabs chat, Vector DB, Katana, SARS, Forecast Pro, and AI Kavach. Achievements and contributions to the campus include winning Gold Medals at the Inter IIT Tech Meet 2023, participating in the LFX Mentorship Program, securing India Rank 1 and Global Rank 2 in CSAW ESC 2023, and participating in the Amazon ML Challenge. The Data Science Group (DSG) members publish research papers in multiple notable international conferences such as CVPR, ICLR, SaTML, ICML, and TMLR.

Infosec IITR won various competitions, including CSAW India region, CSAW CTF Final Round, Qualls, Jersey CTF IV, Vishwa CTF, and Winja CTF at Nullcon Goa. They also secured third place at Shakti CTF 2024, Pearl CTF 2024, Incognito 5.0, Umass CTF, b01lers CTF, Hackday CTF Qualifiers, Amateurs CTF, BITS CTF, Pragyan CTF, Codefest IIT BHU CTF, Nullcon HackIM CTF Goa, and VSCTF 2023. They also found a critical heap overflow bug in GNU tools.

## Society of Business

The Society of Business IITR at IIT Roorkee is actively involved in nurturing the campus community’s interest in management consulting and other business-related domains. They conduct various initiatives, such as



Placement & Internship Talks, Introductory Talks, Chai with Titan, Business Baazigar, Winter Analytics, Consulting Workshop, Aeonea Consulting Case Competition, and Recruitment Talk & Guesstimate Workshop. The club has been working on inculcating a culture of consulting, product management, and analytics skills on campus since the Spring Semester last year. Initiatives include Placement & Internship Talks, Start-up/Idea Pitching events, Winter Analytics competitions, Product Baazigar, Consulting workshops, recruitment talks, and Intra-Socbiz competitions. Projects include Intra SocBiz 2023, which conducted three projects in Data Analytics, Product Management, and Consulting for second-year students. Startup projects include Tvelp, CoverSure, Actofit, and COOX. These projects aim to help students gain exposure to these fields and develop fundamental skills. Startup projects include User Research and Persona Creation, CoverSure, Actofit, and COOX. The team collaborated with Titan Capital and eCell to pitch startup ideas to investors, and developed innovative features targeting insurance, vehicle, and health sectors. Capstone projects include completing a capstone project in all verticals, and conducting one Intra SocBiz event for current 1st-year students. The collective vision is to empower students with essential skills and foster a cohesive network of individuals proficient in addressing challenges and devising effective solutions.

The group has won several awards in various competitions, including the PM Case Competition, ProdHive, Konsulenza, Indian Case Challenge, and Shri Ram Vyapar. They have also participated in the Inter IIT Tech Meet 12.0 Contingent, the KPMG ideation challenge, ZS Campus Beats Challenge, B-Plan Competition, Ericsson Innovation Award, "Trash to Treasure" ideation hackathon, Silver Medal winners in Tech Entrepreneurship, Supply Chain, Product, and Case Study Challenges, and won Gold and three Silver Medals at the 11th InterIIT Tech Meet. The group's in-house curriculum is regularly updated to align with industry needs and global trends in product, consulting, and analytics.

## TEAM KNO<sub>x</sub> BAJA SAE

BAJA-SAE India has become a popular event for young engineering talent to showcase their skills and gain real-life experience. Team KNO<sub>x</sub> transitioned from mBAJA to eBAJA for the first time, demonstrating

exceptional adaptability and engineering prowess. They secured the 6th position in cost and 8th position in overall statics at the event in Narsapur, Hyderabad. They successfully completed the development and testing of their first electric vehicle, a testament to their resilience and technical acumen. The event attracted over 150 registrations from across the country, inspiring many brilliant minds to create innovative vehicles. A total of 80 e-Baja teams participated, raising awareness about alternative energy sources and sustainable development. Team KNO<sub>x</sub>'s BAJA SAE-2024 involved designing, fabricating, and analyzing an All-terrain Vehicle, focusing on engineering design and analysis skills to produce an ATV that can withstand harsh terrain in all weather conditions.

The main goal is to design a lightweight and rigid off-road vehicle that meets the rulebook's requirements for optimal performance. This includes driver safety, ergonomics, weight reduction, and overall efficiency without compromising the strength, rigidity, and stiffness of the roll cage. The roll cage was analyzed using CATIA for ergonomic improvement and ANSYS for driver safety. The roll cage was also subjected to dynamic analysis of impact using MBD Analysis and modular analysis to prevent motor vibration transmission.

The braking system aimed to deliver a minimum stopping distance and quick response system, considering rider comfort. The design parameters included a hydraulic disc brake system, inboard braking for rear wheels, and transient thermal analysis. The steering system aimed to provide effective control throughout the vehicle's speed range with safety and self-rightening effect after taking a turn. The suspension system was designed to decrease unsprung mass, provide sufficient traction to tires, absorb additional forces and vibration in rough terrain, and provide good control over the vehicle while braking and cornering. Improvements included reducing the distance of shock absorber mounting position from upright and increasing ground clearance. The team of Team Knox designed an efficient and durable transmission system for their 2WD e-ATV, aiming to evolve from last year's mechanical drivetrain to an electrical powertrain without compromising safety, durability, and operational efficiency. The vehicle uses a 48.6 V, 120 Ah battery pack and a PMSM motor, coupled to a CVT that transmits power to the rear wheels through a two-stage reduction gear box. The team used software like Ansys,

Solidworks, ABAQUS, Kisssoft, Adams Car, and MATLAB for the design process. The team secured four sponsors from various sectors and initiated two projects to expand their social media presence. They qualified for Phase 2 of the E-BAJA Masters, securing 2nd position among all new teams. Despite the uncertainty of manufacturing an electric ATV and participating in E-BAJA, Team Knox successfully participated in the competition, gaining valuable experience and interacting with professionals from renowned companies. Team KNOx achieved 15th, 19th, and 12th ranks in cost, design, and CAE static events finals, while achieving 20th rank in sales event but not qualifying for finals.



## Tinkering Lab Students' Body

The Tinkering Lab at IIT Roorkee has been actively involved in various projects and events to promote the use of technology. These include a revamped website, a Product Management course, an Insight series, a Metaverse-VR lab tour, a Drone Swarming project, a Mentorship in TMI 101 course, an Intro Talk, a Photosynthesis VR emulator, a Recruitment drive for freshers and sophomores, a TinkerQuest hackathon, and an internal hackathon for new recruits in no code

game development. The students' body has also organized several events such as the TinkerQuest hackathon, which aims to find top talents in AR/VR, Software Development, and Product Management. They have also conducted the NanoNavigator event, which focuses on micromouse construction and coordination. Additionally, they have participated in the Cognizance 2024 High Prep Event Conduction - NanoNavigator, which aims to provide problem statements and required resources for the event. These initiatives aim to enhance the innovation culture and raise awareness of the potential of the Metaverse among 1st-year students at IIT Roorkee. The students' body has also provided weekly AMA sessions and guided each team throughout the events, collaborating with sponsors Redcliffe Labs and GMetri. Overall, the Tinkering Lab has been a valuable resource for students and faculty alike, fostering a culture of innovation and collaboration.



## Sports Council

Sports and games contribute to human resource development by encouraging good health and healthy competitiveness. Impact on student issues. Youth have a significant favorable impact on their overall personality development, providing them with enthusiasm, passion, and creativity.

Sports serve as a practical educational tool that promotes recreation, social peace, and discipline in everyday life. The Institute Sports Council (ISC) oversaw the development of the campus's sports environment. The Institute Sports Council (ISC) is a branch of the Student Affairs Council. It coordinates athletic activities around the institute. It ensures that adequate facilities are given to sports persons

## Sports Coaching Camp

Preliminary Sports Coaching Camp -Institute Sports Council organized a preliminary coaching camp from for probable players to participate in Inter IIT sports meet 2023-24. Later, final Sports Coaching Camp was organized by Institute Sports Council for the selection of players

### Inter IIT Tournament 2023-24

172 contingents participated in the 56th Inter IIT sports meet 2023-24 at IIT Gandhinagar & IIT Mumbai from 8th December to 22nd December 2023. **IIT ROORKEE CONTINGENTS WERE AWARDED THE OVERALL MEN'S CHAMPIONSHIP** and secured 3 Gold Medals (Football, Hockey & Weightlifting) and 4 Silver Medals (Athletics, Badminton, Volleyball & Cricket). 4 Bronze medals (Athletics, Tennis (Boys & Girls) & Basketball (Girls)).



## Half Marathon

On the bright and sunny morning of March 31st, 2024, the Institute Sports Council (ISC) of IIT Roorkee successfully organized a half marathon, marking yet another milestone in the institute's sports culture. The event saw an overwhelming response from students, in which a total of 1200 boys and 200 girls participated. This year, for the first time, medals were distributed to all the finishers, and cash prizes and trophies were awarded to the top three runners in each category.



## Sangram 2024

Institute Sports Council organized Sangram, the Sports Festival of IIT Roorkee from 29th to 31st March which witnessed over 1000 participations from around 60 Colleges comprising IITs, NITs, IIITs along with other universities of 18 states including alumni teams of IIT Roorkee. The opening ceremony was graced by Mr. Manoj Sarkar, the noted Indian para-badminton player, as esteemed Chief Guest for this occasion along with officials of Institute Sports Council. A total of 15 formal events were organized and IIT Roorkee contingents were awarded the overall championship. The para events were introduced for the first



## Drowning Rescue and CPR Workshop

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 SAC Building of IIT Roorkee on 27th August 2023. 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 in the event of an accident.



## Yoga Workshop

Institute Sports Council organized a two-day yoga workshop from 29th August to 30th August 2023 in which Prof. Françoise Lascanne professional yoga teacher and physiotherapist Surya Centre De Yoga Metz, France demonstrated innovative interventions in yogic kriyas and pranayamas.



Incorporating sessions and seminars on food and nutrition alongside sports activities is a fantastic initiative by the sports council! Proper nutrition plays a crucial role in athletic performance, recovery, and overall well-being. These sessions can educate athletes on the importance of balanced diets, hydration, and specific dietary needs for different sports or training regimes. Institute Sports Council Organized a lecture on Exercise & Nutrition by Dr. Rakesh Tomar from King Fahad University of petroleum, Saudi Arabia, discussed about the importance and significance of sports nutrition. Around 200 students and staff attended the workshop.



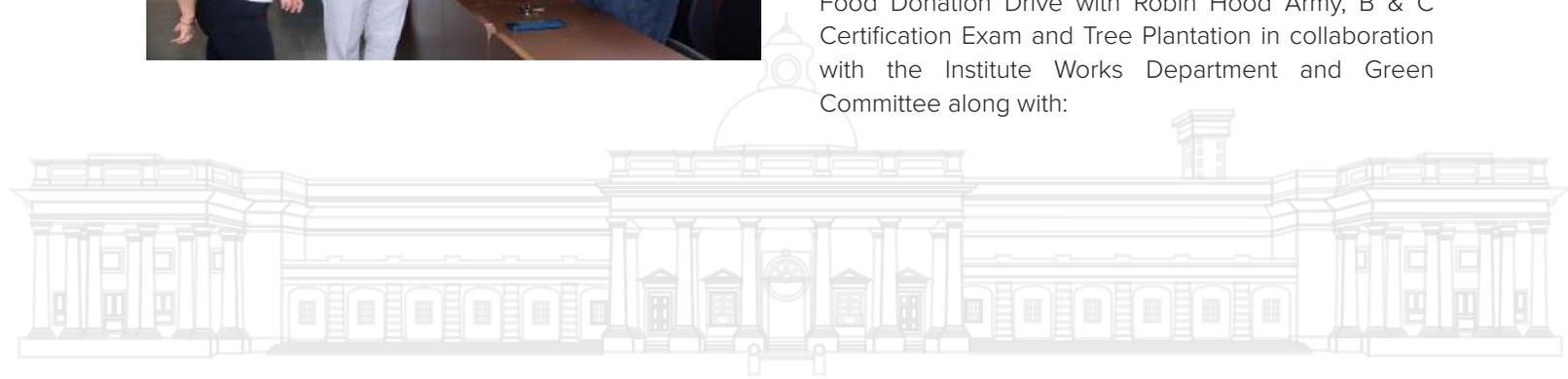
## Internal Competition for the students

Internal competitions within the sports council are a great way to foster camaraderie, motivation, and skill development among members. These competitions provide opportunities for athletes to test their abilities, challenge themselves, and showcase their talents in a supportive environment. They can encompass a wide range of sports and activities, catering to diverse interests and skill levels within the council. In light of this every year Institute Sports Council organizes the Aquatic meet, Colors Trophy, Institute Open, Annual Athletic Meet and Inter Bhawan Competition for the students.

Participation in competitions organized by other IITs reflects a broader spirit of collaboration and healthy competition among institutions. In last financial year, IIT Roorkee contingents also participated in Udghosh, the Sports Fest of IIT Kanpur, Sportech, Sports Fest of IIT Delhi, IIT Roorkee contingent secured 3 silver and 3 bronze in the Sportech. Weightlifting team Of IIT Roorkee participated in the Aarohan, organized by IIT Ropar Team secured 1 Gold and 2 Bronze medals.

## NCC

The National Cadet Corps (NCC) at IIT Roorkee provides students with a unique opportunity to develop character and leadership skills. Supported by the Indian Army, the program instills discipline, teamwork, and unity. Led by the Dean of Students Welfare, it organizes activities like Guard of Honor duties, sports tournaments, and training camps. In last financial year Several webinars/ symposiums/ workshops/ competitions were organized, a few of them are Guard of Honour on Independence Day, Cadet Bharti, Swachhata Hi Sewa, Blood donation Camp, Combined Annual Training Camp, Master Drill and Parade Training, Map Reading and Navigation, Weapon Training, Obstacle course, Talk on cyber-crimes, Marathon Training Drive, Disaster Management (Fire Emergency Classes), Battle Craft & Field Craft, Food Donation Drive with Robin Hood Army, B & C Certification Exam and Tree Plantation in collaboration with the Institute Works Department and Green Committee along with:



- **Atomic Artistry;** commemorating of the 25th anniversary of the historic Pokhran II Nuclear Test, which solidified India's status as a Nuclear State on the global stage, NCC orchestrated a campus-wide painting competition titled, 'Atomic Artistry'. This event served as a platform to reflect on the multifaceted implications of nuclear energy under the theme, 'Peaceful use of Nuclear Energy for the development of the nation'.



- **Flood Relief Donation Drive;** NCC orchestrated a heartfelt donation drive that extended across the campus and neighboring areas, aiming to offer vital support to families suffering in the aftermath of the July flash floods.



## NSS

NSS IIT Roorkee has organized various initiatives to promote national pride and freedom among young minds in Roorkee. A few of them are;

- **Education and Career Development**

- Organized career guidance workshop for 9th to 12th graders at Jatol Village, successful JEE Main results with support from the JEE cell, and ran a Mega Mentorship program for JEE Mains.
- Various guest lectures, including a Lecture on the POCSO Act by Saniya Mahajan

- Teamed up with clubs at IIT Roorkee, such as Robocon and Aries, to host technical and innovation sessions.

- **Community Outreach and Service**

- Waste management drive in Bahadurpur Jat Village
- Visit Mubarikpur village for the event "Health and Hygiene"
- Blanket distribution with Robinhood Army to needy
- Medicine Collection and Cloth Donation Drive



- **Health and Awareness Campaign**
  - o Self-defense workshop for girls
  - o Blood Cancer Awareness workshop by DKMS-BMST
  - o Health week challenge, including cycling and running
  - o First Aid Workshops
- **Environmental Sustainability**
  - Zero Waste Week consists of a variety of case comps
  - E-waste collection drives
  - Case Study on Sustainability
  - Joined forces with Elixir Foundation to lead the charge in sustainability
- **Social Events and Festivals:**
  - Social Summit, the social fest on the theme “Educate, Empower and Sustain” with a footfall of ~10k students and working professionals
  - Science Cinema Quiz for students from 6th to 8th
  - Sociothon, an annual event for freshers
- **Road Safety Campaigns**
  - 34th and 35th National Road Safety Month consisting of ideation and various other safety measures hackathon



## Placement Cell

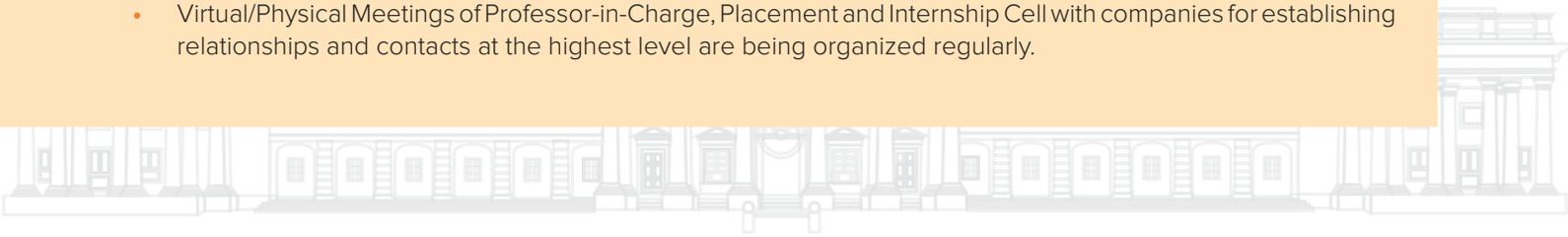
The placement and Internship activities continue to grow in continuum. A core Placements and Internship team of student/staff along with the Placement Advisory Council (consisting of student representatives from the final and pre-final year academic programmes and the faculty-in-charges from each academic department/centre) work round the year to look after the smooth execution of the activities. The team has put forward a strategic plan for this placement season, emphasizing internships, Pre-Placement Offers (PPOs), and traditional placements. 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 **1646** combined offers, providing them with exceptional opportunities to explore. The placement season is summarized in Table 1.

Highlights	Metrics
Number of Registered Students (For Placement)	1628
Number of Students who Actively Participated	1628
Number of Companies Participated	257
Total Number of Companies Making Job Offers	242
Total Number of Job Offers	1113
Number of Accepted Offers	1051
Number of Pre-Placement Offers	254
Pre-Placement Offers Accepted	243
Top Recruiting Sector	Core Engineering and Technology, IT/ Software



## Important Features

- 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, 2023).
- 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.
- 1113 job offers till now have been materialized. As the recruitment process for the session 2023-24 is still on, many organizations are expected to come.
- 533 internship offers (for all the registered students) could be gained this year.
- 254 Pre-Placement Offers including 2 international offers were received.
- 115 companies for summer Internship recruitments and 262 companies for Placements participated in campus (as the recruitment process for the session 2023-24 is still on, many organizations are still expected to come).
- Out of 257 companies 63 companies were the first time visitors.
- 75% UG students got job offers till now.
- 50% PG students got job offers till now.
- 68.37 % U.G. & P.G. students have received job offers till now.
- 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 BEML, Bharat Electronics Ltd., BPCL, C-DOT, National Health Authority, ONGC Videsh, UIDAI, visited for the Placements and hired some good talents.
- Some of the companies which hired interns from the campus for the first time include – AGC Asia Pacific Pte. Ltd., Akekure, Atlassian, Barclays, Boston Consulting Group, Chapter Vitamins, Convai Technologies India Pvt. Ltd., DG Takano, Ebullient Securities Pvt. Ltd., Gokul Infocare Pty. Ltd., L&T Finance, Mercer Mettl, Nation with Namu, Packfora, PulseLabs, PUMA Sports India Pvt. Ltd., Sensyn Robotics, SGVerse, Siemens Energy Ltd., Simpl, Svastir Technologies Services Pvt. Ltd., TechMatrix, Xalts, Ziroh Labs etc.
- Major MNC's which participated in the Campus Placement for the first time for Placements are AtkinsRéalisis, Databricks, DeltaX, FischerJordan, Hilti Technology Solutions India, IMC Limited, Infurnia Technologies Pvt. Ltd, Jindal Shadeed Iron and Steel LLC, K&S Partners, Lohum, National Westminster Bank Plc., Palo Alto Network, Plutus Research Pvt. Ltd., Powerhouse91 Consumer Goods India Pvt. Ltd., ProcMart, SAEL Industries Limited, Schneider Electric, Selan Exploration Technology Limited, Siemens Energy Ltd., Tata AutoComp Systems Ltd., Turing Global India Private Limited, VVF India Ltd., Walter P Moore Engineering India Pvt. Ltd., WCB Robotics India Pvt. Ltd., Whirlpool of India Ltd., Wisetech Global, Zenon Analytics Pvt. Ltd., ZL Technologies India Pvt. 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.



## Students Preparations

The Placement and Internship Cell collaborated with several companies, including Google, to organize the STEP internship program for software developers, particularly those historically underrepresented. JP Morgan Chase organized a Quant Finance Mentorship Program to help students build the skills required for a career in Quantitative Research. These programs aim to bridge the gap between academic study and professional internships. At the same time, Flipkart and

Boston Consulting Group facilitated a Buddy Program to prepare students for case challenges and consultancy problem statements. Goldman Sachs held a Women Emerging in Finance (WEiF) workshop to assist our female students in establishing their careers in finance. Uber's She++ program is an outreach initiative 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.

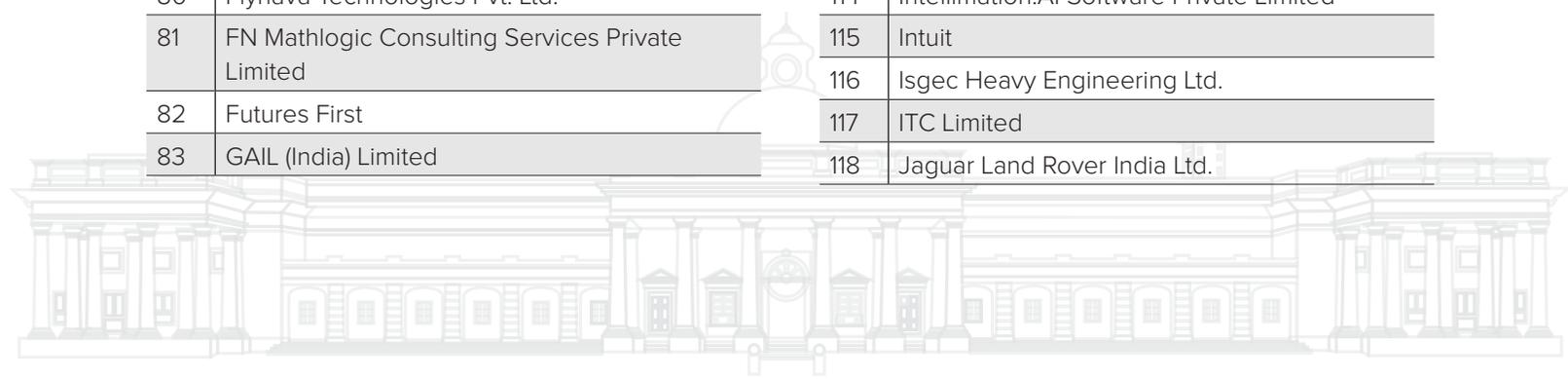
## Company Profile and Statics:

S. No.	Name of Company/Organization/Institute
1	91Squarefeet
2	AAJ Enterprises Pvt. Ltd.
3	Aarti Industries
4	Accenture Japan Ltd.
5	Accenture Operations
6	Accenture Strategy and Consulting
7	Adobe
8	Aliens Group
9	Allen Career Institute
10	Alphagrep Securities
11	Amazon
12	American Express
13	Analog Devices
14	APMSE Software Services Pvt. Ltd. (EagleView)
15	Appy Pie LLP
16	Arth Design Build India Private Limited
17	Arthmatetech Private Limited
18	Arup India Pvt. Ltd.
19	asper.ai
20	AtkinsRéalis
21	Auronova Consulting
22	Avalon Consulting
23	Axis Bank
24	Axtria India Pvt. Ltd.
25	Axxela

S. No.	Name of Company/Organization/Institute
26	BAIF Development Research Foundation
27	Bajaj Auto Limited & Chetak Technology Limited
28	Bakliwal Tutorials
29	Barclays
30	BeeHyv Software Solutions Pvt. Ltd.
31	BEML Limited
32	Bharat Electronics Limited (BEL)
33	Bharat Petroleum Corporation Limited (BPCL)
34	Bidgely Technologies Pvt. Ltd.
35	BlackNGreen
36	BNY Mellon
37	Cafal Advisors
38	CarDekho
39	C-DOT
40	Centre For Social Responsibility & Leadership
41	Chegg India Private Limited
42	Circle K Business Centre India
43	Cisco
44	Citibank
45	Clear (ClearTax)
46	CNH Industrial
47	Coforge Ltd.
48	Cohesity
49	Computer Age Management Services Limited

S. No.	Name of Company/Organization/Institute
50	Concept Institute
51	Contata Solutions Pvt. Ltd.
52	Convai Technologies Inc.
53	Cubastion Consulting Private Limited
54	Cybermarine Knowledge Systems Pvt. Limited
55	Cybertech Systems and Software Ltd.
56	Cyient
57	D.E. Shaw India
58	Databricks
59	Datacultr
60	DCM Shriram
61	Deloitte India (Offices of the US)
62	DeltaX
63	Demyst Data, Ltd.
64	Deutsche India Private Limited
65	DevRev Cloud India Private limited
66	Digit Insurance
67	Dolat Capital Market Pvt. Ltd.
68	DTICI
69	Edgeverve Systems
70	EMERGY Enviro Pvt. Ltd.
71	Enphase Solar Energy Pvt. Ltd.
72	Equal
73	E-Ring IT Solutions
74	Everest
75	EXL Service
76	ExxonMobil Services and Technology Private limited
77	FICO
78	FischerJordan
79	Flipkart
80	Flynava Technologies Pvt. Ltd.
81	FN Mathlogic Consulting Services Private Limited
82	Futures First
83	GAIL (India) Limited

S. No.	Name of Company/Organization/Institute
84	GAN Studio
85	Geta.ai Labs
86	Godrej Properties Limited
87	Goldman Sachs Services Private Ltd.
88	Google
89	Graviton Research Capital LLP
90	Greenko Group
91	Groww, India
92	HCLSoftware
93	Headout
94	Hero MotoCorp
95	HiLabs
96	Hilti Technology Solutions India
97	Hind Rectifiers Limited
98	Hindustan Petroleum Corporation Limited
99	Hindustan Unilever Limited
100	IBM India
101	ICICI Bank
102	ICICI Lombard GIC Ltd.
103	ICICI Securities
104	IFFCO Tokio General Insurance Company Limited
105	IMC Limited
106	Indus Insights and Analytical Service Pvt. Ltd.
107	InfoEdge
108	InfoObjects Software (India) Pvt. Ltd.
109	Infosys Ltd.
110	Infurnia Technologies Pvt. Ltd
111	Inito
112	Innvolution Healthcare Pvt. Ltd.
113	Intel Technology India Pvt. Ltd.
114	Intellimation.AI Software Private Limited
115	Intuit
116	Isgec Heavy Engineering Ltd.
117	ITC Limited
118	Jaguar Land Rover India Ltd.

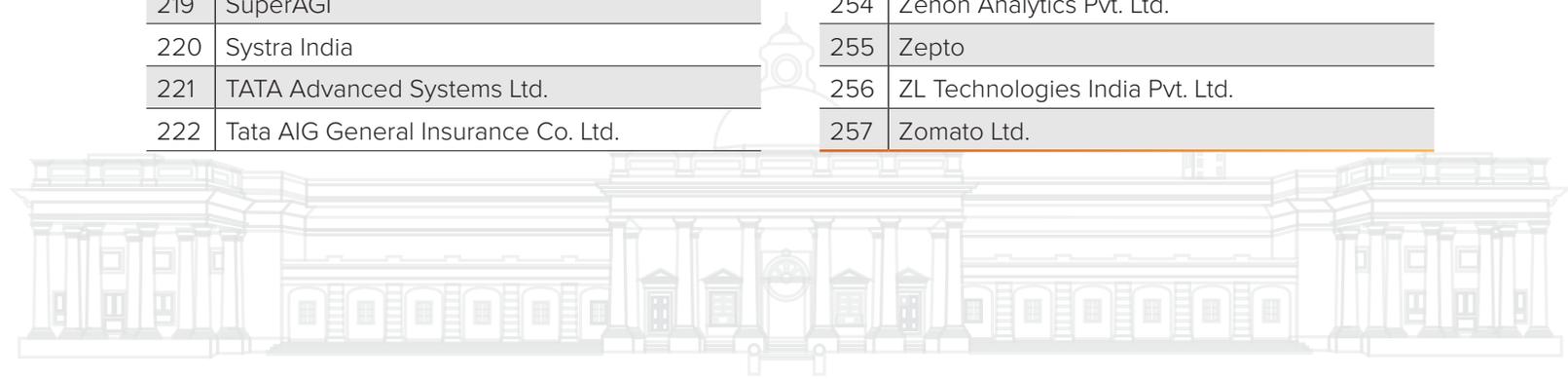


S. No.	Name of Company/Organization/Institute
119	Javis - CSM
120	Jindal Satinless Limited
121	Jindal Shadeed Iron and Steel LLC
122	JM Fiancial Services Ltd
123	JP Morgan Chase & Co.
124	Jungleworks - Software Sales Associate
125	K&S Partners - Patent Associate
126	K12 Techno Services Pvt. Ltd.
127	Kellogg Brown & Root Engineering & Construction India Pvt. Ltd.
128	Kingfa Science & Technology (India) Limited
129	Knest Manufacturers Pvt. Ltd.
130	Kuantum Papers Ltd.
131	Larsen and Toubro Limited
132	Lightning Nodes Technologies Private Limited (Pi42.com)
133	Lohum
134	Luminous Power Technologies
135	Mahindra & Mahindra Ltd.
136	Maruti Suzuki India Limited
137	Mastercard
138	Media.net
139	Meesho
140	Merilytics, an Accordian Company
141	michiteku Co., Ltd.
142	Microland Ltd.
143	Micron Technology
144	Micron Technology - Taiwan
145	Microsoft
146	MIDAS Research & Development Centre India Pvt., Ltd.
147	Minimalist
148	MORABU HANSHIN Industry Co.,Ltd.
149	Nation with Namu
150	National Institute for Smart Government - UIDAI
151	National Payments Corporation of India (NPCI)

S. No.	Name of Company/Organization/Institute
152	National Westminster Bank Plc.
153	Navi Technologies Ltd.
154	Neuron
155	Nine Education
156	Ninjacart
157	Nucleus Software Exports Ltd.
158	NVIDIA Graphics Pvt. Ltd.
159	O.P. Jindal Global University
160	Oceaneering International Services Ltd.
161	Oil India Limited
162	Ola
163	ONGC Videsh Ltd.
164	Oracle India Pvt. Ltd.
165	OYO
166	Palo Alto Network
167	Paypal
168	Petronet LNG Limited
169	PharmaACE
170	Plaid
171	Plutus Research Pvt. Ltd.
172	Powerhouse91 Consumer Goods India Pvt. Ltd.
173	PricewaterhouseCoopers Private Limited
174	ProcMart
175	Publicis Sapient
176	Qualcomm India PVT Limited
177	Quantbox Research
178	Qube Research & Technology
179	Quest Global
180	QuickSell
181	Quintics Management Consultancies Pvt. Ltd.
182	Rays Power Experts
183	Razorpay
184	Relaxo Footwear
185	Reliance - New Energy Initiatives
186	Reliance Industries Limited
187	Rodic Consultants Pvt. Ltd.

S. No.	Name of Company/Organization/Institute
188	Roundglass
189	RSPL Group
190	Rubrik
191	S.P Singla Constructions Pvt. Ltd.
192	SAEL Industries Limited
193	Sahajanand Medical Technologies Pvt. Ltd.
194	Saint -Gobain Research India
195	Salesforce
196	Samsung R&D Delhi
197	Samsung R&D Institute, Bangalore
198	Samsung R&D Institute, Noida
199	Samsung Research Bengaluru
200	Samsung Semiconductor India Research
201	SAP Labs India Pvt Ltd
202	Schlumberger
203	Schneider Electric
204	SEDEMAC Mechatronics Pvt. Ltd.
205	Selan Exploration Technology Limited
206	Siemens Energy Limited
207	Siemens Limited
208	Signum Academy
209	Skaps Industries India Pvt. Ltd.
210	Skillwin Technology Pvt. Ltd.
211	SLB
212	SparkCognition India Private Limited
213	Sprinklr
214	SRF Ltd. (Chemicals Technology Group)
215	SRM Institute of Science and Technology
216	Standard Chartered GBS India Pvt Ltd.
217	Stealth Edtech Startup
218	Sun Petrochemicals Pvt. Ltd.
219	SuperAGI
220	Systra India
221	TATA Advanced Systems Ltd.
222	Tata AIG General Insurance Co. Ltd.

S. No.	Name of Company/Organization/Institute
223	Tata AutoComp Systems Ltd.
224	Tata Consultancy Services
225	Tata Consulting Engineers
226	Tata Steel
227	Texas Instruments
228	Thornton Tomasetti
229	ThoughtSpot India Pvt. Ltd.
230	Total Environment Building Systems Pvt. Ltd.
231	TransOrg Solutions & Services Pvt. Ltd.
232	Tredence Analytics
233	Turing Global India Private Limited
234	TVS Motor Company
235	Uber
236	UiPath Robotic Process Automation
237	UltraTech Cement Limited
238	V3lt Consulting Inc
239	Varun Beverages Limited
240	Vedanta Limited, Cairn Oil & Gas
241	VISA Inc.
242	Vodafone Idea
243	VVF India Ltd.
244	Waisl
245	Walter P Moore Engineering India Pvt. Ltd.
246	WCB Robotics India Pvt. Ltd.
247	Webstaff
248	Wells Fargo
249	Whirlpool of India Ltd.
250	Wisetech Global
251	Wooqer
252	Xion Multiventures Pvt. Ltd.
253	Zangoh
254	Zenon Analytics Pvt. Ltd.
255	Zepto
256	ZL Technologies India Pvt. Ltd.
257	Zomato Ltd.

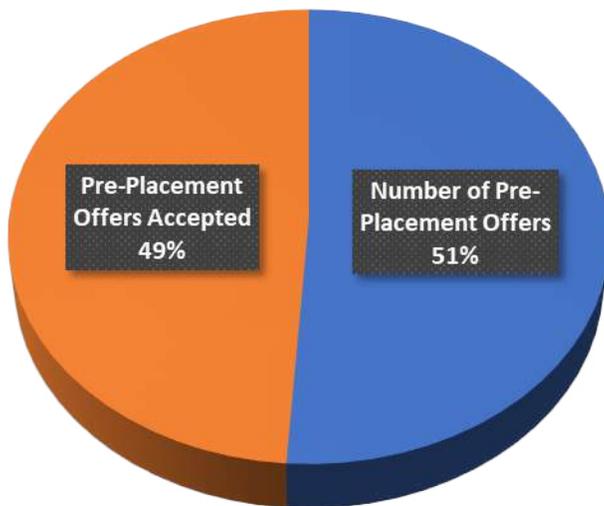


The number of jobs in each sector can vary greatly depending on the region, country, and economic conditions. However, the details of sector wise job offered by companies is given below

Sector	Number of Job Offers	Number of companies
Academic	33	10
Consulting	114	24
Core/Real Estate/Construction/ Design	354	90
E-commerce/ Finance/Insurance	140	28
FMCG	9	5
Govt./PSU	56	10
IT/Software/ Data Science	313	63
Trading	9	6
Other	85	21
	<b>1113</b>	<b>257</b>

Overall placement statistics provide a comprehensive view of students’ success in securing employment

Program-wise placement statistics provide insights into the employment outcomes of graduates from different academic programs or disciplines.



■ Number of Pre-Placement Offers  
 ■ Pre-Placement Offers Accepted



Program	Registered	Participated	Job offers
B.Tech./B.Arch.	1033	1033	790
IMT	53	53	37
IMSc	58	58	31
M.Tech./MBA/MURP/M.Arch.	375	375	212
M.Des./MIM	12	12	2
M.Sc.		98	28
Ph.D.		-	13
<b>Total</b>		<b>1629*</b>	<b>1113*</b>

\*The placement process for the batch of 2023-24 is still ongoing, and many more offers are expected to come.

Department-wise placement statistics provide insights into the employment outcomes of graduates from different departments or academic divisions within an institution. Here's a brief overview of these statistics given below

S. No.	Degree	Participated	Effective Placement (A)	Total Offers (B)
1	Architecture and Planning	17	9	9
2	Biosciences and Bioengineering	26	12	12
3	Chemical Engg.	105	80	81
4	Civil Engg.	152	103	108
5	Computer Science Engg.	117	116	130
6	Electrical Engg.	163	131	132
7	Electronics & Communication Engg.	116	102	106
8	Engineering Physics	36	12	12
9	Production & Industrial Engg.	54	29	31
10	Mechanical Engg.	142	103	113
11	Metallurgical & Materials Engg.	80	44	46
12	Polymer Science and Engineering	25	10	10
<b>Total B.Arch/B.Tech</b>		<b>1033</b>	<b>751</b>	<b>790</b>

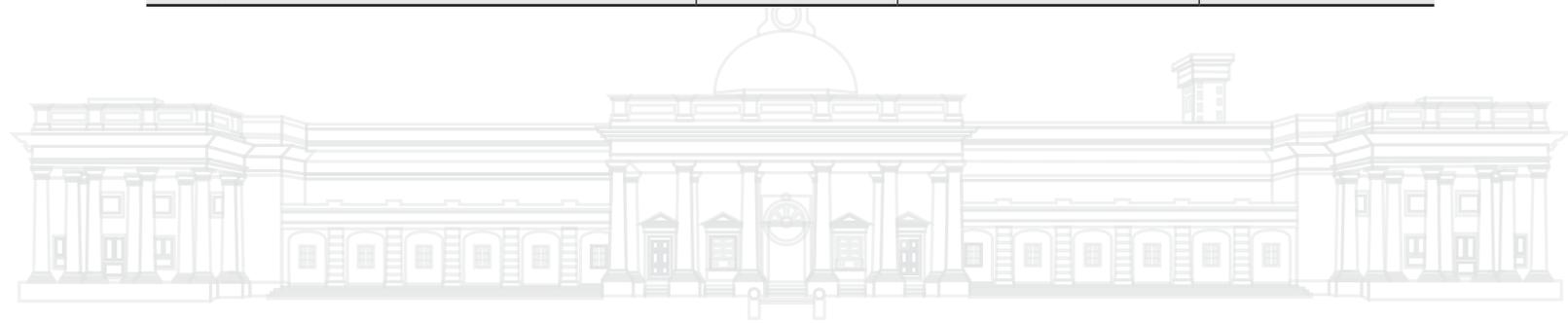
13	Int. M.Tech Geological Technology	23	15	17
14	Int. M.Tech Geophysical Technology	30	19	20
<b>Total IMT</b>		<b>53</b>	<b>34</b>	<b>37</b>

15	Int. M.Sc. (Applied Mathematics)	35	26	27
16	Int. M.Sc. (Chemistry)	10	1	1
17	Int. M.Sc. (Physics)	13	3	3
<b>Total IMT</b>		<b>58</b>	<b>30</b>	<b>31</b>



S. No.	Degree	Participated	Effective Placement (A)	Total Offers (B)
1	Architecture and Planning	21	3	3
2	Artificial Intelligence	11	7	7
3	Bioprocess Engineering	7	3	3
4	Chemical Engg.	13	7	7
5	Civil Engg.	38	8	10
6	Computer Science Engg.	27	22	24
7	Data Science	12	7	8
8	Disaster Mitigation and Management	6	0	0
9	Earthquake Engg.	28	17	19
10	Electrical Engg.	43	30	30
11	Electronics & Communication Engg.	20	15	18
12	Hydro and Renewable Energy	12	3	3
13	Hydrology	18	4	4
14	Infrastructure Systems	7	0	0
15	Mechanical & Industrial Engg.	34	28	31
16	Metallurgical & Materials Engg.	7	7	10
17	Nanotechnology	6	0	0
18	Packaging Technology	7	1	1
19	Photonics	5	4	4
20	Polymer Science and Engineering	20	10	11
21	Pulp & Paper Engineering	7	5	5
22	Solid State Electronic Materials	5	0	0
23	Water Resources Development and Management	20	6	6
24	MBA		8	8
<b>Total M.Arch/MBA/MURP/M.Tech</b>		<b>374</b>	<b>195</b>	<b>212</b>

1	M.Des. in Industrial Design	10	2	2
2	Master in Innovation Management	2	0	0
<b>Total M.Des./MIM</b>		<b>12</b>	<b>2</b>	<b>2</b>



S. No.	Degree	Participated	Effective Placement (A)	Total Offers (B)
1	M.Sc. Appl. Geology	17	10	12
2	M.Sc. Biosciences and Bioengineering	3	1	1
3	M.Sc. Chemistry	32	8	8
4	M.Sc. Economics	5	2	2
5	M.Sc. Mathematics	21	0	0
6	M.Sc. Physics	20	5	5
<b>Total M.Sc.</b>		<b>98</b>	<b>23</b>	<b>28</b>
1	Ph.D.		13	13

## PhD student placement

The Placement and Internship Cell has strategically collaborated with a diverse range of leading companies across various sectors, ensuring a holistic approach to securing research-oriented roles for our PhD candidates. By tailoring opportunities to individual interests and specializations, the Placement and Internship Cell has successfully secured 13 offers so far, with many more expected in the near future. These collaborations aim to bridge the gap between academia and industry, offering our graduates the chance to apply their expertise in impactful and innovative environments.

## Internship Report 2023-24

The Placement and 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 TATA Steel, Samsung Research, Bangalore, PwC India, J P Morgan Chase & Co, Google, Microsoft India Pvt. Ltd., Goldman Sachs, Adobe, Amazon Development Center, Jaguar Land Rover Technology and Business Service India Limited, Zepto, Texas Instruments, Axis Bank Ltd., American Express, Oracle,

Texas Instruments, Qualcomm India Pvt Limited, BNY Mellon, Standard Chartered GBS, Axtia India Pvt. Ltd., Sprinklr, Siemens Energy Limited, Rodic Consultants Pvt. Ltd., Axxela Research & Analytics Pvt. Ltd., ITC Ltd., Bajaj Auto Limited & Chetak Technology Limited, D.E Shaw India Pvt. Ltd., Hindustan Unilever Limited, Google, Samsung R&D, Delhi, Reliance Industries Limited etc. among others. A total of 533 nos internships were arranged by the office.

Even though some regular recruiters didn't visit this year due to low current market scenario, the Placement and Internship team was able to compensate for their absence by partnering with new top notch companies with equal or greater stature.

### International Placements:

Some of the firms which have hired students for their overseas operations are michiteku Co., Ltd., Accenture Japan Ltd., Databricks, Jindal Shadeed Iron and Steel LLC, Micron Technology – Taiwan, MORABU HANSHIN Industry Co. Ltd., Plaid, Webstaff etc. A total of 52 offers were made by these companies.



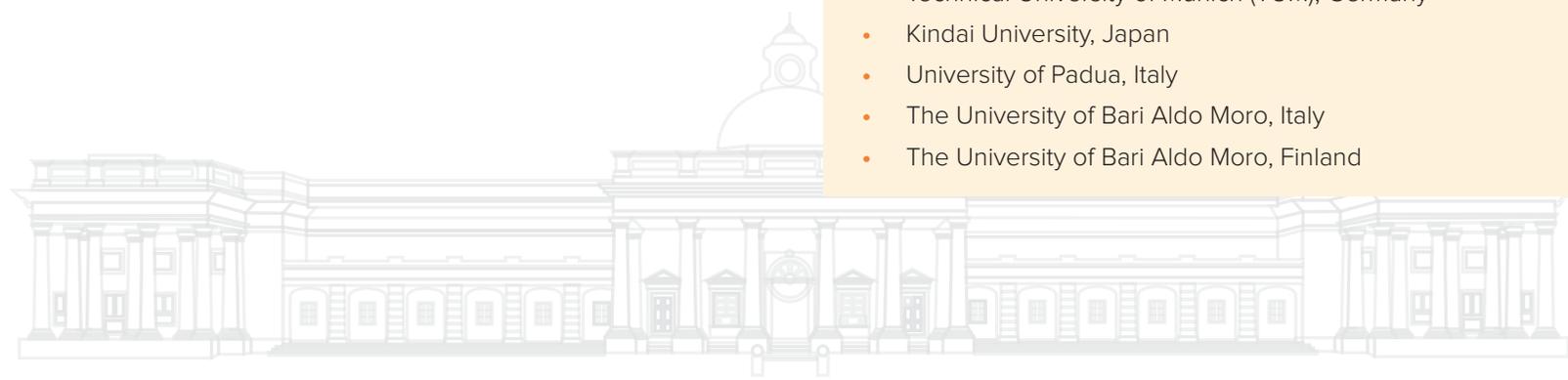
# International Relation

The International Relations office of IIT Roorkee serves as the front for the institution's global engagements, embodying its commitment to international academic & research cooperation. Actively partnering with various universities across the globe, the support student and faculty mobility under various programs and promotes for expanding the partnerships further. The IR office orchestrates all international activities, from forging partnerships with foreign institutions via Memorandum of Understanding (MoUs) to executing detailed Academic Agreements. It also facilitates student exchange programs, aiding in selecting exchange students and interns, while also welcoming delegations from abroad and organizing visits to foreign institutions. Liaising with foreign missions and agencies sponsoring international students, it ensures seamless cultural and educational linkages. Additionally, the IR Office collaborates internally, coordinating policy matters and admission processes, and managing accommodation and visa formalities for international students and their dependents through meticulous coordination with relevant authorities.

A staggering 97 international students hailing from diverse nations such as Ethiopia, Syria, Sudan, Nepal, Bangladesh, Sri Lanka, Tanzania, Myanmar, and more have enthusiastically enrolled at IIT Roorkee during the financial year 2023-24. These students opted for, pursuing coursework, engaging in project work, and pursuing post-graduate studies or Ph.D. programs. Their inclusion bolsters our existing cohort of 240 international students, creating a dynamic melting pot of cultures and perspectives within the esteemed halls of IIT Roorkee. This surge of global talent not only enhances our campus environment but also cultivates a thriving international community, fostering cross-cultural exchange and collaboration at every turn.

## MOUs with Foreign Universities

- George Mason University, USA
- King Mongkut's Institute of Technology Ladkrabang (KMITL), Thailand
- University of Canterbury, New Zealand
- University of Bordeaux, France
- University of Connecticut, USA
- University of Montpellier, France
- Purdue University, USA
- Dresden University of Technology, Germany
- Niigata University, Japan
- Universiti Kebangsaan Malaysia, Malaysia
- Old Dominion University, USA
- REFTEK Systems INC, Canada
- Universite du Quebec a Chicoutimic (UQAC), Canada
- Griffith University, Australia
- University of Melbourne, Australia
- Teesside University, UK
- University of Brawijaya, Indonesia
- Kathmandu University, Nepal
- University of Akron, USA
- RIKEN, Japan
- Universitas Diponegoro, Indonesia
- The University of Adelaide, Australia
- National Tsing Hua University: Student Exchange Agreement, Taiwan
- Deutscher Akademisch Austauschdienst (DAAD), Germany
- Newcastle University, UK
- National Central University (NCU), Taiwan
- Technical University of Munich (TUM), Germany
- Kindai University, Japan
- University of Padua, Italy
- The University of Bari Aldo Moro, Italy
- The University of Bari Aldo Moro, Finland



## Visit of International Delegations

- **Prof. Diganta Bhushan Das from Loughborough University;**

During the meeting, the group discussed the avenues of collaboration between overlapping research fields in IITR and LU. There were also discussions on developing joint doctoral degree programs, student exchange programs, joint thesis supervision, and research collaborations between LU and IITR.



- **Prof. Bharat Baruah Director of International Programs in the College of Science and Mathematics at Kennesaw State University;**

During the discussion, it was decided that the prospective collaboration would be initiated by sharing the MoU template with KSU. Once the broader (generic) MoU is signed, specific programs like student exchange, faculty exchange, and joint degree programs between the institutes will be considered and executed.



- **Prof. Salini Sasidharan from Oregon State University, USA;**

The primary agenda of the meeting was to explore possibilities for collaboration between the two institutions. It was agreed that the collaboration process would begin by sharing a Memorandum of Understanding (MoU) template with Oregon State University. Once a generic MoU is signed, specific programs such as student exchange, faculty exchange, and joint degree programs will be considered. This visit lays the foundation for potential future collaborations and partnerships between Oregon State University and IIT Roorkee, fostering academic and research ties between the two esteemed institutions.



- **Prof. Animesh Jha from the University of Leeds, UK;**

During the meeting the group have discussed the strategies to enhance collaboration, focusing on joint research proposals, faculty exchange programs, and joint degrees. We are excited about the possibilities that lie ahead. The ongoing dialogue sets the stage for deeper collaboration and opens avenues for joint academic ventures.



- **Prof. Praveen Linga from the National University of Singapore;**

During the meeting, the group discussed the avenues of collaboration between overlapping research fields in IITR and NUS. There were also discussions on developing joint doctoral degree programs, student exchange programs, joint thesis supervision, and research collaborations between NUS and IITR.



- **Prof. Kumar Patchigolla from Teesside University, UK;**

This visit was to strengthen the collaborations and find common grounds to expand the collaborations. The discussion was about the joint degree program, faculty exchange programs, and joint research proposal. Both sides discussed the opportunities available at IIT-Roorkee for collaboration and mobility.



- **Prof. Luís Miguel Madeira and Dr. Miguel Angel Soria from the University of Porto, Portugal;**

The meeting centered around future collaborations between our institutes, emphasizing a shared commitment to academic excellence.



- **Delegation from the Tonichi, Otsuka Corporation and Willings from Japan;**

The visit encompassed a well-structured itinerary, including meetings with the IIT Roorkee Dean, IR, and the Professor in charge of the Placement and Internship Cell. Additionally, an engaging exchange program with 2nd-year students facilitated direct interaction between the delegates and our students.



- **Prof. Sophie Hermans from Université Catholique de Louvain, UCLouvain, Belgium;**

The discussions revolved around fostering collaboration between our institutions. During the discussion, it was decided that the prospective collaboration would be initiated by sharing the MoU template with UCLouvain. Once the broader (generic) MoU is signed, specific programs like student exchange, faculty exchange, and joint degree programs between the institutes will be considered and executed.



- **Delegation from the University of Adelaide, Australia;**

The discussions were held regarding the joint academic degree programs, faculty exchange programs, and joint research proposals. Both sides discussed the opportunities available at IIT-Roorkee for collaboration and mobility.



- **Delegation from Shastri Indo-Canadian Institute;**

The discussion was held with respect to hosting Alberta Students in Roorkee under the Engaging Alberta in India (EAI) Program. Shastri Indo-Canadian Institute (SICI) is providing an exciting India-bound mobility opportunity for young Alberta undergraduate students starting in the summer of 2024, the Shastri Alberta Students in India (SASI) Project 2024-25. This initiative provides grants and support for an 8-week work internship to post-secondary students from Alberta in IIT Roorkee under the guidance of host faculty members.



- **Prof. Panagiota Angeli from University College London, UK;**

During the discussion, it was decided that the prospective collaboration would be initiated by sharing the MoU template with UCL. Once the broader (generic) MoU is signed, specific programs like student exchange, faculty exchange, and joint degree programs between the institutes will be considered and executed.



• **Prof. Khanjan Mehta from Lehigh University, USA;**

During the discussion, it was decided that the prospective collaboration would be initiated by sharing the MoU template with Lehigh University. Once the broader (generic) MoU is signed, specific programs like student exchange, faculty exchange, and joint degree programs between the institutes will be considered and executed.



• **Prof. Ayush Kumar from the University of Manitoba, Canada;**

During the meeting, the group discussed the avenues of collaboration between overlapping research fields in IITR and UOM. There were also discussions on developing joint doctoral degree programs, student exchange programs, joint thesis supervision, and research collaborations between UOM and IITR.



• **Dr. Nisha Mendiratta, Executive Director, Indo-US Science and Technology Forum (IUSSTF);**

The agenda of the meeting was to build scientific collaborations on various R&D sectors, innovation, and capacity-building aspects.



• **Prof. Ajay Dalai from the University of Saskatchewan, Canada;**

During the meeting, the group discussed the avenues of collaboration between overlapping research fields in IITR and UOS. There were also discussions on developing a joint doctoral degree program, student exchange programs, joint thesis supervision, and research collaborations between UOS and IITR.



- **Delegation from Leibniz Institute of Polymer Research (IPF) Dresden, Germany;**

The discussion was about the joint degree program, faculty exchange programs, and joint research proposal. Both sides discussed the opportunities available at IIT-Roorkee for collaboration and mobility.



- **International College of Semiconductor Technology, National Yang Ming Chiao Tung University (ICST-NYCU), Taiwan;**

The Departments of Electronics and Communication Engineering and Physics engaged the delegates in academic discussions and seminars at the departmental level. Notably, Dean Prof. Edward and Associate Dean Prof. Lin from ICST-NYCU expressed significant support for the Joint Degree Programs and engaged with potential students who will be visiting ICST-NYCU in the coming year.



- **Delegates from the University of Surrey, UK;**

This visit was to strengthen the collaborations and find common grounds to expand the collaborations.



- **Delegates from IR Office, Uni of Potsdam, GFZ, PIK (Germany);**

Both sides exchanged their ideas and knowledge related to Internationalization. Everyone participated in the discussions various challenges related Internationalization. Ms Claudia Rosseling and Ms Lydia explained their activities and responsibilities.



- **Prof. Yanki Hartijasti from Universitas Indonesia;**

During the discussion, it was decided that the prospective collaboration would be initiated by sharing the MoU template with Universitas Indonesia. Once the broader (generic) MoU is signed, specific programs like student exchange, faculty exchange, and joint degree programs between the institutes will be considered and executed.

- **Visit of Prof. A. Nuno Martins from the University of Lisbon;**

During the discussion, it was decided that the prospective collaboration would be initiated by sharing the MoU template with the University of Lisbon. Once the broader (generic) MoU is signed, specific programs like student exchange, faculty exchange, and joint degree programs between the institutes will be considered and executed.



- **Prof Kumar Patchigolla from Teesside University;**

During the meeting, the group discussed the avenues of collaboration between overlapping research fields in IITR and TEES. There were also discussions on developing joint doctoral degree program, student exchange programs, joint thesis supervision and research collaborations between TEES and IITR.

- **Old Dominion University (USA) Representative;**

During the discussion common research interests was emphasized and it was suggested that faculty members from both sides can collaborate on one-to-one basis and proposal of faculty exchange program was discussed.



- **Delegates from Rush University Graduate College;**

During the meeting overlapping research fields in IITR and RU. There were also discussions on developing joint doctoral degree program, student exchange programs, joint thesis, the group discussed the avenues of collaboration between supervision and research collaborations between RU and IITR.



- **Dr Amresh Kr Singh, MP (Nepal);**



- **Prof. Dominik Harald Lang from the Norwegian Geotechnical Institute (NGI);**

The group discussed the possibilities of further extending the collaboration between IIT Roorkee and the Norwegian Geotechnical Institute (NGI).



- **Prof. Ajay Mahajan from the University of Akron, USA;**

During the discussion, it was decided that the prospective collaboration will be initiated by sharing the MoU template with the University of Akron. Once the broader (generic) MoU is signed, specific programs like student exchange, faculty exchange, and joint degree programs between the institutes will be considered and executed.



- **Delegation visit from Astana IT University, Kazakhstan;**



- **Prof. Tuychiboev Nozimjon Solievich, Rector of Andijan Institute of Economics and Construction, Uzbekistan;**

Discussed the proposals for student exchange, faculty exchange, joint doctoral degree programs, and student mobility. Both sides agreed to initiate academic collaboration and discussed internationalization strategy.



- **The delegation from Queensland University of Technology (QUT);**

During the discussion, the group was apprised by the DeanIR about the existing schemes at IIT Roorkee for the appointment of foreign faculty members, and the opportunities of developing joint course-work, and online lectures jointly by the faculty members of both the institutes.

- **The delegation from the Embassy of Japan;**

The group discussed the possibilities to strengthen the ongoing projects and to continue to have more collaborations with the IIT Roorkee and the Universities of Japan.



## International Visits

- **IIT Roorkee Signed Academic Agreement with IoE, Tribhuvan University, Nepal.**



- **IIT Roorkee Delegation met H.E. Mr P Harish, Ambassador of the Indian Embassy in Berlin, Germany;**

Ambassador Harish emphasized his focus on promoting industry connections and discussed measures to further strengthen education and science and technology cooperation between the Indian Institute of Technology Roorkee and Germany. The delegation also discussed the possibility of setting up joint research programs and collaborations with German companies.



- **Meeting between IIT Roorkee delegates & representatives of GFZ;**

The agenda for the meeting included a welcome and overview of GFZ and funding possibilities presented by Christine Bismuth. The representatives from GFZ expressed their interest in collaborating with IIT Roorkee in the areas of sustainability, landslides and seismic hazards, water extremes and quality, and geodata science and AI&ML. Both parties agreed to hold a follow-up discussion during the IUGG conference in July 2023. It was also agreed that an Indo-German collaboration brainstorming session would be held either in Berlin or Roorkee.



- **IIT Roorkee delegation visited the Freie Universitat Berlin (FU Berlin), Germany;**

The meeting ended on a positive note with both parties agreeing to explore various avenues of collaboration and work towards fostering a strong partnership between IITR and FU Berlin. This collaboration has the potential to create exciting new opportunities for both institutions and could lead to ground-breaking research in various fields.



- **IIT Roorkee delegation visited the University of Potsdam (UP), Germany;**

The senior delegation from the Indian Institute of Technology (IIT) Roorkee visited University of Potsdam (UP) to discuss ongoing collaborations between the two institutions and ways to strengthen it further.



## Outlook of other activities by IR

- **Indo-German Partnership Workshop:**

The International Relations Office at IIT Roorkee orchestrated the “Indo-German Partnership Workshop” at the Greater Noida Extension Centre (IITR) on October 13, 2023. Attended by stakeholders from India and Germany, the workshop aimed to fortify scientific cooperation and strengthen ties between institutions from both countries. The event’s theme, “Bridging Horizons: Indo-German Scientific Collaboration at IIT Roorkee,” featured two sessions. The first showcased German excellence in research and outlined expectations for collaboration.

- **All IITs International Relations Conclave 2023;**

In a significant step towards advancing the Internationalization Strategies of Indian Institutes of Technology (IITs), the International Relations (IR) Office of IIT Roorkee organized the “All IITs International Relations Conclave 2023” on November 6 and 7, 2023. The event brought together the International Relations Offices of various most of the IITs, fostering collaboration to address challenges in international education.

- **Talk on “Improving Research Workflow Efficiencies” by Elsevier Team;**

The IR office organized a talk on May 22, 2023 by inviting speakers Dr. Shubhra Dutta and Mrs. Shalini Srivastava from Elsevier. Dr. Dutta delivered an insightful talk on utilizing information analytics to evaluate research work, focusing on research metrics. Interactive discussions ensued, with students gaining valuable insights.

- **Farewell of international students;**

On 12th June, a Farewell ceremony for international students who graduated in the academic year 2022-23 was held in the MAC auditorium, IIT Roorkee.

- **Welcome program Shubhagaman ;**

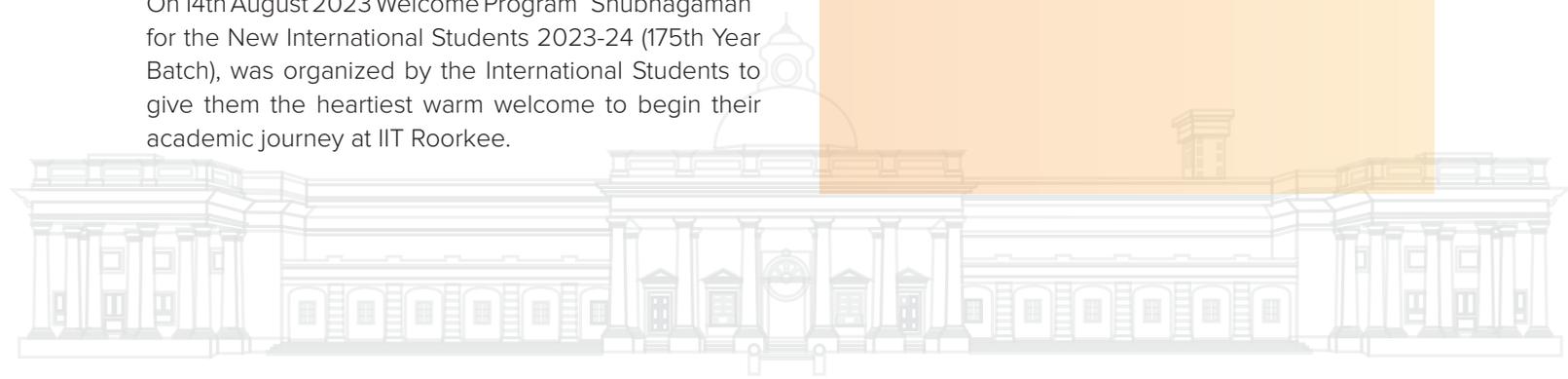
On 14th August 2023 Welcome Program “Shubhagaman” for the New International Students 2023-24 (175th Year Batch), was organized by the International Students to give them the heartiest warm welcome to begin their academic journey at IIT Roorkee.

### Foreign Language courses:

- Japanese
- French

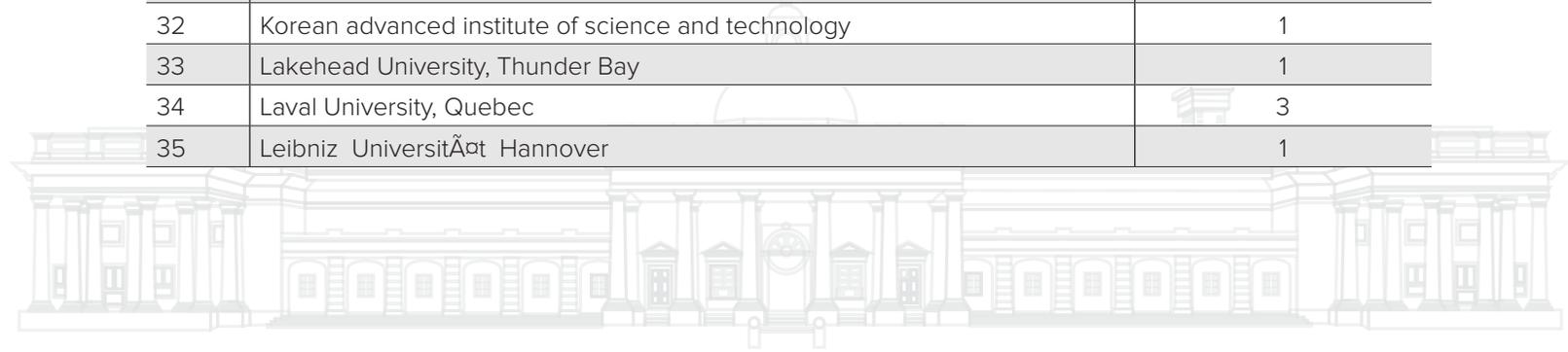
## Outbound Students

IIT Roorkee actively supports outbound exchange opportunities for students, facilitating academic or internship experiences abroad. Semester exchange guidelines are available on the International Relations Office website. The institution ensures seamless credit transfers for participating undergraduates and master's students. It also assists students in continuing fellowships or assistantships during overseas research, per official notifications. Exchange programs, notified by the IR Office, undergo application screening and nominations with departmental backing. Additionally, some programs permit direct student applications, circumventing the IR Office. This streamlined process underscores IIT Roorkee's commitment to fostering global engagement and enriching academic experiences for its students, enabling them to thrive in an increasingly interconnected world.

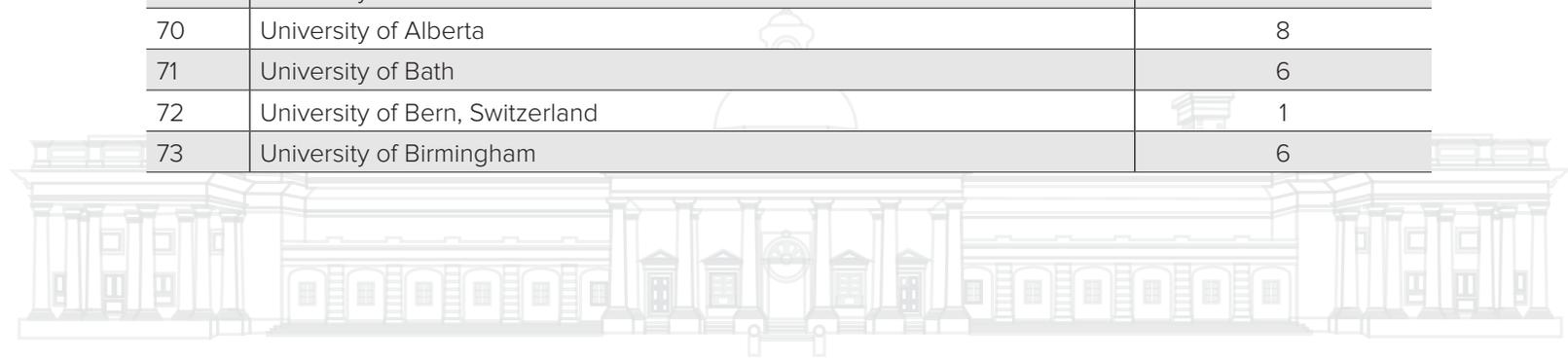


## Students participation in Exchange Programmes (under MOU) during Academic Year 2023-24

S. No.	Name of the University	No. of students
1	Nanyang Technological University, Singapore	21
2	University of Potsdam	4
3	Alexander von Humboldt Institute for Internet and Society	1
4	Technion Israel Institute of Technology	1
5	Athabasca University	3
6	Australian National University	6
7	Shanghai Jiao Tong University	1
8	Brandenburg Technical University	1
9	Bristol uni. BIG Labs	1
10	Brock University, Ontario	1
11	Cambridge University	1
12	Carleton university	1
13	Carnegie Mellon University	1
14	Chang Gung University	1
15	Concordia University, Quebec	2
16	Cranfield University	5
17	Dalhousie University	1
18	Disaster Prevention Research Institute(DPRI), Kyoto University,Japan	1
19	East China Normal University, Shanghai	1
20	Ecole Polytechnique de Montreal, Quebec	1
21	National University of Singapore	2
22	GFZ German Research Centre for Geosciences	1
23	Harvard University	1
24	HSLU Switzerland	5
25	Humboldt University Berlin	1
26	Institute for Mechatronics Systems in Mechanical Engineering, TU Darmstadt	1
27	Institute of Applied Microbiology, RWTH Aachen University Germany	1
28	IWB, Universitat Stuttgart	1
29	Johannes Gutenberg Univeristat, Mainz	1
30	Karlsruhe Institute of Technology, Karlsruhe, Germany	2
31	Katholieke Universiteit Leuven	1
32	Korean advanced institute of science and technology	1
33	Lakehead University, Thunder Bay	1
34	Laval University, Quebec	3
35	Leibniz UniversitÄt Hannover	1



S. No.	Name of the University	No. of students
36	Liverpool Hope University	1
37	Loughborough University	6
38	Lucerne school of applied sciences and arts (HSLU)	6
39	Lyles School of Civil Engineering, Purdue University	1
40	McGill University, Montreal, Quebec	2
41	McMaster University	3
42	Niigata University	3
43	Ontario Tech University	1
44	Polytechnique de Montreal	1
45	Power Electronics Lab, Kiel University	1
46	Purdue University	1
47	Queen's University	1
48	Queen's University	6
49	Rice University	1
50	Rostock University	1
51	Sheffield Hallam University	2
52	Simon Fraser University	3
53	Technical University of Munich	3
54	Technion-Israel Institute of Technology	1
55	The Pennsylvania State University, USA	1
56	The University of British Columbia Okanagan, BC, Canada.	1
57	The University of Hong Kong	1
58	Toronto Metropolitan University	3
59	Tsinghua University	1
60	TU Braunschweig, Germany.	1
61	TU Dresden	5
62	TU Munich	19
63	UBC, Okanagan, Canada	2
64	UC Berkeley	1
65	UiT The Arctic University of Norway	1
66	University College London	1
67	University de Montreal, Quebec	2
68	University de Sherbrooke	1
69	University Laval	2
70	University of Alberta	8
71	University of Bath	6
72	University of Bern, Switzerland	1
73	University of Birmingham	6



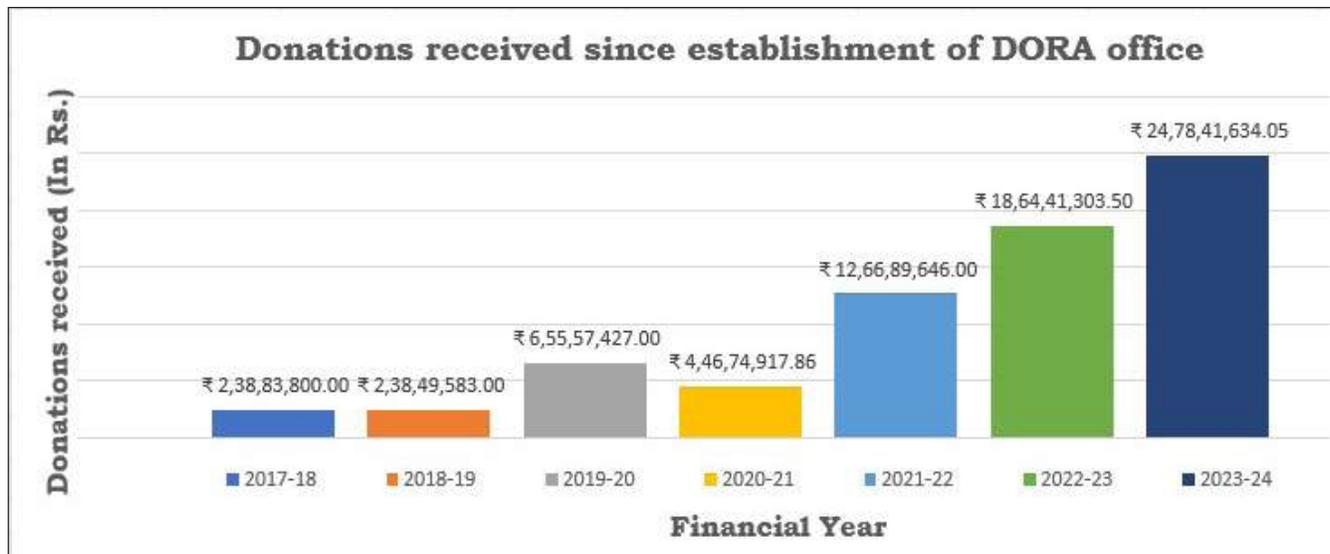
S. No.	Name of the University	No. of students
74	University of Bristol	1
75	University of British Columbia - Vancouver	5
76	University of Calgary	2
77	University of Derby	1
78	University of Guelph, Ontario	1
79	University of Hong Kong	1
80	University of Lausanne	1
81	University of Leeds	1
82	University of Lethbridge, Alberta	2
83	University of Malaya	3
84	University of Manitoba	1
85	University of Manitoba, Winnipeg, Manitoba	3
86	University of Massachusetts Amherst, DV Lab	1
87	University of North Texas	1
88	University of Ottawa	1
89	University of Oxford, Oxford, UK	1
90	University of Regina	2
91	University of Saskatchewan	1
92	University of Stuttgart	1
93	University of Surrey	1
94	University of Technology, Sydney	1
95	University of Tokyo	2
96	University of Toronto	3
97	University of Victoria	2
98	University of Virginia	1
99	University of Warwick	1
100	University of Waterloo	3
101	University of Windsor	4
102	UQAM Montreal	2
103	WEST VIRGINIA UNIVERSITY	1
104	Western University, London, Ontario	2
105	Wilfrid Laurier University - Waterloo	1
106	York University	3



# Resource & Alumni Affairs

The primary objective of the office of Dean of Resources & Alumni Affairs (DORA) is to cultivate and enhance the connection among Alumni, students and IIT Roorkee, forming a vital “golden triangle”. DORA office organizes various activities at IIT Roorkee for and with the Alumni in order to strengthen the bond between the Alumni and IIT. Additionally, DORA office plays a pivotal role in soliciting support from donors and corporations, securing donations and CSR funding to facilitate a spectrum of academic, research and developmental

endeavours at IITR. During 2023-24, the Institute received a total donation of Rs. 24,78,41,634.05/-. 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, among others, were Shri Ashok Soota, The Bhupat & Jyoti Mehta Family Foundation, Alumni of 1981 Batch, American Express (India) Private Limited (Under CSR), Alumni of 1998 Batch, Shri Om Prakash Kulshreshtha and Shri Pradeep Kumar Kapse.



## Year-wise Fundraising Progress:

### Details of MoUs signed in FY 2023-2024

#### A- Corpora established out of donation received from individual, batch donations:

- Manmohan Kamlesh Nagalia Financial Aid
- Smt. Mata Pujniya Lila Wati MCM Scholarship
- Major Gautam Sanyal MCM Scholarship
- Smt. Kuldip Kaur Memorial Gold Medal
- Pandit Sohan Lal & Smt. Godavari Devi Kukreti McM Scholarship and Shri Umacharan & Smt. Shakuntala Ghildyal McM Scholarship
- D K Pradhan - UN Mishra Cash Prize
- Darshan Narang Memorial Merit cum Means Scholarship
- Shri Mahabir Singh Merit cum Means Scholarship
- Beeta Conveyors Merit cum Means Scholarship
- Er. Shyam Lal Goel MCM Scholarship
- Mrs. Kanta Nirmla - Trilochand Garg Memorial Merit cum Means Scholarship
- Krishan Gopal Garg Award



- Bagchi Prize for Environmental sustainability
- Eight (8) Gold Medals established by Mr. Om Prakash Kulshreshtha
- Nine (9) McM Scholarship established by Mr. Om Prakash Kulshreshtha
- Best B.Tech. Project Awards in Electrical Engineering Department
- Addendum of Prof. Kewal K Saluja and Mrs. Neeta Saluja Scholarship
- Smt. Santosh Rani Tandon Memorial Award
- Batch 1997 Mr. Gaurav Agarwal
- Suri Awards Revised MOU
- Kunal Kaushal Award for All-round Excellence
- Satya Sharma Merit-Cum Means Scholarship
- Batch 1981 Addendum
- Addendum of Batch 1983
- Shreyas Kumar Class of 98 Gold medal for the Best All round Graduating B. Tech Student
- Class of 98, Tejwani Gold Medal & Placement Offer
- Azad Mohan Agarwal for Gold Medal
- Addendum of Prof. C.L. Toshniwal Award for Topper of M. Tech in Environment Engg.
- Batch of 1998 Agreement (Part-2)
- 1968 Batch Donation - Combined Schemes
- Er JP Shukla McM Scholarship
- 1981 Batch 3-way MoU between Donor, IITRHF & IITR
- 1998 Batch Donation- Led by Mr. Kartik Chandrayan (Tripartite MoU)
- Sir Ganga Ram Awards for Excellence in Research and Development: Revised MoU
- Class gift by the 1981 batch (donations made by Mr. Ravi Kant Gupta, Tinkering Lab, Anushruti and Asmita)
- Mrs. Mohini Kapoor and Jeewan Kapoor Merit Prize

### **B- Corpora received out of donation received from organizations under CSR contributions: -**

- AlphaGrep Securities Pvt. Ltd.
- IvyCap ventures Advisors Pvt. Ltd.
- Axa Parenterals Limited
- DMI Housing Finance Private Limited
- HealthAsyst Pvt. Ltd.
- Bridgcon Systems Private Limited
- Shreeji Propack Private Limited
- Horiba India Pvt. Ltd.
- American Express India Pvt. Ltd.

### **Donations received**

- Nawal Kishore Mehra Memorial Award
- Kathpalia Award for Environment
- G. P. Bagchi Met. & Mat. Engg. Cash Prize
- Sri Vinay Krishna Cash Prize
- Prof. C. L. Toshniwal Award in Civil Engg.
- Molecular Medicine Facility, Pathophysiology of Bipolar disorder, Wet lab
- Arvind Kumar Jain MCM Scholarship
- Electrical Branch -1971 Batch
- Lakshmi Sampath & Shree Ayenger Scholarship
- Full Tuition fee Waiver
- A. K. Goel Green Energy Award & Gold Medal
- Saluja Scholarship
- Sharman Foundation Scholarship
- Prabhat Kumar Sinha Scholarship
- 1996 Batch Donation
- 1997 Batch Donation
- Sarojinites for Sarojinites
- 1962 Batch Financial Aid for Poor Students
- P K Kapse Auditorium
- Om Prakash Kulshreshtha for Gold Medal
- Shrimati Mata Pujniya Lila Wati Ji MCM Award
- Mehta School for AI



- Om Prakash Kulshreshtha MCM Scholarship
- Manmohan Kamlesh Nagalia Financial Aid
- Best B.Tech. Project Award in Electrical Engineering Department
- Class Gift by the 1998 Batch
- Major Gautam Sanyal MCM Scholarship
- 1968 Batch Donation
- Class Gift by the 1981 Batch
- Golden Jubilee Donation 1973 Batch
- Beeta Conveyors Merit Cum Means Scholarship
- Smt. Kuldip Kaur Memorial Gold Medal
- D. K. Pradhan- UN Mishra Scholarship
- Smt. Darshan Narang Memorial Merit Cum Means Scholarship
- Sri Mahabir Singh Merit Cum Means Scholarship
- Er. Shyam Lal Goel Merit Cum Means Scholarship
- Pandit Sohan Lal & Smt. Godawari Devi Kukreti MCM Scholarship
- Sri Uma Charan & Smt. Shakuntala Ghildyal MCM Scholarship
- Er. J P Shukla Merit Cum Means Scholarship
- Donation for Library from Sri Suresh Chandra Mishra
- Mrs. Kanta Nirmala Trilokchand Garg Memorial Merit Cum Means Scholarship
- Ruby Jubilee Reunion of 1983 Batch
- Krishan Gopal Garg Awards
- Bagchi Price for Environmental Sustainability
- Class Gift of 1988 Batch
- Shreyash Kumar 1998 Gold Medal
- Satya Sharma MCM Scholarship
- Dheera Verma Memorial Scholarship
- 1967 Batch Travel Grant
- 1970 Batch Travel Grant
- 1992 Batch Travel Grant
- Kunal Kaushal Award for All Round Excellence
- Prof. Subrata Ray Endowment Lecture Series
- Class of 98, Tejwani Gold Medal and Placement Offer for the Best B. Tech Project
- Raunaqi Ram Ji MCM Scholarship
- Donation to IIT Roorkee from IIT Roorkee Alumni Association
- Tides Business incubator Fund
- CSR Donation for Lab Upgradation (HEALTH ASYST)
- Horiba Talent Hunt Scholarship
- Approved Startup Accelerators
- Alphaverse Award
- Supporting IIT Roorkee's Endeavors in Agriwaste & Biomass Conversion to High-yield-Oil (Indian Herbs Specialities Pvt. Ltd.)
- Skill Development Training Program in department of Paper Technology & Development of Advanced Packaging Research Laboratory
- CSR Contribution for Salary for three months (Oct-Dec-23) and three Smart Classrooms (projector screen) for AAD (from 1981 Batch)
- Empower Hearing-Impaired Students of AAD through Vocational Training Programmes
- 1981 BATCH Bridgecon Lab (Project-4)
- Building Fund for AAD by DMI
- Project Fund for AAD by DMI
- Synthesis of a high-performance hybrid nanocomposite anti-corrosive Coating
- Financial Assistance to Weaker Section of Society
- To access safe drinking water & focusing on sustainable environment protection
- Green Mobility and EV Charger Projects by Infineon Technologies
- Building Fund for AAD by National High-Speed Rail Corporation (NHSRC) limited, New Delhi
- Setup a software defined networking (SDN) enabled small-scale data centre/high-performance computing systems tested at the IIT Roorkee
- Drone Innovation LAB for Sustainability
- Mapmy India Geospatial Chair
- Donation for AAD From Abdos Lamitube Pvt. Ltd.
- Top-up Fellowship for M.Tech & Ph.D. Students
- Anushruti Academy for Deaf
- Community for Campus Fauna
- Sanskrit Club



## Chairs Established

The Chair Professorship is a distinguished academic position of the Institute and is conceived as an academic honour to recognize outstanding teaching/ research work and achievements of the permanent faculty in the Institute. It is also used to attract outstanding academicians to join the Institute as visiting faculty. It is also used to attract outstanding academicians to join the Institute as visiting faculty. Establishment of new Chair Professorships is essential for the Institute to attract and retain high quality research faculty, which is one of the key elements required to fulfil the goal of the Institute to be a leading international research university. This year following two are in process to be establish.

- Rahul Aggarwal Chair
- MapmyIndia Geospatial Chair

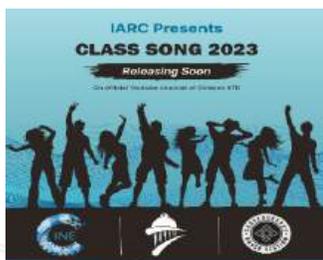
## The Endowed lecture series

- Shankar Lal Memorial lecture series
- C.V. Raman Memorial Lecture Series
- Bharat Singh Memorial Lecture Series
- J.B. Lal Memorial Lecture Series
- Prof. Vijaya Agarwal Memorial
- O.D. Thapar Memorial Lecture Series
- C.K. Prahlad Memorial Lecture Series

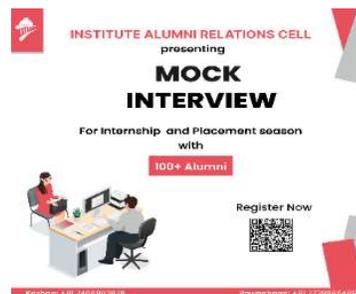
## Initiatives with Institute Alumni Relations Cell;

DORA Office supports the Institute Alumni Relations Cell (IARC) in undertaking several initiatives to enhance the Alumni-student relationship and provide valuable opportunities for the present student community.

**A) Class Song:** A touching video tribute dedicated to graduating students, capturing precious moments. The Class song videos have collectively garnered over 2 Million views on YouTube.



**B) Mock Interviews:** Preparation for internships through simulated interview experiences with Alumni. Over 300 Mock Interviews have been successfully organized, garnering praise from participating Alumni and students alike.



**C) Alumni Career Talks:** Sessions where distinguished alumni share experiences and insights, broadening students' career perspectives. Around 7 Alumni Career Talks have been organized with great participation and response from the IITR student body.



**D) Alumni BigWigs:** An initiative consisting of engaging riddles and quizzes for IIT Roorkee students to make them aware about the Alumni's achievements. In its 1st edition Alumni BigWigs managed to reach an audience of around 1200+ Instagram users.



## Alumni and Corporate Relations Activities

### HORIBA Talent Hunt Scholarship Ceremony:

Dr Rajeev Gautam, Corporate Officer, HORIBA, Ltd., President, HORIBA India and an Alumnus of IITR, initiated the Horiba India Talent Hunt Scholarship in 2023 and continued his contribution this year as well under CSR activity. He donated Rs. 20 lac. The scholarship was awarded to a group of 20 meritorious awardees.



## Alumni Reunions

**Ruby Jubilee Reunion:** Ruby Jubilee Reunion of 1981 & 1982 (B. Arch) Batch was celebrated during October 27-29, 2023. 100 enthusiastic alumni along with their families participated.



**Ruby Jubilee Reunion:** Ruby Jubilee Reunion of 1981 & 1982 (B. Arch) Batch was celebrated during October 27-29, 2023. 100 enthusiastic alumni along with their families participated.



**Emerald Jubilee Reunion:** Emerald Jubilee Reunion of 1968 Batch was celebrated during November 03-05, 2023. 64 enthusiastic alumni along with their families participated.



**Silver Jubilee Reunion:** Silver Jubilee Reunion of 1998 & 1999 (B. Arch) Batch was celebrated during November 17-19, 2023. 147 enthusiastic alumni along with their families participated.



**Golden Jubilee Reunion:** Golden Jubilee Reunion of 1973 & 1974 (B. Arch) Batch was celebrated during November 23-25, 2023. 134 enthusiastic alumni along with their families participated.



**Pearl Jubilee Reunion:** Pearl Jubilee Reunion of 1993 & 1994 (B. Arch) Batch was celebrated during November 26-28, 2023. 41 enthusiastic alumni along with their families participated.



**Ruby Jubilee Reunion:** Ruby Jubilee Reunion of 1983 & 1984 (B.Arch) Batch was celebrated during 30 November - 02 December, 2023. 81 enthusiastic alumni along with their families participated.



**Coral Jubilee Reunion:** Coral Jubilee Reunion of 1988 & 1989 (B.Arch) Batch was celebrated during December 22-25, 2023. 155 enthusiastic alumni along with their families participated.



**Tin Jubilee Reunion:** Tin Jubilee Reunion of 2013 Batch was celebrated during January 05-07, 2024. 85 enthusiastic alumni along with their families participated.



**Alumni get-together of 1977 Batch:** Alumni get-together of the 1977 Batch was celebrated during October 07-09, 2023. 50 enthusiastic alumni along with their families participated.



**Alumni get-together of 1986 Batch:** Alumni get-together of the 1986 Batch was celebrated during February 10-12, 2024. 40 enthusiastic alumni along with their families participated.



**Alumni get-together of 1979 Batch:** Alumni get-together of the 1979 Batch was celebrated during February 10-12, 2024. 16 enthusiastic alumni along with their families participated.



## Global networking

Started updating the Section “Book my Alumni” on DoRA website. The Institute has launched a Global Network of IIT Roorkee Alumni to establish an extensive connection with its large number of alumni spread all over the world.

- DORA Office has succeeded to have approx. 46,700 verified Alumni profiles on the Global Network of IIT Roorkee Alumni up to 31.03.2024.
- The DORA office has so far issued the newly instituted “IIT Roorkee Global Alumni Card” to approx. 11,622 alumni. This card has been highly appreciated by alumni across the globe.
- Birthday Greetings and Season’s Greetings have been sent in previous years. A new initiative to send Marriage Anniversary greetings has been started.
- In addition, the DORA office issues snippets on a monthly basis to the Alumni and Donors of IIT Roorkee for the latest updates on events and Alumni-related news.
- An initiative to send personalized expressions of gratitude from the Awardees, featuring their photos while receiving the Award has been started. This endeavor has been well appreciated by the Donors.
- Alumni are enthusiastic about sharing the details of their books and are grateful for the initiative.

# Institute Events

## ChemDay:

This year's annual Research Scholars Day of Department of Chemistry, also popularly known as ChemDay, was held on 4th November, 2023 (Saturday). Apart from expert lectures by Prof. J. N. Moorthy (IISER Thiruvananthapuram) and Prof. Subi J. George (JNCASR), there were oral presentations and posters by the department research scholars followed by prize distribution and an exuberant cultural event. A distinguishing feature of ChemDay-2023 was the unveiling of the ChemDay logo designed by the students based on the theme of interdisciplinary research which is the current status quo. This department event marks the multidisciplinary talent of our research scholars and provides a platform of interaction and collaboration.



## Industry-Academia Meet on “Insights on Innovation: Success Stories”

The Department of Design at Indian Institute of Technology Roorkee hosted a two-day Industry Academia Meet on “Insight on Innovation: Success Stories.” The event aimed to bring together experts from corporations from various fields to share experiences related to innovation. The objective of the workshop was to bridge the gap between academia and industry and explore how students could assist in the development of innovative products. The event aimed to bring together experts from industries from various domains to share their experiences related to innovation. The objective of the workshop was to bridge the gap between academia and industry and explore how students could assist in the development of innovative products.



## Emerging Design, Innovation and Technology (EDIT) workshop: Medical Device Design:

The “Emerging Design, Innovation, and Technology Workshop 2023: Medical Device Design” is a collaborative learning program aimed at facilitating the design of biomedical devices for the Indian market. The workshop, a blend of Texas A&M University’s pedagogy and IIT Roorkee’s design and technology, aims to foster a sense of community and encourage networking among attendees. Participants leave the workshop with a deeper understanding of the subject matter, enhanced problem-solving abilities, and renewed enthusiasm for their respective fields.



## 2nd Insights on Innovation: Strengthening Value Chains with Innovation Management:

The 2nd Insights on Innovation event at the Indian Institute of Technology, Roorkee, aimed to promote innovation and collaboration between academia and industry. It featured interdisciplinary discussions, keynote sessions, panel discussions, and networking opportunities. Participants gained insights into innovation management, its role in shaping academia and industry, and the importance of intellectual property for long-term growth. The event aimed to foster an innovative culture and contribute to the collective quest for innovation excellence.



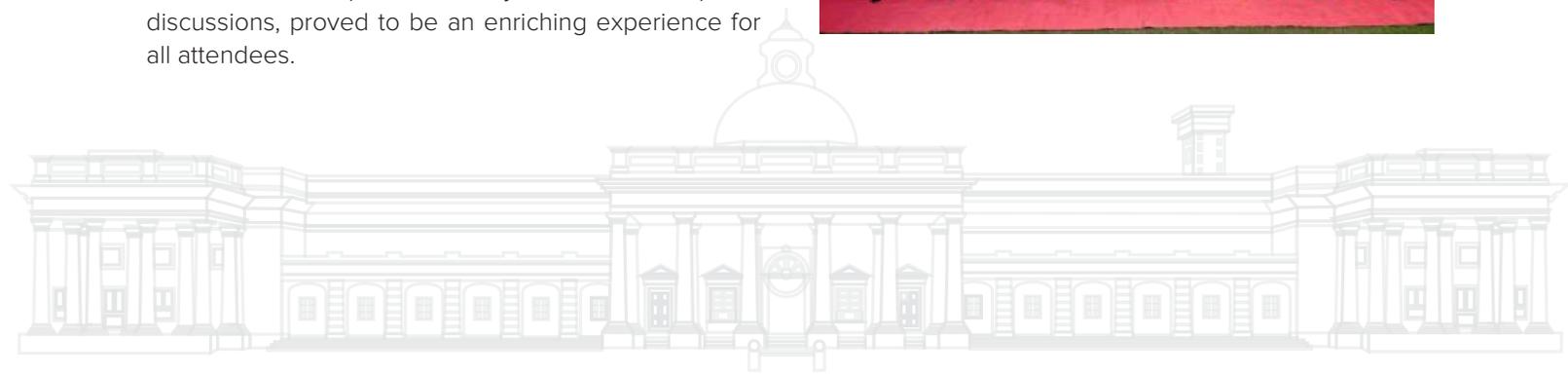
## International Conference on Computations and Data Science (CoDS-2024):

The International Conference on Computations and Data Science (ICoCDS) 2024 held at IIT Roorkee during 08-10 March 2024, brought together leading researchers, industry participants, and academicians from India and abroad to discuss and exchange ideas on the latest advancements and challenges in the fields of computations and data science along with applications in physical, medical and earth sciences. The conference provided a platform for participants to present their research findings, engage in insightful discussions, and foster collaborations. With a diverse range of 17 keynote/invited speeches, 134 paper presentations in 25 sessions, special industry sessions, and panel discussions, proved to be an enriching experience for all attendees.



## International Conference – “Management of Intellectual Property Rights and Strategy (MIPS-2024)

The 6th Biennial International Conference on Management of Intellectual Property Rights and Strategy (MIPS-2024) was held at IIT Roorkee from February 22nd to 24th, 2024. The conference aimed to provide a platform for discussing and presenting contemporary research in the area of Intellectual Property Rights and its effective management. The conference focused on the emerging paradigm of IP for development, the impact of new IP Policy and education policy, the role of academic IPRs in national economies, and the role of IP in sports. Subthemes included the role of women in accelerating innovation, reverse innovation, standardization and pooling through IPR public institutions, requirements and intergenerational equity of IP rationales, and paradigms in the role of IPR utility patents.



## Earth Sciences in India: Challenges and Emerging Trends (ESICET-2023)

Four and a half billion years of the geosphere, hydrosphere, atmosphere, and biosphere evolution has incubated the earth the way we see it today. Mineral wealth, Rare Earth Elements (REE), and fuel that form crucial economic drivers keep requiring a newer research impetus. The world community keeps innovating ways to understand these processes of mineral and fuel genesis, methods of exploration and production, and hazard mitigation for humankind to sustain a better future. This leads to a volume of new technologies and new knowledge that requires a platform to be discussed and disseminated. The Department of Earth Sciences at the Indian Institute of Technology, Roorkee started to build this platform in its golden jubilee year (ESICET-2013) and this conference is the second edition in that sequence that will allow the Indian earth science community to share the new geoscientific excitements across the sub-disciplines and career levels.



## CERA 2023:

It is the flagship conference of the Department of Electrical Engineering, Indian Institute of Technology Roorkee, which happens once in four years. The 7th edition had theme of “Sustainable Transportation System”. It aims to provide a platform for bringing together researchers, industry professionals, and policymakers not only to discuss recent advances but also to present their recent original works in the area of smart energy systems, control design for robotics and automated vehicles, advanced signal processing techniques for smart instrumentation systems, smart drive design, power electronics, smart transportation systems, expert systems, artificial intelligence, neural network etc.



## SynerGiA

The Industry-Academia meet for 2023 on 16th and 17th February. The primary intent of this event is to build a synergy between industry and academics for the mutual benefit of academics at large, students and the industry. The event was a great success, which had multiple events such as Panel Discussion, PG Curriculum Workshop, Interaction with Industry, Expert Lecture, Software and Skill Development Session, and Idea Competition.



### Nanotechnology Day-2023:

The Centre hosted the Inaugural edition of Nanotechnology Day-2023 on 27th October, 2023. Prof. Rajiv Prakash, Director of IIT Bhilai graced the occasion as chief guest. He delivered the key-note lecture. The event was comprised of short-talk, poster presentation, start-up pitches, brain-storming session and various activities related to nanoscience and nanotechnology. Faculty members and students across the departments working in the field of nanoscience and nanotechnology has attended the event.



### IDRIM 2023:

The 13th International Conference of the Integrated Disaster Risk Management (IDRiM) International Society took place as a hybrid event, hosted by the Centre of Excellence in Disaster Mitigation and Management at the Indian Institute of Technology Roorkee from September 28th to 30th, 2023. Highlights of the conference included three hands-on sessions, addressing seven Sustainable Development Goals, eleven technical sessions, participation from 18 countries, three sessions for young scientists, five special sessions, four board meetings, a conference tour, and an award ceremony. Overall, the event served as a pivotal platform for advancing discourse and action in integrated disaster risk management, emphasizing the importance of collective efforts in enhancing resilience and protecting vulnerable communities.



### Foundation Day 2023

IIT Roorkee marked its 176th Foundation Day on November 25, 2023. On the occasion of the Foundation day, the DORA Office celebrated the Distinguished Alumnus Awards Ceremony and Distinguished Young Alumnus Awards Ceremony, recognizing the outstanding accomplishments of its Alumni. The institute continued to inspire with the “Empowering India - Nurturing Education, Innovation, and Cultural Legacy” event, embodying its commitment to holistic education.



### SIH 2023 Internal Hackathon

“Rethink! The Tinkering Lab” at IIT Roorkee hosted the Internal Smart India Hackathon 2023, Hardware Edition, from September 25th, 2023, organized by the Innovation Cell, Ministry of Education, GoI, and AICTE. The event saw participation from 200 enthusiastic students, divided into teams focusing on innovative projects across diverse domains. These domains included Smart Automation, Blockchain and Cyber Security, Disaster Management, Smart Education, and Miscellaneous. Participants leveraged their creativity and technical skills to address real-world challenges, showcasing their ability to develop practical solutions using hardware. The hackathon provided a platform for students to apply their knowledge and collaborate on projects aimed at driving technological innovation and societal impact.

### International Day of Yoga:

A 7-day yoga camp was organized at Lal Bahadur Shastri Stadium IIT Roorkee from 15th to 21st June 2023 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.”



### Institute Research Day 2023:

Institute Research Day 2023 (IRD 2023) was a two-day event organized on March 14 to celebrate research and innovation. This day is also significant as the birthday of all-time great scientists Albert Einstein (March 14, 1879) and Pi( $\pi$ )-Day (3.14). The institute conducted a research poster presentation competition on March 13, 2022. Those who performed well in the competition were awarded certificates and cash prizes. 205 students participated and 21 posters were awarded the best poster presentation award on March 14, 2023, after a brainstorming session on “R&D transformation, Sustainability dimension”.



### Uttarakhand Udyog Mahotsav 2023:

Indian Institute of Technology Roorkee (IIT Roorkee) led the first edition of the Largest Uttarakhand Udyog Mahotsav (UKUM), in collaboration with the Bhagwanpur Industries Association (BIA), and the Roorkee Small Scale Industrial Association (RSSIA), Roorkee. It was one of the largest industrial exhibitions in Uttarakhand, serving as a golden opportunity and a platform to build and add new business tie-ups for industry and start-ups. It was a 3-Day exhibition from 18th to 20th March 2023 at Bhagwanpur, Roorkee, with the participation of more than 200 industries and showcasing of technologies from IIT Roorkee Innovation and Incubation ecosystem which consists of the SRIC unit, Tinkering lab, DIC, IPR Cell, TechSarthi, and startups incubated at TIDES, and TIH. More than 50 research scholars of IIT Roorkee have made poster presentations and received valuable feedback from Industry experts on the industrial applications of their research.



### Garhwal Rifles Visit:

IIT Roorkee organized the visit of Ph.D. scholars to 15 Garhwal Rifles inside the Army cantonment to encourage and motivate the students to research in the domain of defense. The 15 Garhwal Rifles planned for the visit of our faculties and students to see and understand the different weapons used in our Army on 18.04.2023. The Army personnel explained the operation of weapons and also indicated the possible Technological developments that can be carried out to make the weapons more effective. Overall student's feedback for this activity was very impressive as they said that these visits must be conducted frequently.



### Corporate Lecture Series: 6 Points Understanding of Climate Change & Corrective Actions:

The institute organized a lecture titled "6 Point Understanding of Climate Change & Corrective Actions", by Prof. Chetan Singh Solanki, IIT Bombay working in the Department of Energy Science & Engineering. He is also the founder of the Energy Swaraj Foundation. Through this lecture, Prof. Solanki enlightened the importance of solar energy and the need for an immediate act to mitigate climate change effects.



### National Technology Day:

IIT-Roorkee celebrated National Technology Day on 11th May 2023 intending to explore opportunities and prospects for dynamic strategic vision and execution. The event focused on strengthening the ecosystem for women's empowerment, connectivity, emerging technologies, organic farming, local products, tourism, wellness, self-help groups, ayurveda, and other important topics. The event was graced by Lieutenant General Shri Gurmit Singh, PVSM, UYSM, AVSM, VSM (Retd.), the Hon'ble Governor of Uttarakhand, and other dignitaries, including Mr. Yashpal Sardana, Plant Head, Hero Motocorp; Brig. Krishnendu Das; Prof. Lalit Kumar Awasthi, Director, NIT, UK; Prof. Meenu Singh, Director, AIIMS Rishikesh; Prof. KK Pant, Director, IIT Roorkee; and Prof. UP Singh, Deputy Director, IIT Roorkee.



### Uttarakhand Plastics Summit:

IIT Roorkee organized the Uttarakhand Plastics Summit 2023 in collaboration with the Uttarakhand Pollution Control Board on October 10, 2023, at MAC Auditorium to generate a discussion on the need of industry and academia to work together to fulfill the Extended Producers Responsibility Rules 2022 of the Central Pollution Control Board which are under implementation now. Under this mandate, industries need to work on recycling and reuse of plastics used by industries by developing innovative technologies.



### Empowering India: Nurturing Education, Innovation & Cultural Legacy:

The institute organized this event on 24 November 2023 to not only mark the 176th anniversary of the Indian Institute of Technology Roorkee (IIT Roorkee) but also to embrace a holistic approach to education and innovation. On the day of the event, we witnessed the participation of students from various schools, such as ABN and Army Public School, in events like the Poster Making Competition/Hackathon unveiled the transformative power of their creativity. Recognizing the importance of a continuous learning curve, IIT Roorkee acknowledges the knowledge gained at the school level forms the bedrock for the educational journey ahead. The carefully selected themes of our competitions, spanning India's culture, climate change, agriculture, and heritage, aim to instill a sense of responsibility, citizenship, and environmental guardianship.



### India's Techade: Chips for Viksit Bharath:

The seminar featured a panel discussion led by distinguished experts in the field, shedding light on the myriad opportunities and challenges inherent in semiconductor manufacturing in India. Esteemed academics including Prof. Anand Bulusu, Prof. Amalendu Patnaik, Prof. Tanmoy Pramanik, Prof. Davinder Kaur, and Prof. Jasjit Suri shared profound insights into the transformative potential of semiconductor technology across various sectors, from telecommunications to healthcare. IIT Roorkee showcased its ongoing collaboration with global leaders in the semiconductor industry, aimed at fostering innovation and developing a highly skilled workforce to bolster India's semiconductor landscape. These collaborative efforts, alongside the institute's pioneering Joint MTech Program in Semiconductor Technology with leading universities in Taiwan, underscore IIT Roorkee's proactive approach towards global collaboration and talent development. With a focus on interdisciplinary collaboration, industry

engagement, and global partnerships, IIT Roorkee remains steadfast in its commitment to propelling India's technological trajectory and nurturing a technologically empowered and globally connected Bharat.

### World Bicycle Day:

Institute Sports Council organized the World Bicycle Day on 3rd June, 2023. The United Nations established World Bicycle Day for many reasons. As basic as it is, the impact of the bicycle on society is quite transformative — even the poorest people get access to basic transport with the bicycle. The idea behind World Bicycle Day is to recognize the versatility and uniqueness of the bicycle, as well as its reliability and sustainability as a mode of transportation.



### Run for Unity:

"Run for Unity" was organized, on the occasion of National Unity Day observed on the Birth Anniversary of Sardar Vallabhbhai Patel, on 29th October 2023.



### National Javelin Day:

Institute Sports Council Organized a National Javelin Day on 7th August 2023. August 7 is celebrated as National Javelin Day in India. The Athletics Federation of India, the apex body for the athletics in India, took the decision to celebrate the National Javelin Day to commemorate Neeraj Chopra's historic gold medal during the Tokyo Olympics.



### 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 30th October to 5th November 2023. The team at IIT Roorkee commits to upholding a culture of honesty and integrity and strong corporate governance based on openness, responsibility, and justice.

### Convocation:

The 23rd Annual Convocation of the Indian Institute of Technology Roorkee was held on July 28th, 2023. Shri Dattatri Salagame CEO, Executive Vice President, Bosch Global Software Technology was the Chief Guest in the Convocation. Total 1077 Degrees of B. Tech. /B. Arch. /Integrated Dual Degree/ Integrated M. Tech. / Integrated M.Sc., 685 Degrees of M. Tech. /M. Arch. / M.U.R.P. /P.G. Diploma /M.Sc./M.B.A. were awarded. In addition, 154 Ph.D./Dual Degrees were conferred in various disciplines.



# Institute Lecture

- **Revered Brahmachari Saumyananda Giri Ji,**  
Date: March 11, 2024, Topic: Kriya yoga Science: Key to a joyous and successful life.
- **Padma Shri Kanwal Singh Chauhan,**  
Date: March 02, 2024, Topic: Integrated Farming Systems: A Modern Agricultural Approach.
- **Padma Shri Dr. Bharat Bhushan Tyagi,**  
Date: March 01, 2024, Topic: Innovative Solutions: Integrating Organic Farming in Modern Agriculture.
- **Prof. Manas K Mandal, IIT Kanpur,**  
Date: February 17th, 2024, Topic: What makes us unhappy? Understanding the science behind.
- **Prof. Sabu Padmadas, University of Southampton, UK,**  
Date: 11 Jan 2024, Topic: Tackling global Challenges, uncertainties and the new world order: The pivotal role of India in the next 30 years.
- **Padma Shri Umashankar Pandey,**  
Date: September 01, 2023, Topic: Community-Based Traditional Water Conservation Techniques.
- **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.
- **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 Perspective.
- **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
- **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. 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. Tomasz Paterek, Xiamen University Malaysia and University of Gdańsk,**  
Date:14-07-2023, Topic: Using Quantum Information to Test Gravity.
- **Ambassador Sanjay Bhattacharya, Former Secretary, Ministry External Affairs, Government of India**  
Date: 16th August 2023, Topic: G20 University Connect: Engaging Young Minds.



# Facilities

## Infrastructure

During the last financial year, few major infrastructure projects namely Construction of Boy's Hostel 800 capacity at Vigyan Kunj (CPWD), Establishment of Electrical Distribution System SCADA and Centralized Monitoring and Analytic Centre, Composite work including HVAC (VRV/VRF), Electrical, Civil, Fire and Safety in CAD Lab at Civil Engg. Department with 05 years CAMC of HVAC system, Composite work including HVAC (VRV/VRF), Electrical, Civil, Fire and Safety in Design Innovation Centre at Old Library, IIT Roorkee with 05 years CAMC of HVAC system. 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 Chemistry Department, Construction of Western Academic Block, Mehta Family School of Data Science and Artificial Intelligence (MFSDSAI) including internal EI, HVAC, firefighting, fire alarm, lifts, Audio Visual System, CCTV and BMS installation and development works at IIT Roorkee, Uttarakhand, Reorganization, Augmentation and Renovation of Academic Spaces at IIT Roorkee, Roorkee (Uttarakhand): Phase-I of Metallurgical and Material Engineering Department (MMED) and Renovation work (Civil, Electrical and Fire & Safety work) of Ravindra Mess Lounge for Offices/Labs of ISRO, CSST and DIA-CoE (DRDO) in IIT Roorkee.

## Mahatma Gandhi Central Library

Mahatma Gandhi Central Library (MGCL) is one of the oldest academic libraries in the country. It came into existence at the very beginning of the establishment of the Institute (i.e. 1847). It started as a small college library with a collection of a few hundred books to meet the needs of about 34 students and 6 teachers. Its collection was considerably augmented by the amalgamation of the Ganges Canal Library in 1856; and, the college library was renamed as the Central Library. In 1862, its collection was further enriched by adding the collection of the Addiscombe College Library of East India Company. Today, MGCL is housed in a modern

centrally air-conditioned building equipped with all the latest ICT facilities. It is spread over four floors with a carpet area of 80,000 sq. ft.

Sharp elevation in the applications of information technologies in library services has raised the expectations of the library. It has become a challenge for librarians to keep pace with changing information sources and delivery methods on the one hand and to meet user expectations on the other hand. MGCL has enthusiastically been doing the same over the years; and, like past years, the focus was on strengthening electronic resource collections and digitization of Masters & Doctoral Dissertations during the reporting period. MGCL has also played a significant role in compiling and uploading data for the prestigious NIRF ranking and AISHE Survey. The library currently has over 10000 registered Users including Students, Faculty and Staff. A detailed list of library resources is given in the following table.

SN	Types of Publications	Addition
1	New Books acquired	591
2	Hindi Books acquired	78
3	Gratis Books acquired	623
4	eBooks acquired	1013
5	These & Dissertations added	705
6	eJournals through eSS & IITR Subscribed	12000+
7	Full-text Databases subscribed	09
8	Bibliographic, Citation & other Databases	11
9	Online Standards and patent packages	06
10	Online Newspaper & Magazines Subscribed	05
11	Print Newspaper & Magazines Subscribed	37
12	Remote Access Software subscribed	Knimbus
13	Writing Support Software Tool subscribed	Grammarly
14	Plagiarism Detection Software Tool subscribed	Turnitin

## Library and Information Services

The Institute has access to over 12000 electronic journals/proceedings, 09 full-text databases, 05 bibliographic/citation databases, 64000 e-books, 04 standards databases (namely ASTM, IEC, British and Indian Standards), 02 Patent Databases, 7 journals archives, 03 research support software/tools, etc., from several publishers and aggregators through direct IP-based and Remote Access connectivity. A detailed list of Publisher resources is given in the following table

SN	Publisher / Source
1	ACS eBooks Library
2	Bloomsbury Architecture Online Library
3	Bloomsbury Design Online Library
4	Bloomsbury Collection
5	CBS eBooks Library
6	CRC netBase eBooks Library
7	Cambridge University Press Online Library
8	DeGruyter eBooks Library
9	Edward Elgar eBooks Library
10	EBSCO Portal
11	Elsevier Science Direct eBooks Library
12	Emerald BME eBooks Library
13	IOP Society eBooks Library
14	Khanna Publishers
15	McGraw-Hill Access Engineering Library
16	McGraw-Hill Education eBooks Library
17	New Age International
18	Oxford Handbooks Online Library
19	Oxford Scholarship Online Library
20	Pearson - Proquest Online Library
21	Sultan Chand & Co
22	Springer Nature Online Library
23	Wiley Online Library
24	World Scientific Online Library
25	SAGE Knowledge Library
26	SAGE eVidya Library

## Facilities and Services

The library provides a variety of facilities and services to its users including students, scholars, faculties, and visitors. It has reading space, wi-fi connectivity, digital surveillance, and dedicated computer terminals to search the online library catalogue on all four floors. It also has a separate user area with an ample number of the latest PCs at the ground floor for browsing online resources. The library provides research support services (literature search support, reference management, Grammarly, etc.), plagiarism check support, document delivery service, document tracing service, photocopy/printing service, etc.

## Remote Access Service

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 64,000 eBooks and over 12000 eJournals are accessible through eLibrary portal and mLibrary mobile app. Currently, there are more than 6500 registered users of the remote access services. During the reporting period, this service was used by more than 2300 active users. More than 3.4 lakhs electronic resources (books/chapters and research articles) were searched, viewed and downloaded in terms of remote access-based views and downloads.

## User Awareness Programmes

The following user education programmes have been organized during the reporting period:

1.	Online Training Session on “Turnitin - Classroom Workflow” exclusively for the faculty members of IITR – 27 Oct 2023
2.	Online session on “Remote Access platforms and library resources” for the students of EMBA Program – 24 August 2023
3.	Training session on “Remote Access Platforms - eLibrary and mLibrary” – 23 June 2023



## 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 2023-24 are as follows

- On the Occasion of World IP Day (26th April 2023), Article/ Essay Writing Competition on theme “How Women are driving innovation through IP and creativity” for students of IIT Roorkee was organised by DPIIT IPR Chair, IIT Roorkee
- DPIIT IPR Chair, IIT Roorkee in association with The West Bengal National University of Juridical Sciences, National Law School of India University, Gujrat National Law University and Tezpur University on June 10th 2023, Conducted a webinar, “Copyright and the Protection of Expression in the Media and Entertainment Industry”
- DPIIT IPR Chair, Department of Management Studies, IIT Roorkee in Association with Shailesh J Mehta School of Business, IIT Bombay hosted the 6th Biennial International Management Conference “**Management of Intellectual Property Rights and Strategy**” -2024 (MIPS-2024). More than one hundred delegates attended the MIPS 2024.



Following Workshops and Activities Were Conducted During Pre-Conference Tutorials

- o Standard Essential Patents in India: Legal Aspects
- ✓ A workshop on “Standard Essential Patents and Indian Legal System” was organised as part of Pre-Conference Workshops at Department of Management Studies, IIT Roorkee. The objective of the workshop was to provide insights about various important aspects of SEP in Indian scenario.
- o Workshop on Patent Searches and Patent Databases
- ✓ Use of Derwent Software. A Workshop/ Hands on Session was so to provide practical knowledge to conference participants for carrying out Prior art search using Derwent software.
- o Workshop on Optimizing Patent Application Drafting: Harnessing the Power of AI
- ✓ To highlight the importance of Artificial Intelligence in patent drafting process, a workshop on using AI was conducted by DPIIT IPR Chair on 22nd of February 2024.
- o Moot Court on Infringement of Trademark Case of Ore Vs Melto
- ✓ The purpose behind conducting the Moot Court specifically in IPR infringement was to make students, Faculty members at IIT Roorkee, acquaint with various procedural aspects in IP infringement cases. This is the first Moot Court being organised at IIT Roorkee.
- Mr. Rahul Singh Rathore, Doctoral fellow (DPIIT IPR Chair) under the Supervision of Prof. Rajat Agrawal, successfully defended his Ph.D. Thesis on November 2nd 2023.
- Prof. Rajat Agrawal, PI and Coordinator DPIIT IPR Chair, Conducted 35 workshops/ Webinars and key note talks in the Financial year 2023-24. The workshops and lectures were focused in the domain of Intellectual Property Rights and its effective Management. People from Academia, Industry and other fields were sensitized on various aspects of Intellectual Property Rights. Few important workshops conducted by Prof. Agrawal include, lecture in National IPR festival at CRRRI- CSIR, New Delhi

on July 28th 2023. Training Session for the Newly Recruited Scientists of ICFRE at Forest Research Institute, Dehradun on January 04, 2024, Training Session for Defence Research Development Organisation on January 08th, 2024, Workshop at Dr. Raghunandan Singh Tolia Uttarakhand Academy of Administration, Nainital, Workshop on MSME Ecosystem in Management Development Program Jointly Organised by Entrepreneurship Development Institute of India and PM Gati Shakti Centre of Excellence in Logistics Dehradun on March 13th 2024

- Prof Rajat Agrawal is member of various National Level Expert committees and Think Tanks formed by Department for Promotion of Industries and Internal Trade on issues related to IPR. Various Suggestions in the form of detailed report like “Inputs on WIPO Documents Number SCT/41/6 REV., (SCT/43/6 REV) and SCT/44/6 REV.4) for the Standing Committee of Trademarks, Industrial Design and GI (SCT/47) have been provided by the IPR Chair to Department for Promotion of Industries and Internal Trade, Government of India.

## E - Learning Centre

E - Learning Centre (ELC) formerly Educational Technology Cell (ET CELL), a part and parcel of IIT Roorkee is situated near the building of Center for Continuing Education. This cell was primarily conceived to produce high quality Video/Web/Multimedia based instructional material, syllabus-based content development for the National Programme on Technology Enhanced Learning (NPTEL) project and short courses/training programmes for faculty for development of video/web based courses. Over the period of time, its role has been expanded to absorb new paradigms of e-learning, training of faculty to develop their own e-content and to use e-content developed by NPTEL, training of faculty from other institutes to facilitate streaming of video and web based lectures in their respective institutes, streaming of video lectures round the clock on demand, at IIT-Roorkee creation of question banks, quality control of e-content generation through feedback mechanism and conducting research related to pedagogies in e-learning.

## Major facilities

The Centre has state-of-the art digital video cameras, non-linear editing systems, audio and video systems, teaching aids, substantial number of computers, servers and softwares required to produce high quality web based and video based courses and 3D-animation. During the year 2023-24, E-Learning Centre recorded **33** courses, covering **10** disciplines at IIT Roorkee. During the year, E-Learning Centre provided **187** 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 **864** full semester-long courses. The viewership (enrolled) of courses through web stood at **630252** for **187** active courses. The Centre has successfully done the live streaming of couple of Convocations in 2023. The Centre has also covered various institute activities such as conferences, inaugural functions, international conclaves and MoU signing ceremonies etc. E-Learning Centre also offers its services in hybrid mode to create video courses for the current semester and shared it with IIT Roorkee students.

## Institute Computer Centre

ICC is dedicated to provide best-in-class IT services & support to the academic, research & administrative activities of the institute. The Data Centre housed in ICC is operational 24 x 7 and facilitates computing and internet/intranet application services to the campus community.

## 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:

- Wired & WiFi Internet facility at New Mathematics & HSS Building. The project has been completed this year successfully.
- In a bid to integrate all processes of the Institute, the iConnect portal was developed and implemented. This portal currently holds Finance & Accounts, Sponsored Research and Industrial Consultancy, Leave Management System, Complaint Management System, Guest House and vehicle Booking portals. These portals can be accessed through a single dashboard and a single user ID/password system facilitating ease of use.
- Network Infrastructure Upgradation Plan for Saharanpur Campus along with its Integration with IITR Main campus using NKN Private VPN Architecture is under progress.
- Network Upgradation of Bhavans is under progress.

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

- HPC Workshop with MATLAB.
- COMSOL® Support Day@IIT Roorkee.
- Online webinar on Recent updates in Ansys software.
- Workshop on The Innovations on Data & AI by Microsoft.
- **Workshop on Innovation on Productivity Co-Pilots by Microsoft.**
- Training on 3DEXPERIENCE SOLIDWORKS.
- Online workshop on the CFD and Heat Transfer Module using COMSOL Multiphysics software.

- Webinars on AI and Quantum Computing for Chemists with MATLAB | IIT Roorkee.
- HPC/DL Awareness Bootcamp@IIT Roorkee.
- Online Workshop on “Simulation in Chemical and Electrochemical Engineering”.
- Training on Simulia Abaqus software for Finite Element Analysis (FEA).
- MacOS Online Technical Workshop.
- MacOS Online End User Workshop.
- Workshop on Best Practices of Passive Deployment and Maintenance by Commscope.



## Institute Instrumentation Centre

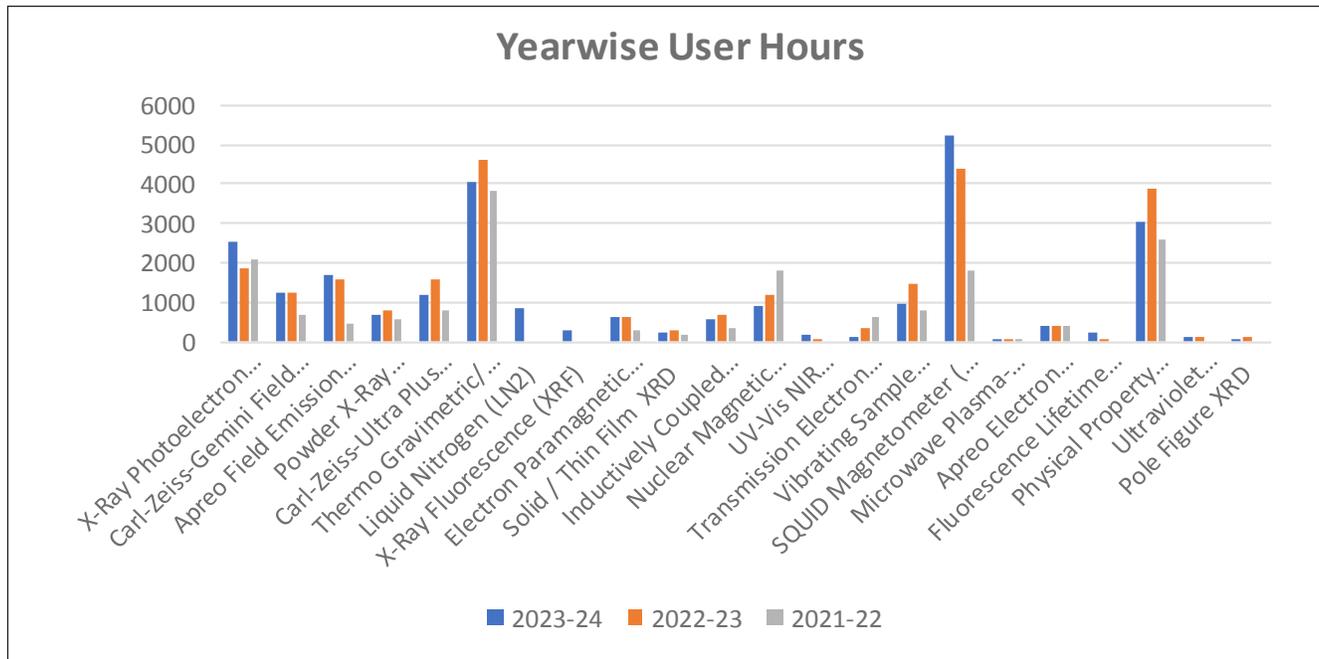
Institute Instrumentation Centre (IIC) Institute Instrumentation Centre (IIC) houses large number of sophisticated instruments used for high magnification imaging, material characterization, precision chemical analysis, etc. The Centre is run by trained technical manpower and researchers, who are guided by experienced Faculty experts. Expansion of the Centre took place with the addition of new and ultra-modern equipments in order to enhance the efficiency and functioning to desired levels.

### Usage

Graphical representation of total no. of uses hours on different equipments for financial year 2021-22, 2022-23 and 2023-24 is shown in fig.(a). On various systems, there is significant enhancement of user hours compared to previous years. The analysis reveals a significant increase in equipment usage compared to the previous year, indicating heightened activity and demand within the organization. By leveraging these



insights, implementing strategic recommendations, and fostering a culture of efficient resource management, the organization can effectively meet current and future operational needs while driving towards its goals of excellence and innovation.



### Education and Engagement

The centre organized a short term course on “ADVANCED ANALYTICAL TECHNIQUES FOR MATERIALS CHARACTERIZATION” under Entrepreneurship and Skill Development Programme (ESDP). The course on Advanced Analytical Techniques for Materials Characterization is designed to provide students and professionals with an in-depth understanding of advanced analytical methods used in materials science and engineering. This comprehensive course covers a wide range of techniques essential for characterizing the structure, composition, properties, and performance of materials at the nanoscale and beyond.

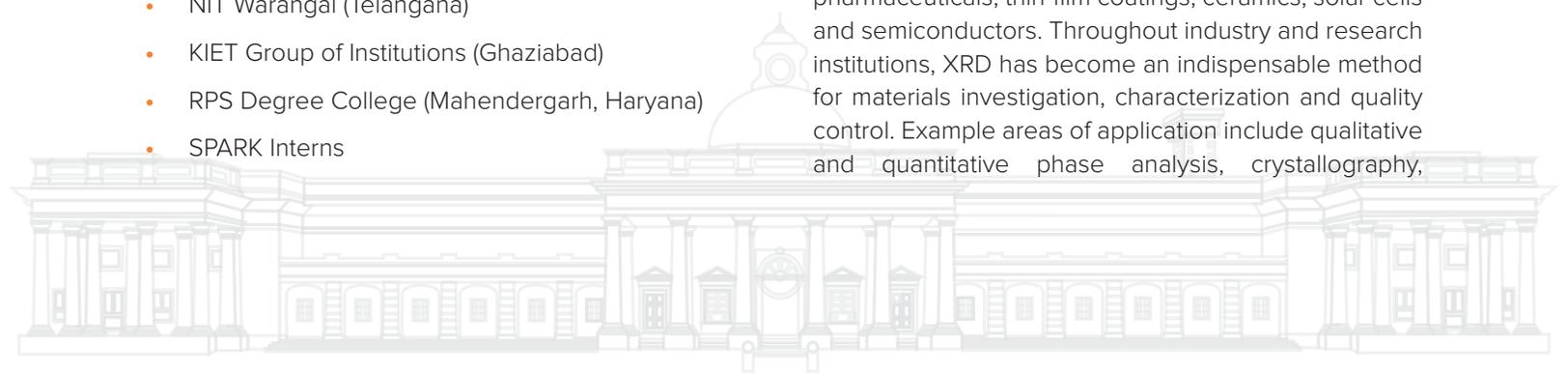
- The centre has organized visit of students and faculty members to various high-end instruments of IIC belongs to educational institutions a few are mentioned below:
  - NIT Warangal (Telangana)
  - KIET Group of Institutions (Ghaziabad)
  - RPS Degree College (Mahendergarh, Haryana)
  - SPARK Interns

- Advanced Material Characterization Techniques (CYN-703) course students
- International workshop on “Membrane Technologies for Desalination, Energy and Water Sustainability: MemDEW” participants
- Visva Bharati University
- Participants of Advanced Engineering Programme for executives of PCBL, Kolkata
- JBIT Dehradun

### New Instrumentation & Upgrades

#### Bruker D8 Advanced & Bruker\_D2-Phaser X-ray Diffractometer (XRD) –

XRD is a high-tech, non-destructive technique for analyzing a wide range of materials, including fluids, metals, minerals, polymers, catalysts, plastics, pharmaceuticals, thin-film coatings, ceramics, solar cells and semiconductors. Throughout industry and research institutions, XRD has become an indispensable method for materials investigation, characterization and quality control. Example areas of application include qualitative and quantitative phase analysis, crystallography,



structure and relaxation determination, texture and residual stress investigations. The X-ray Diffractometer can be used for nearly all X-ray diffraction application, such as structure determination, phase analysis, stress and texture measurement.



**Critical point dryer -**

Critical point Drying is an established method of dehydrating biological tissue prior to examination in the Scanning Electron Microscope.



**X-RAY FLUORESCENCE (XRF) -**

XRF is one of the best methods for elemental analysis. In XRF, the sample is bombarded with X-rays. This excites the sample to generate X-ray fluorescence. The X-rays “shoot” individual electrons out of the atoms of the elements, primarily out of the inner atomic shells K and L. The resulting vacancies are filled up again by electrons from higher energy shells. The excess energy of these electrons is then emitted in the form of X-ray fluorescence radiation. This radiation is characteristic for each element like a fingerprint and independent of the atom’s chemical bond. The intensity of the radiation is proportional to the concentration of the element in the sample. XRF, however, can directly analyze each element without destroying the sample and no sample preparation is required.



**Research Output & Impact**

Project Status	Sponsored	Amount Rs. (in lacs)
New	1. DRDO	Rs. 250.00
	2. DRDO (SSPL)	Rs. 127.00*

**Personnel:**

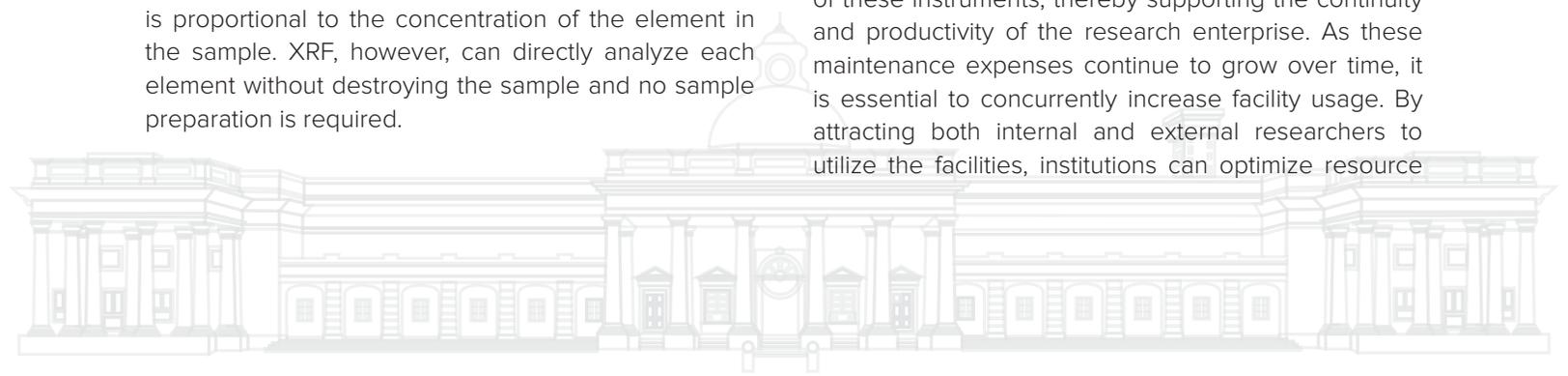
Total 01 Staff and 01 Students have joined the center in this session. Total 09 PhD students & 01 Post Doc has been enrolled

**Student Achievement:**

- Ms. Ananya Bansal & Ms. Nitesh Choudhary received prestigious PMRF fellowship.

**Finances & Business:-**

The expense associated with maintaining advanced analytical instruments may be considerable, It is a necessary investment to ensure the uninterrupted operation of critical research equipment. By prioritizing regular maintenance and proactive servicing, institutions can minimize downtime and optimize the performance of these instruments, thereby supporting the continuity and productivity of the research enterprise. As these maintenance expenses continue to grow over time, it is essential to concurrently increase facility usage. By attracting both internal and external researchers to utilize the facilities, institutions can optimize resource



utilization and generate additional revenue streams. Furthermore, by maintaining competitive user rates, institutions can incentivize increased usage and foster a vibrant research community. Here is the last 03 years User fees, operational and maintenance cost details:-

F. Y.	User Fees (Rs)	Operational Cost (Rs)		Maintenance Cost (Rs)	Users (%)	
		Testing Grant	DOC/Non-PLAN		IITR	External Users
2021-22	26,65,117/-	24,45,923/-	84,68,560/-	77,38,390/-	82.3	24.3
2022-23	45,69,032/-	33,96,437/-	1,43,63,880/-	70,78,932/-	83.1	16.9
2023-24	41,28,678/-	29,23,121/-	1,07,64,742/-	42,33,139/-	75.6	17.7



## Continuing Education Centre (CEC)

CEC has signed new MoU's to conduct courses in various disciplines. Also, we have organized some new courses on Techno Managerial skills. We have received overwhelming positive responses from course participants who have found immense value in their learning experience. Furthermore, we have initiated various development activities and constituted the following committees to streamline the process for purchase and other activities of the Centre:

- (i) Centre Advisory Committee
- (ii) Centre Purchase Committee

With the help and support of the Committee members CEC is in process of implementing many improvements. CEC is enhancing the infrastructure to better accommodate participants attending courses around the world. These improvements are aimed at ensuring

a smoother and more seamless experience for all of our participants. We are investing in upgrading to our system and platforms to provide enhance accessibility and performance. As we are organizing some software-oriented courses so it was felt that there is a huge need to have a computer lab in CEC. On the request of CEC, Institute has sanctioned an amount of Rs. 1,08,70,000 for the establishment of computer lab at Continuing Education Centre. The Centre has utilized the full amount to establish the Computer Lab. In addition to this a new series of courses with some Govt. organizations and Industries were organized and the feedback received from these new courses are really very motivating. Remaining courses of these Organizations/Industries are planned to be organized in the next financial year i.e. 2024-25. During the year 2023-24 the Centre has conducted total of 54 courses in online and physical class room mode at IIT Roorkee and Greater Noida Extension Centre of IIT Roorkee and at Sponsor's site as per the client organization's need. This year the Centre has conducted 36 online/physical modes short term courses in which about 2173 participants have been trained. The Centre has organized 18 Open participation courses of long duration in which about 722 participants participated successfully.

### Memorandum of Understanding

As the activities of the Centre are increasing rapidly and there was much requirement for signing the MoUs with other organizations to organize open participation courses. Collaborating with other organizations brings diverse perspective, enriching the content and delivery of the courses. The CEC has signed MoUs with the below organizations to conduct open participation courses in online/offline/hybrid mode :

- Jaro Institute of Technology Management & Research Limited
- Hunarho Learning Solutions Pvt. Ltd.
- Future Tech Wizards LLP
- TalentsPrint
- Protecon BTG Pvt. Ltd.

This year, the CEC has introduced new sponsored courses for some organizations/industries to enhance their officer's skills and knowledge making them more proficient in their current roles and better equipped to take on new responsibilities. Partnering with reputable organizations has enhanced the credibility and reputation of the courses.

- Commandant Works Engineering, Jhansi.
- Maruti Suzuki India Ltd
- NTIPRIT, Ministry of Telecommunication for training of ITS Officers
- Phillips Carbon Black Limited (PCBL)
- Indian Navy,
- OCTDMS, Dept. of Wate Resources Odisha
- Flipkart Internet Pvt., Karnataka
- Deloitte, Consulting India Pvt. Ltd., Hyderabad
- NTPC
- NHPC
- BEL
- IIRS ISRO
- IMTI Tamilnadu.

We are running online courses from the last 3 years for the employees of Deloitte Consulting India Private Limited, a world leading management consulting firm. This year more than 200 employees from Deloitte were trained. Also we have coordinated numerous courses for prestigious Govt. Organizations and Industries that have been our valued clients for many years such as NTPC, NHPC, BEL, IIRS ISRO, IMTI Tamilnadu etc..

### Virtual Platforms

Currently, the following virtual platforms are being used to organize open participation long term courses in association with various ed-tech partners:

- a) CoudXLab
- b) Imarticus

- c) Simplilearn
- d) TimesPro
- e) Coursera

### 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 2023-2024 06 (six) 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 also has always been eager to promote the implementation of Official Language in the administrative and academic fields of the Institute. The cell plays a vital role in Hindi translation of the Institute's important documents. Apart from this, on the occasion of Hindi Diwas 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. 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. Many other activities also related to official language are to be done throughout the year.

The Parliamentary Official Language Inspection of the Indian Institute of Technology Roorkee was successfully completed by the first sub-committee of the Honorable Parliamentary Official Language Committee on 08 May, 2023 in Dehradun.



The details of various activities performed by the office during the year 2023- 24 are as follows:

### 1. Institute Official Language Implementation Committee:

- **Progress Reports of Hindi:** Quarterly and Half yearly reports, based on the use of Hindi progress in the institute, are sent after every three and six months to Ministry of Education, Regional Implementation Office (North) Ghaziabad and Narakas, Haridwar Secretariat.
- **Hindi Lectures & Workshops:** Official Language Cell organized Hindi lectures and workshops on different topics to promote Hindi among the staff of the institute, so that they are encouraged to do their official work 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. IIT Roorkee participated in meetings, conferences and many other events organized by Narakas, Haridwar and won awards.
- **Hindi Diwas :** Since 1980, the Institute has been organizing Hindi Diwas every year on 14 September. This year the Cell organized Hindi Pakhwara during 14 Sept. to 4 Oct. 2023. During this period, cell organized different types of competition like Hindi Translation, Hindi Noting & Drafting, Hindi Essay Writing and other incentive schemes for the staff. The prize distribution ceremony of these competitions was held on October 04, 2023. Chief guest of this function was Shri Suresh Tiwari. Total 49 winners including officers, faculty, employees and students were awarded.



- **International Mother Language Day :** On occasion of International Mother Language Day 2024, 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 school students in their mother tongue. The prize distribution ceremony of these competitions was held on March 5, 2024. Chief guest of this function was Padma Shri Chamu Krishna Shastri. Total 74 winners were awarded in different competitions.



- **Publication of Hindi Magazine:** “Praudyogikee Manthan” is a half yearly Hindi Magazine published by Hindi cell. It contains articles based on technology, science and research as well as on subjects related to official language, translation, education, sports and health. Selected three articles from the Magazine were awarded in Hindi Diwas Samaroh.
- **Hindi Language & Hindi Typing Training:** Weekly classes of Hindi language & typing were organized by the Cell in office and Computer centre. Two faculty members of Central Hindi Training Institute imparted 3 days training to the enrolled staff of Hindi typing. On 08 January 2024, Hindi Typing Exam was conducted in two sessions at the lab of the Computer Science and Engineering department for 34 registered employees of the institute and 51 of Dehradun. Hindi Language exam was conducted at Dehradun centre.
- **Hindi Classes for Foreign Students:** Once in a week the cell organized Hindi classes for foreign students of the institute from February 2024.
- **Hindi Book Exhibition:** On the occasion of Hindi Diwas, Hindi Book Exhibition was held in Mahatma Gandhi Central library from 26 to 30 Sept 2023. There are approximately ten thousand Hindi books.



- **Translation:** The Cell has played an important role in translation of Annual Report, Convocation Report, Samvad Newsletter, institute website and other official documents.
- **Kavi Sammelan:** On 12 October 2023, the Official Language Cell and Thomso team jointly organized a national level Kavi Sammelan, in which Padmashree Professor Ashok Chakradhar, Dr. Anamika Jain Ambar and six other poets were invited.



- **Pandit Govind Ballabh Pant Jayanti :** On 10th September 2023, 136th Jayanti of Pandit Govind Ballabh Pant anniversary was celebrated in the institute.



- **Hindi version of Coffee Table Book:** On the occasion of completion of 175 years of the institute, a coffee table book was published, the Hindi version of which was prepared by the Hindi Cell and released on the occasion of Hindi Diwas.



### Design Innovation Center (DIC)

The Design Innovation Center (DIC), named नवोन्मेष, at IIT Roorkee is a MoE, Government of India approved center with the basic objective of creating design awareness. It is one of the twenty such centers which are developed under the National Initiative of the Ministry for setting up of DIC, Open Design School and National Design Innovation Network in the country. The center will thrive for developing design and innovation as a culture while primarily addressing the problems of the North-West Himalayan region. DIC at IIT Roorkee foresees a uniquely impacting culture of design by thinking, knowing and doing. It creates a propelling perspective to integrate design thinking into state-of-the-art engineering, architecture, sciences, technology and management driven academic focus. Envision a Hub of Design Innovation creates myriad possibilities for developing an outcome-based paradigm shift in academic cultures. This involves developing new models of learning, exposures to local, regional, national and international perspectives, innovating for need, documenting and archiving processes as indigenous repositories of design knowledge and disseminate and share the same in a holistic form. The DIC at IIT Roorkee not only foresees a development of creative problem-solving approach but also intends to fuel its research mandate through design-based innovation in various sectors aiming at resolving human issues thereby bridging needs and ideation, intellect and

technology, expressions and production and above all, a meaningful cycle of progress with sustenance. The Senate in its 99th meeting held on 03.01.2024 approved the proposal of the Department of Design to offer the Bachelor of Design (B. Des.) Programme along with its course structure. The programme will be made effective from the autumn semester 2024-2025 with intake of 20. The admission for the programme shall be through the UCEED. Design Innovation Center is an external funded project by Ministry of Education (MoE), as per the mandate Design Innovation Center provides support for Product Development, Prototype Development, student projects, workshop/outreach activities etc.

### 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 problemsolving 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. Last year 1st year undergraduate course has been introduced, total 1330 innovators include faculty, students and staff have associated, 333 multi-disciplinary project showcase.

### Major Facilities

- Desktop 3D Printers-Raise 3D E2 carbon filter, Raise 3D E2, Raise 3D Pro3, Raise 3D Pro3 Plus, Flash forge.
- SLA 3D printer-Phrozen sonic mighty 8K
- Workstations (High end GPU's)

### Academic Courses Supported

- Additive Manufacturing (MIN- 601 & MTN- 318)
- Advance Manufacturing Process (MIN- 572)
- Product Design and Development (MIN- 575)
- Design Thinking (IDN- 503)
- Form Design (IDN -504)
- Tinkering and Mentoring (TMI-101)

### Incubation Support

#### Students Entrepreneurship Projects supported by Tinkering Lab

S. No	Project's Name	Sponsored amount by Institute
1.	Black hawk	350000.00
2.	AlgoEase	150000.00

### Notable activities:

- **Established a New Cyber Physical System (CPS) Zone** This facility will add a unique aspect to our Tinkering Lab that can support many new upcoming students' activities related to Computer Science, Electronics, Electrical, Mechanical Engineering etc.



- Grant received from 1981 Batch to create Metaverse zone The Tinkering Lab at IIT Roorkee has received a grant of Rs 40 lakhs from the 1981 Batch to establish the Metaverse Zone. The Metaverse Zone will serve as a cutting-edge virtual environment within the Tinkering Lab, providing students with unprecedented opportunities for creativity, collaboration, and exploration.
- Non-Funded 62 Projects of UG, PG, Ph.D. students, faculties and Student Technical Council groups supported by Tinkering Lab few of them are as follows; Exploring Light Dependent Resistors (LDRs): A Hands-On Approach to Foster Creativity and Innovation, Design and development of UAV for mining applications, Smart Sensor-Based Irrigation System for Optimal Plant Health Management, Motorizing RTP-PaAC's Dish for Precision Alignment, Human Motion Detection

Security Alarm System Utilizing PIR Sensor Module, Building prototype of acoustic levitator using ultrasonic transducers to lift small objects, To develop a Pipeline Leakage Detection System with Water Flow Rate Measurement, Transformers (Robo-Car) is a transformable robot car into a robot is a concept often seen in science fiction and robotics, Heart Rate Monitoring System with OLED Display, Smart Blink stick with auditory warning, LLM based navigation of mobile manipulator.

## Key projects

### Single-Point Incremental Forming Processes

Single-point incremental forming & hole flanging process is a die-less manufacturing technique used to create several sheet metal components. The advantage of this process lies in terms of its high formability, as compared to the conventional deep drawing, hole flanging and stamping process. SPIF have been widely used in different sheet metal deforming processes. A specialized single point incremental tool is used to incrementally form the flange around the hole & sheet metal forming industries ranging from automotive, aerospace, medical sector, etc. However, the production of components with a 90° wall angle is difficult to produce using the of single-stage SPIF. Therefore, nowadays, therefore SPIF has been used for producing straight wall components using multi-stage deformation techniques. The advantage of creating straight wall components using the SPIF process is that a part can be deformed up to larger depths with precise control over the shape and geometry. Therefore, to fulfil the desired objective, the services of a vertical milling center (VMC) along with some other tool room equipment such as a Laser cutting machine, grinder, drilling machine, etc. are used.

### Metaverse – Virtual Reality

The virtual lab tour was created in unity and models were made by us in blender. It was presented in the intro talk, so to give IITR junta a glimpse of the potential of metaverse.

### Shot Scope's

ShotScope, developed by I.I.T Roorkee startup Linearized Amplifier Technologies and Services (Linear-AmpTech), is an innovative Gunshot Detection and

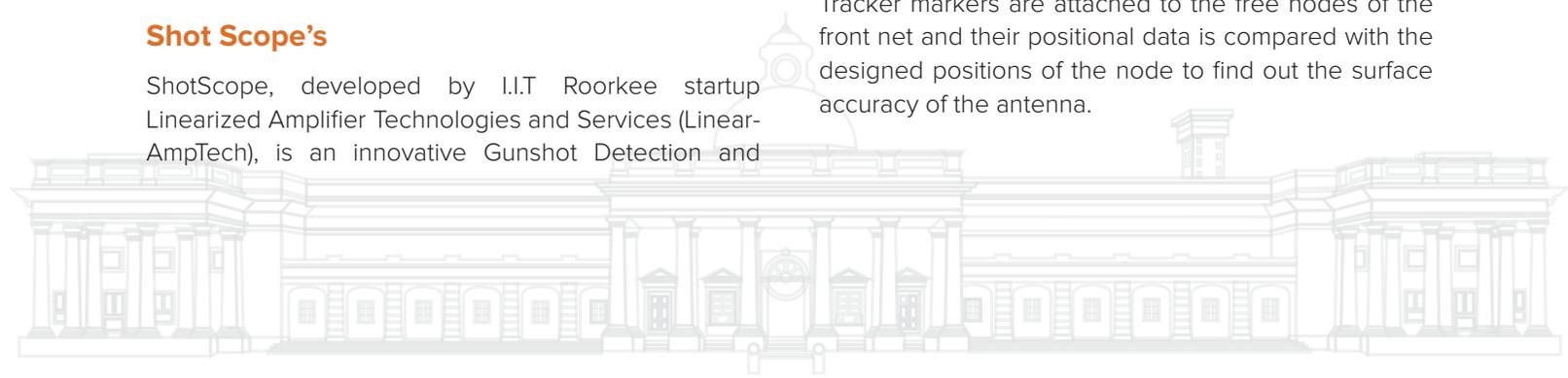
Localization system. ShotScope's advanced technology enhances situational awareness in warfare, enabling swift detection and localization of gunfire, including snipers, thereby empowering defense personnel and bolstering troop safety. Beyond military applications, ShotScope addresses pressing global issues such as firearm-related deaths, offering real-time detection and firearm geo-locating capabilities for proactive crime prevention and public safety measures under smart cities.

### Radio Telescope Project

Microwave Ray Imaging using a TV Dish offers a unique opportunity for amateur astronomers to delve into the realm of radio astronomy. By repurposing a satellite TV dish and employing affordable components, enthusiasts can construct a functional radio telescope at home. This approach democratizes access to radio astronomy, empowering individuals to explore the cosmos in a new dimension. 3-D printed gears and stepper motors are used to construct this telescope.

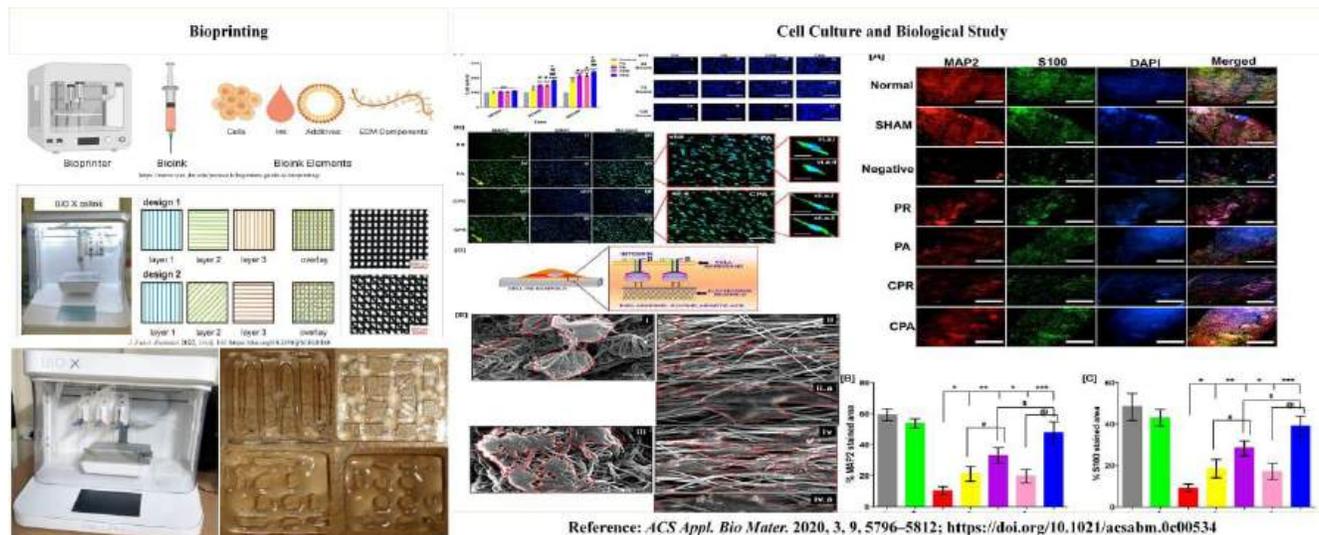
### Design and Development of cable-net structure for mesh antenna

The aim of the project is to develop a parabolic cable-net structure for a space-deployable mesh antenna. A cable-net structure consists of a front triangular faceted cable net describing a parabolic reflective surface, a rear cable net for providing adequate tension to the front net for maintaining its shape, and vertical cable ties connecting free nodes of the front and rear net. The cable net is designed using the force density method in MATLAB. A prototype for a 1m diameter antenna is fabricated, as shown in the figure below. The end connectors of the truss members are 3D printed from PLA material in Tinkering Lab, IIT Roorkee. The cables are connected to each other via an acrylic circular node fabricated on the Easel Carvey machine in Tinkering Lab. After the assembly of the cable net structure, the surface accuracy of the front cable net needs to be identified experimentally. This is done with the help of Motion Capture system in Tinkering Lab. The Opti Tracker markers are attached to the free nodes of the front net and their positional data is compared with the designed positions of the node to find out the surface accuracy of the antenna.



### Developing 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.



Bio Printing cell culture and biological study

### 3D-Printing of Radiation Detectors

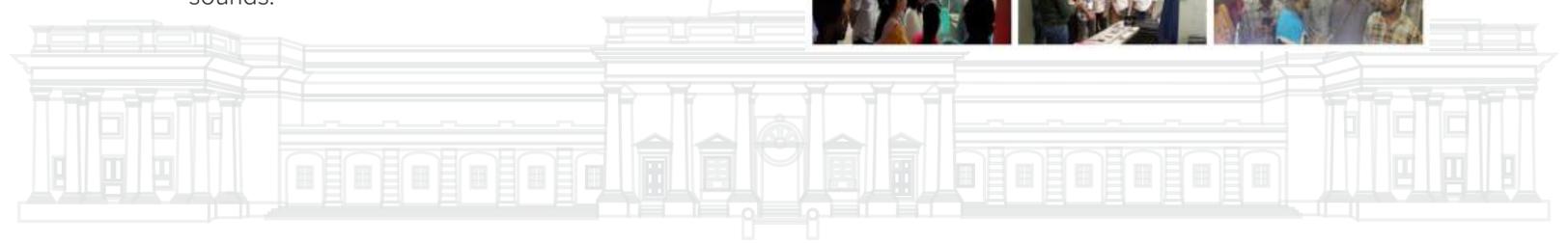
In this project, organic radiation scintillation detectors will be fabricated using the 3D-printing technology. Conventionally, organic plastic scintillation detectors are made using thermal polymerization of monomers. With the advent of 3D printing technology, it is feasible to print these plastics in bulk and complex geometries. A DLP-based 3D printer has been used to print the initial samples by mixing the scintillation cocktail with a suitable photo-curable monomer. Efforts are still in progress to make the scintillators more transparent, scale the prints to bigger size and print complex geometries. Samples printed so far are shown in the figure below.

### Patents supported by Tinkering Lab

- A system and method of transition from rectangular waveguide to perforated H guide.
- Liquid tool based electrochemical machining texturing device and its process.
- A material for absorbing lower middle frequency sounds.

- A free form tool fabrication using flexible 3D printed mold and low melting fusible alloy for Electro chemical machining process.

Several webinars/symposiums/workshops/conferences were organized, including Educators Training Program on Artificial Intelligence (AI) of things, Facility Exposure Program, Workshop on Carbon fiber reinforced IDEX 3D Printer, Workshop on Innovative Design: Ideation to Realization, Workshop on 3D Scanning, Workshop on Additive manufacturing, Pixels to Prototyping: 3D Printing and Scanning Workshop, Ideation workshop-DFA, DFM and cost analysis.



## Hospital

The Institute has a centrally located Hospital in the campus, which provides facilities for OPD treatment as well as IPD. The Hospital is managed by a team of Allopathic Doctors and Allopathic Contract Doctors. The Hospital has a homothetic unit. For Dental procedures, a qualified dentists is also available. The Hospital provides specialist consultation on appointment basis for ENT, Ophthalmology, Orthopedics, pediatrics, Dermatology, super specialist consultation in Cardiology, Pulmonology and Neurology. The Hospital is an excellent Health facility for the campus population to provide primary care. In case of medical emergencies after providing first aid care patient is transferred to MAX Dehradun in Ambulance available in hospital. Pulse Polio Immunization is also carried out at IIT Hospital as per government guidelines. The Hospital offers following facilities:

- OPD Facility (Allopathy)
- Homeopathic Facility
- Dental Facility
- Ward/Indoor Facility
- Minor OT
- Physiotherapy
- Laboratory Services
- Pharmacy
- ECG Services
- Ambulance Services
- Specialist OPD Services

## Hospital Statistics 2023-24

Patients Attended in OPD	177095
Physiotherapy	15500
Emergency Patients	18167
ECG	1253
X-Ray Radiology	6295
Surgical Dressing	66
Dental Treatment	11880
Pathology Lab Test	71613
Patients Admitted	2066

## Security Office

IIT Roorkee hosts various events such as Republic Day, Independence Day, convocation ceremonies, and important festivals like THOMSO, COGNIZANCE, and SANGRAM. To ensure security, security guards are deployed at key areas of the campus, and additional guards are hired and detailed during major events. The Security Office is finalizing the installation of over 290 CCTV cameras across common areas, roads, and gates, equipped with 5-megapixel resolution and edge-based analytics. These cameras operate on an independent network without internet connectivity, providing robust cybersecurity measures. The surveillance system aims to replace existing security systems and practices, enhancing the safety of students, staff, and campus residents. In FY 2022-23, the Security Office took major initiatives to improve transparency and accountability, purchase breathalyzer devices to detect alcohol and banned substances, purchase radar detectors to control speed, and purchase a patrolling motor-cycle for campus grounds and buildings. They also provide aid and assistance to campus residents in emergency situations and issue cybersecurity advisories to spread awareness among users.



# Departments, Centers 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	16
No. of PMRF	14

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
B. Arch	164	32
M. Arch	56	30
Ph. D	128	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 (IPL) to conduct high-end research in various spectrum of architecture and planning.

Project Status	Sponsored	Amount Rs. in lacs)	Con-sultan-cy	Amount Rs.in lacs
New	1	335	1	10
Ongoing	4	193.32	2	61.79
Completed	7	63.04	5	201.25

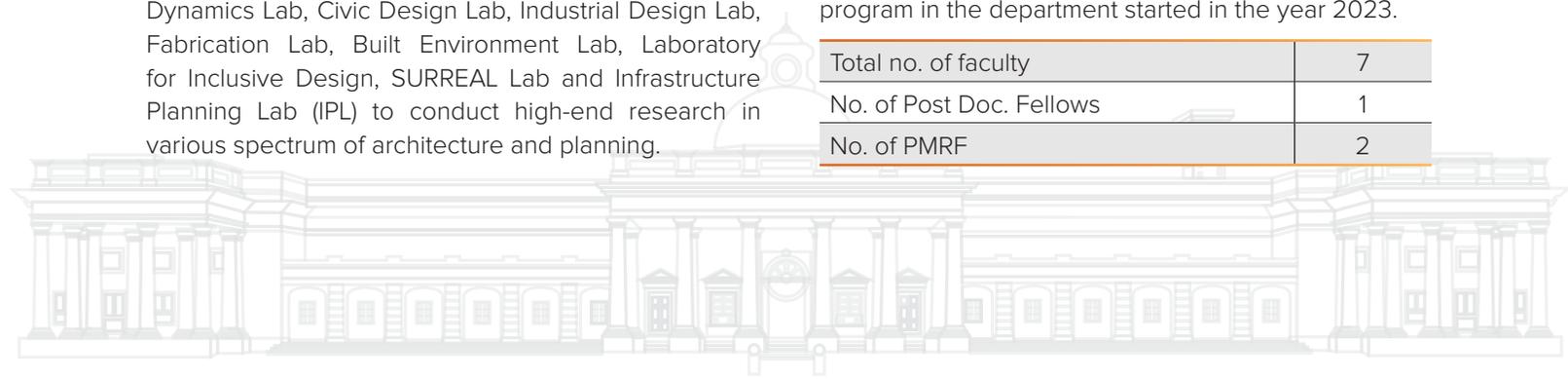
## Student Achievement

- Patle Vidya Debilal received the Best Paper Presentation Award at the 6th International Conference of Contemporary Affairs in Architecture and Urbanism, ICCAUA 2023, Alanya University in Istanbul.
- Shraddha Pandit was awarded the second place in Best Paper Presentation Award in the International Landuse Symposium -2023' organized by CEPT University.
- Chetna Rathee received first place in the Best Transportation Landmark Photography Award, organized by the 15th International Conference of the Eastern Asia Society for Transportation Studies, Malaysia.
- Anoop Kumar Sharma received a CSIR travel grant.
- Narinderjit kaur selected for AROP (Advanced Research Opportunities Program) Scholarship from RWTH Aachen University, Germany.

## Department Applied Mathematics and Scientific Computing (D-AMSC)

D-AMSC (erstwhile Department of Applied Science and Engineering) was established in the year 2022 in the Saharanpur Campus of IIT Roorkee. The Department offers degree programs in MTech and PhD. MTech program in the department started in the year 2023.

Total no. of faculty	7
No. of Post Doc. Fellows	1
No. of PMRF	2



**Prof. Sourav Kumar Sasmal** – Dr. Sasmal joined the Department of Applied Mathematics and Scientific Computing. He has received Marie Skłodowska-Curie Action (MSCA) OP JAK fellowship to work at the University of South Bohemia, Czech Republic. He earned his bachelor's and master's from Ramakrishna Mission Residential College and IIT Madras, respectively. His research focused on mathematical modelling on ecology, epidemiology, and evolutionary game theory.

**Prof. Pankaj Gautam** – Dr. Gautam joined the Department of Applied Mathematics and Scientific Computing. Prior to this, he was an ERCIM postdoctoral fellow at Norwegian University of Science and Technology (NTNU), Norway, working on Inverse problems and before this, he was a postdoc fellow at IIT Madras, Chennai. He earned his Ph.D. from IIT (BHU), Varanasi. During doctorate, his research focused on discrete and continuous dynamical systems for inclusion and optimization problems.

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
M. Tech	16	NIL
Ph. D	31	5

## 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. Please provide brief information of research domains.

Project Status	Sponsored	Amount Rs. in lacs)
New	2	90
Ongoing	1	40.33
Completed	1	50.08

Several webinars/symposiums/workshops/conferences were organized, few of them are mentioned below:

- **Workshop on Demystifying Cell-Free Communication for 6G and Beyond Systems** organized by the Dept. of ECE, IIT Roorkee during June 5 – 11, 2023, IIT Roorkee under the SERB's Accelearte Vigyan scheme.
- **Soft Computing for Problem Solving (SocProS 2023), first international conference for the department and 12th in the series of SocProS conferences** during August 11 -13, 2023. The theme of the conference this year was "Moving Towards Society 5.0," echoing the department's foresight in addressing real-world challenges through mathematical insights. Prof. Umesh Sharma, the officiating Director inaugurated the conference. The conference attracted more than 200 participants who presented their research articles at the conference.



## Department of Biosciences and 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. The main objective of the Department is to provide academic training and conduct research in the interdisciplinary areas of biotechnology with a particular emphasis on extending the knowledge generated from these studies towards the development of technologies of commercial significance. A B.Tech. (Biotechnology) course has been started in 2005. In January 2021, the department was renamed to Department of Biosciences and Bioengineering.



Thirteen students were awarded Ph. D Degree in the convocation held in 2023. The B.Tech.(Biosciences and Bioengineering) programme with a sanctioned intake of 46 students and M.Tech. (Bioprocess Engineering) with a sanction strength of 11 students were admitted. DBT sponsored M.Sc. (Biotechnology) programme with sanction strength of 30 students is also running successfully. Sponsored research projects (supported by DST, SERB, DBT & CSIR etc.) have been successfully completed and twelve new research projects with funding from Govt of India for a total outlay of Rs. 574.7353 lacs. The department has developed state of the art facilities like LC-MS, BSL-3 virus containment facility and Ashok Soota Molecular Medicine Facility.

Total no. of faculty	28
No. of Post Doc. Fellows	11
No. of PMRF	05

**Prof. Rajesh Kumar**, Dr. Kumar has joined as Assistant Professor at IIT-Roorkee, has made significant contributions to the field of immunological and molecular characterization of HIV-1 clade C viruses. He joined the Translational Health Science and Technology Institute (THSTI) in 2014 and has developed novel HIV immunogens using protein engineering and stabilization techniques. His research has led to patents and pre-clinical studies in small animals. Kumar's research focuses on antibody-based therapies targeting viruses as pathogens, particularly in emerging disease outbreaks. He has isolated human monoclonal antibodies against SARS-CoV-2.

**Prof. Satyanarayan Rao**, Dr. Rao has joined as Assistant Professor at IIT Roorkee, is working on clinical decision-making in India, including cancer treatment monitoring, biomarker development, and drug resistance in malaria. He is an expert in Next-Generation Sequencing technologies and aims to develop experimental and computational methods. Rao's translational work used cell-free DNA (cfDNA) to predict breast cancer presence, leading to a publication in Science Advances and a USA Patent. CfDNA offers a blood test-based alternative for cancer treatment monitoring and early diagnostic tests, including blood tests for cancer detection in the Ayushman Bharat Yojana.

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
<b>B. Tech</b>	161	27
<b>M. Tech</b>	11	04
<b>M.Sc.</b>	46	25
<b>Ph. D</b>	185	13

## 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:

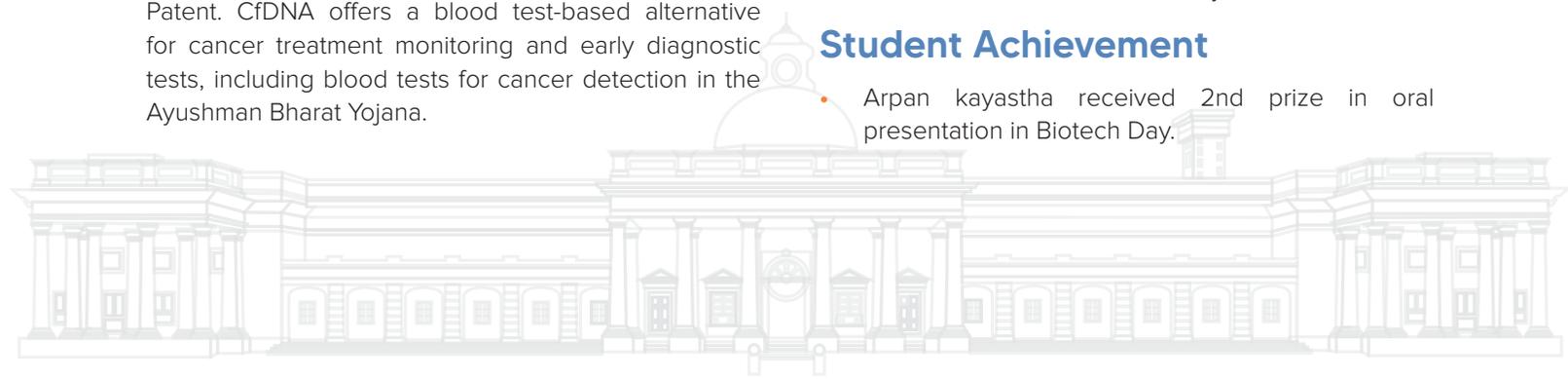
Project Status	Sponsored	Amount Rs. in lacs)
New	28	2181.6
Ongoing	48	1758.275
Completed	12	558.38

## Major Facilities

- Ashok Soota Molecular Medicine Facility
- A tissue homogenizer (IRUPT 24P) was installed in Prof. Ranjana Pathania's lab from DBT/Wellcome Trust India Alliance grant.
- A multimode plate reader (SpectraMax iD5) was installed in Prof. Ranjana Pathania's lab from DBT/Wellcome Trust India Alliance grant.
- Omics facility in Ashok Soota molecular medicine lab [LC-MS/MS (through plant grant), GC-Ms, Prep-HPLC],
- BSL-3 Virus Containment Facility

## Student Achievement

- Arpan kayastha received 2nd prize in oral presentation in Biotech Day.



- Kuldeep Jangid and Shalja received best poster award in National Seminar on Crystallography held at IMTECH Chandigarh.
- Arsalan Hussain was awarded the best poster award on “ANTIMICROBIAL RESISTANCE AND HUMAN MICROBIOME” held at THSTI Faridabad.
- Abhiroop Sett was awarded the best poster award at the 92nd annual SBC meet, held at BITS Pilani Goa.

## Notable activities

- BSL-3 Virus Containment Facility was inaugurated on 3rd January 2024.
- Ashok soota molecular medicine facility
- Students from my research team visited R&D organized at IIT Hyderabad and got appreciation on sensor technology developed by out group in BSBE department. The team got high appreciation for coconut sensor developed.



The Department of Biosciences and Bioengineering has organized various seminars including A seminar talk was organized on January 10, 2024 (Wednesday) at 5:00 pm in the BSBE Auditorium by Prof. Ayush Kumar, University of Manitoba, Canada, on “Exploring Environmental Isolates - Insights into Antimicrobial Resistance of *Acinetobacter baumannii*”

## 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 8th, respectively, as per QS world university ranking 2023. Two new faculty member, Prof. Komal Tripathi and Prof. Palas K. Farsoiya joined the department in the month of December, 2023 and February, 2024, respectively. Prof. C.B Majumder has superannuated from the Institute on January, 2024. A total of 85 research papers have been published in high-impact journals and 37 research papers were presented in Conferences. Also, nearly 7 patents have been filed and 11 patents have been granted in the year 2023-2024. The placement of UG students has been impressive as almost all UG students got attractive job offers in the core as well as software companies.

Total no. of faculty	32
No. of Post Doc. Fellows	06
No. of PMRF	08

**Prof. Komal Tripathi-** Dr. Komal has joined the Department as an Assistant Professor, Prior to this, she was associated as R&D Scientist with UOP Honeywell where she was working in various exploratory areas such as CO<sub>2</sub> Electro-reduction and Green Hydrogen. She earned her Ph.D. from Indian Institute of Technology (IIT) Delhi and M.Tech. from IIT BHU, Varanasi..

**Prof. Palas Kumar Farsoiya-** Dr. Palas has joined the Department of Chemical Engineering, Prior to this, he was a Postdoctoral Research Associate at Princeton University, working on various problems of bubbles, droplets and waves collaborating with organizations in the United States, France and Germany. He earned his Ph.D. from the Indian Institute of Technology (IIT) Bombay and M.Tech. from IIT BHU, Varanasi. During doctorate, his

research focused on interfacial waves using theoretical analysis and Direct Numerical Simulations. He was also actively involved in an industry-funded project by BASF on viscous droplet breakup in turbulent flows.

## Academic Programmes

In 1970, a master's program in equipment and plant design was established. Two additional Master's courses, including Industrial Processes, were later added. The specialty of Equipment and Plant Design was then upgraded, revamped, and given a new name: Computer Aided Process Plant Design. The Department offered three post-graduate programs that might lead to the M.Tech. (Chem.) degree, with specializations in industrial safety and hazards management, industrial pollution abatement, and computer assisted process plant design. In 2018, these three specialties were combined into a single M.tech program. Beginning in the 2003–04 academic year, an integrated five-year program in hydrocarbon engineering is available, leading to dual degrees in B.Tech. (Chem. Eng.) and M.Tech. (Hydrocarbon Engineering).

Programmes Offered	Students on-roll	Degrees Awarded
B. Tech	483	125
M. Tech	43	15
Ph. D	101	08

## R & D Activities

The department undertakes research in the broad fields of chemical engineering, including drug delivery, transport & separation processes, process safety, CO<sub>2</sub> capture & utilization, green catalysis, sustainable energy, energy storage, liquid & solid waste management, and biochemical and bioprocess engineering.

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	18	819.4	-	-
Ongoing	18	2348.73	-	-
Completed	04	151.03	12	43.4

## Major Facilities

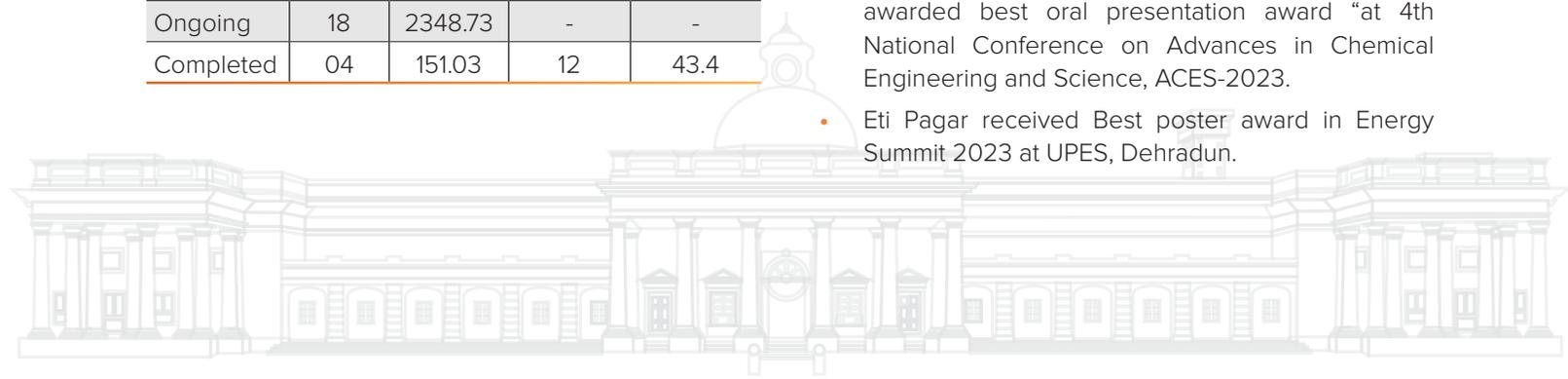
- **High-Performance Liquid Chromatography (HPLC)** – It consists of an autosampler along with two detectors, viz., diode array detector (DAD) and ultraviolet (UV) detector, for the analysis of organic liquid components in the test samples..



- Development of new continuous facility for the conversion of biomass to Hydrogen along with the generation of nanometals loaded onto the carbon matrix. Secondly, nano carbon-rich micronutrient for the plant growth is under process.

## Student Achievement

- Choubey A., Yadav A., received Best oral paper award in Indian Institute of Chemical Engineers-CHEMCON, HIT, Kolkata.
- D. Patel, P. Rani, A. Dharmesh and A K Sharma Emerged as Top-8 finalists in the TATASTEEL MaterialNXT4.0, 2023, a flagship open innovation program organized by Tata Steel Advanced Materials Research Centre, with the idea of "Aqueous Zn-S battery"; Cash Prize of 25000 INR.
- Subham Khange received best paper award in CHEMCON Conference, Kolkata.
- Krunalsinh Y. Chauhan and Akanksha Singh Rajput awarded best oral presentation award "at 4th National Conference on Advances in Chemical Engineering and Science, ACES-2023.
- Eti Pagar received Best poster award in Energy Summit 2023 at UPES, Dehradun.



- Yavnika Garg, received Women Innovator Award.
- Ayush Dave, received 3rd Prize in NGIC-HPLC under Open Category for Circular Economy -2023.

## Other highlights

Mrs. Rashmi Verma received the Distinguished Alumnus Award- Entrepreneurial Excellence for the year 2022 on the occasion of IITR Foundation Day on 25th Nov, 2023. She is the Co-Founder and currently CTO of the company MapmyIndia. She is the Alumni of 1977 Batch B.E. Chemical Engineering.

## Notable activities in the Department

- MoU has been signed between IIT Roorkee and EIL on 15 February 2024
- Signing of MoU between IIT Roorkee and Sardar Swaran Singh National Institute of Bioenergy (An autonomous Institution of Ministry for New and Renewable Energy, GoI).
- Inauguration of new laboratory entitled “Sustainable Catalysis and Energy Lab”.



Several webinars/symposiums/workshops/conferences were organized, few of them are highlighted below

- **Water Treatment Technologies for Water Challenged Sites in India: Opportunities for Research Based Solutions:** Objective of this workshop was to provide information on the latest scenario on the water challenges in India and state of the art technological methods and practices for treating contaminated water including some indigenous technologies developed in recent years in the country for drinking water production as well as to highlight opportunities for research based solutions.

- **International Chemical Engineering Conference on Energy, Environment and Sustainability**

The theme of the conference includes all major domains of Chemical Engineering, such as Circular Economy, Sustainable and Renewable Energy, Green Processes, and Transfer Processes, and Computational Modeling. The conference intends to provide a platform for the exchange of ideas among people working at different levels in academia and industries. Faculty members, scientists, persons from industries and other government agencies, research scholars, students, etc., can participate in the conference. ICECEES will therefore provide a forum for all the eminent participants to showcase their research and address the emerging future challenges pertaining to the theme of the conference.



## Department of Chemistry

The Department of Chemistry was established in 1960. Since then, it has provided 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 that have gained worldwide attention and appreciation.

<b>Total no. of faculty</b>	<b>30</b>
No. of Post Doc. Fellows	04
No. of PMRF	07

Two new faculty, Prof. Rakesh Kumar Saunthwal, and Prof. Bharat Tandon, joined the Department of Chemistry as Assistant Professors.

## Academic Programmes

The department offers four programs: 2-year M.Sc. (admission through JAM); 5-year integrated M.Sc. (admission through JEE); 5-year BS-MS (admission through JEE) with a 4-year BS exit option; and Ph.D. degree. Both the 2-year M.Sc. program and the integrated M.Sc. program involve a research project for one full year as partial fulfillment for the degree award. In the case of the 4-year exit option of the BS-MS program, the research project is for one semester.

<b>Programmes Offered</b>	<b>Students on-roll</b>	<b>Degrees Awarded</b>
BS-MS	81	-
M.Sc.	88	43
Integrated M.Sc.	29	12
Ph. D	176	07

## R & D Activities

The department currently has faculty with expertise in frontier areas of research. Active research in the areas of synthetic organic chemistry and catalysis, domino reactions, asymmetric synthesis, asymmetric catalysis, transition metal-based catalysis, energy relevant catalysis, visible light photoredox catalysis, electrochemistry, organic functional materials, polymeric membranes, nano-bio interfacial chemistry, magnetic and optical nanomaterials, coordination chemistry, energy storage, environmental remediation, antimicrobial materials, porphyrin chemistry, supramolecular self-assembly, organic electronics, radiopharmaceuticals, anticancer drug design, bioinorganic and bioorganic chemistry, magnetic materials, porous materials, bioinorganic chemistry, high energy density materials, ultrafast spectroscopy, nonlinear spectroscopy, quantum dots as sensors, plasmonics, energy harvesting, coacervates, active matter, statistical mechanics of polymers, computational catalysis, modeling and simulations, computational materials science for energy storage, and molecular dynamics simulations are being pursued.

<b>Project Status</b>	<b>Sponsored</b>	<b>Amount Rs. in lacs</b>
<b>New</b>	08	321.4
<b>Ongoing</b>	20	646.72
<b>Completed</b>	13	573.09

## Major Facilities

- **High-resolution Mass Spectrometry (HRMS)**- A state-of-the-art HRMS Laboratory was established in September 2023. HRMS is an ideal technique for identifying and determining the elemental and isotopic contents of a sample with high levels of precision. The facility has functioned extensively in the past year. This facility has also served other departments in the institute such as Chemical Engineering and Biosciences and Bioengineering. It has also recorded the data of external samples from other universities and research institutions.



## Student Achievement

- Mr. Anupam Das received the Prof. V. K. Gupta Memorial Impactful Young Researcher Award.
- Shweta Chaudhary, Happy Sharma, and Yamini Pokhriyal have been awarded PMRF.

## Other highlights

- Dr. Govardhana Babu Bodedla, who graduated from Prof. K. R. Justin Thomas Laboratory, joined as a Research Assistant Professor at the Department of Applied Biology and Chemical Technology, The Hong Kong Polytechnic University, Hong Kong.
- Dr. Rajendra Kumar Kondiena, who graduated from Prof. K. R. Justin Thomas Laboratory, joined as a Research Assistant Professor at the Department of Chemistry, SRM Institute of Science and Technology, Kattankulathur, Chennai.

- Dr. Karthik D, who graduated from Prof. K. R. Justin Thomas Laboratory, joined as a Research Assistant Professor at the Department of Chemistry, SRM Institute of Science and Technology, Kattankulathur, Chennai.
- Dr. Abhishek Baheti, who graduated from Prof. K. R. Justin Thomas Laboratory, joined as an Assistant Professor at the Department of Chemistry, Banasthali Vidyapith, Jaipur, Rajasthan.

## Notable activities in the Department-

- Prof. Yadagiri Dongari has installed a Glovebox facility in his laboratory funded by SERB-CRG. The facility will help advance the research on moisture and air-sensitive compounds.



- Prof. Vladimir Gevorgyan from University of Texas at Dallas and UT Southwestern Medical Center, USA visited the department to deliver an invited lecture on March 15, 2024.
- Prof. Kanishka Biswas from Jawaharlal Nehru Center for Advanced Scientific Research (JNCASR) delivered a Khosla National Award (Sciences) lecture on 21st November, 2023.
- Dr. Nicolas Martin of Centre de Recherche Paul Pascal (CNRS, Bordeaux, France) delivered a guest lecture titled “Minimal models of synthetic cells” on 28th August, 2023.
- An MOU was signed between IIT Roorkee and University of Bordeaux on 25th January, 2024 to promote student mobility and joint study/research programmes.

Several webinars/symposiums/workshops/conferences were organized, few of them are highlighted below

### ICOBIN 2023

The Department organized an International Conference on Optoelectronics and Bioinspired Materials (ICOBIN-2023) from 4th to 6th December 2023, where renowned scientists and students from all over the world participated to discuss emerging trends and advancement in the research and development of nanomaterials and nanotechnology. Apart from the usual talk and poster sessions, a distinguishing feature of ICOBIN 2023 was the open house Editorial Session, where eminent editors from world reputed publishing houses like ACS, RSC, Wiley and Elsevier, gave insightful suggestions regarding the manuscript preparation and publishing process. Special issue highlighting the conference theme would be published as collection in by Wiley in Small, Chemistry-A European Journal, Chemistry-An Asian Journal.



### Indian Academy of Sciences Meeting 2023

The Department organized an “Indian Academy of Sciences Meeting and a Lecture Workshop” in association with Indian Academy of Sciences, Bengaluru as an outreach activity of the Journal of Chemical Sciences – published by the Indian Academy of Sciences and jointly with Springer-Nature during 16th to 18th November, 2023. The workshop featured notable speakers each giving their knowledge to spotlight the current developments and developing trends within the field of chemical research. There was also poster session for students. More than 230 participants have participated from the nearby colleges and universities along with the students of IIT Roorkee.



## 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.

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Total no. of faculty	62
No. of Post Doc. Fellows	02
No. of PMRF	22

**Dr. Abhishek:-** He has joined as Assistant Professor in Hydraulic Engineering Group. He has carried out his doctoral research from Tokyo Institute of Technology (Tokyo Tech) in 2022. 2019 and Bachelor's degree in 2017 from the Indian Institute of Technology Roorkee. Thereafter, he pursued his post-doctoral research at the Indian Institute of Science (IISc) Bangalore in 2023. His areas of interest are Global and regional hydrological cycle, Groundwater and sustainability, GRACE terrestrial water storage, Remote sensing and machine learning methods, Identification of hydro-climatic extremes, and Precipitation extremes, uncertainty quantification, adaptation, and mitigation.

**Dr. Tarun Gangwar:-** He has joined as Assistant Professor in Structural Engineering Group, Civil Engineering Department. He has carried out his Ph.D. and Masters in Civil Engineering from the University of

Minnesota. He is B.Tech. alumnus of Civil Engineering Department, IIT Roorkee. His research interests are computational mechanics, finite element analysis, and multiscale material modeling, focusing on applications in structural engineering, additive manufacturing, and biomechanics.

**Dr. Prakhar Misra:-** He has joined as Assistant Professor in Structural Engineering Group, Civil Engineering Department. He is graduated from IIT Kanpur with a Bachelors and Masters (Dual degree) in Civil Engineering. He completed his PhD from the Institute of Industrial Science at The University of Tokyo. He continued at The University of Tokyo as post-doc researcher at Research Institute for Humanity and Nature, Kyoto. His research focus is geomatics engineering for studying human-environment interactions in urban and rural areas.

**Dr. Hemant Kumar:-** He has joined as Assistant Professor in Hydraulic Engineering Group. He has carried out his doctoral research from North Carolina State University, Raleigh, USA in 2023. He earned his Master's degree in 2017 from Indian Institute of Science (IISc) Bengaluru and Bachelor's degree in 2015 from the Indian Institute of Technology Roorkee. His areas of interest are Food-Energy-Water nexus, Sustainable Water Resources Management, Hydro economical modelling, Hydrological modelling, Flow alteration and river regulation due to dams, Meteorological and hydrological droughts, Statistical analysis, Machine learning in hydrological modelling, Wavelet analysis and Crop yield modelling.

### 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).

Programme	Students On-roll	Degree Awarded
B.Tech	114	157
M.Tech	58	66
Ph.D.	30	11

Details of new courses offered or started in 2023-2024

Sr.	Course / Degree	Details
1	CEC-101	Computer Programming in C++
2	CEN-204: Engineering Hydrology,	Spring semester, 2024, BTech, 2nd year
3	CEN-534: Modeling, Simulation, and Optimization	Autumn semester, 2023, BTech and MTech students and research scholars

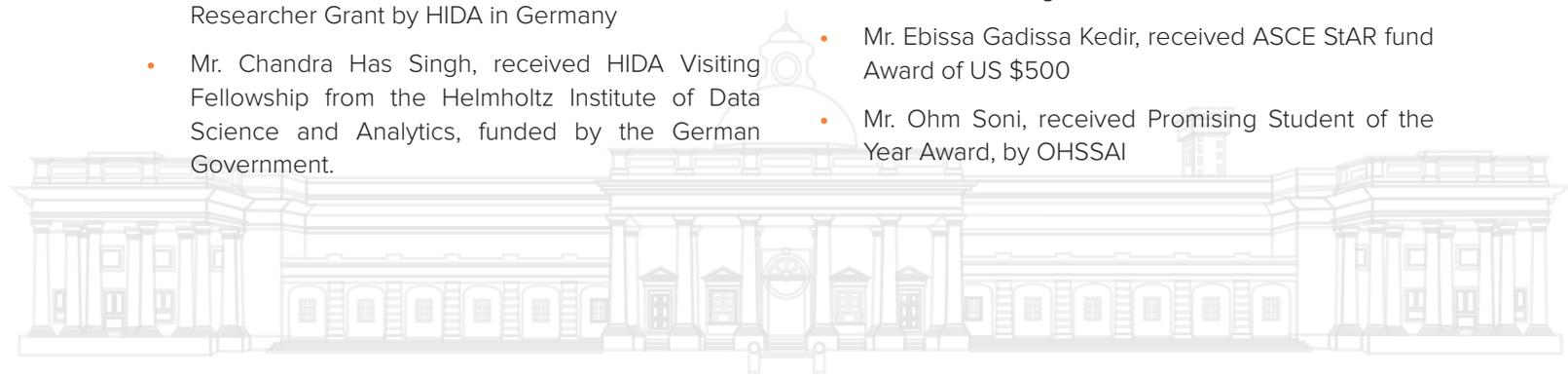
## R&D Activities:

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	33	2078.80	496	5244.20
Ongoing	65	3761.73	307	1600.85
Completed	19	599.01	13	95.26

## Student Achievement

- Ms. Vipasha Sharma, received travel grant of 1500 USD by ISPRS Foundation.
- Mr. Anurag Tomar, received Best Poster Award at the International Conference on Solid Waste Hong Kong.
- Mr. Sahil Kundal, received Travel Grant of 1000 USD by SPIE, the International Society for Optics and Photonics.
- Mr. Vishal Mishra, received Helmholtz Visiting Researcher Grant by HIDA in Germany
- Mr. Chandra Has Singh, received HIDA Visiting Fellowship from the Helmholtz Institute of Data Science and Analytics, funded by the German Government.
- Ms. Ruma Adhikari, received Travel Grant of 2000 USD by IEEE Geoscience and Remote Sensing Society.
- Mr. Anuj Nautiyal, received First prize in the poster presentation under the “ Urban Transportation and Planning” in the “Young Research Conclave at CSIR-CRRI New Delhi.
- Ms. Dolonchapa Prabhakar, received Deloitte Work-Studentship Program.
- Mr. Vishal Sharma, received Travel grant from SPIE.
- Mr. M. Sathyaseelan, received Travel grant of US \$1920.00 from IEEE
- Ms. Noopur Srivastava, received Best Student Paper Award in SPIE Sensors+Imaging 2023 conference on the topic “Dual attention based Deep Learning Approach for Building Segmentation of Remote Sensing Images” held in Amsterdam, Netherlands
- Mr. Akshay Gupta, Mr. Shreyansh, and Mr. Priyanshu Pansari, Developed a real time lane departure warning system specific for Indian drivers and Indian driving conditions and secured 2nd place with a cash prize of 5 lakh rupees at Road Safety Hackathon
- Mr. Prabhakar Kumar, secured second Honorable Mention Award at the 1st SLRMES International Conference on Rock Mechanics for Infrastructure and Geo-Resources Development an International Society of Rock Mechanics Specialized Conference, Colombo, Sri Lanka.
- Mr. Chintada Chandrasekhar and Mr. Prakul Dixit, received “Best Poster Award” in the category of “Pavement Engineering” during the 7th Conference of Transportation Research Group of India (CTRG-2023), Surat, India.
- Ms. Manaswinee Kar, received TRG’s Outstanding Student Paper Award in Transportation Planning
- Mr. Pawan Singh and Mr. Sarvesh Kumar Verma, received Travel grant from IUGG.
- Mr. Ebissa Gadissa Kedir, received ASCE StAR fund Award of US \$500
- Mr. Ohm Soni, received Promising Student of the Year Award, by OHSSAI



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

- 43rd Training Course on “New Technologies Including FDR” under Pradhan Mantri Gram Sadak Yojana
- Capacity Building of Officers of Water Resources Department Punjab for Designing Lift Irrigation Scheme
- 3-Day Workshop on Design and Evaluation of Flexible Pavements - Principles and Practices
- 3rd International Conference on Unmanned Aerial System in Geomatics UAV: A Game changer in Geomatics
- Indian Geotechnical Conference 2023
- International Conference on Geospatial and Civil Engineering (ICGCE 2024)
- Prof. Bhawani Singh Memorial Lecture
- Geomatics Survey Camp



## Department of Computer Science and Engineering

The department of Computer Science and engineering at the Indian Institute of Technology Roorkee promotes innovation-centric education and performs cutting edge research. The department continuously endeavors to create and sustain an academic environment conducive to creating and sustaining 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. The department also facilitates the development of academia-industry collaborations and societal outreach activities.

Total no. of faculty	18
No. of Post Doc. Fellows	2
No. of PMRF	5

- **Prof. Chetan Gupta** recently joined the department. His research areas are Algorithms and Complexity Theory.

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
M. Tech	28	34
Ph. D	15	03

## R & D Activities:-

The Department has strong research groups in the broad areas of:

- 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
- Theory and Software Engineering

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	5	225.82	3	113.57
Ongoing	14	1301.53	4	85
Completed		617.38		52

## Major Facilities

- 3D Printer: Raise3d E2 Printer
- Workstation: AMD Ryzen 9, 128GB RAM, 24GB Graphics.
- 30 kVA UPS
- Mobile Security Lab

## Student Achievement

- Ms. Keerthana Nuti, Mr. Shashank Aital, and Mr. Shreyas Dodamani received Best B.Tech. Project (BTP) Jury Choice Award, 2023, Professional & Innovation Category, 2023
- Mr. Suvra Pattanayak received Best Poster Award, 2023, Institute Research Day, IIT Roorkee (
- Mr. Anshul Pundhir, Mr. Deepak Kumar, Mr. Nitin Tyagi and Ms. Srishti Yadav selected for Deloitte work-studentship program,.
- Mr. Yash Singhal, received Qualcomm Innovation Fellowship.

Several webinars/ symposiums/ workshops/ conferences were organized including, International Conference on Electrical, Electronics, Communication and Computers (ELEXCOM'23), 16th ACM Innovation in Software Engineering Conference and One Day campus immersion program for a PG certificate course under EICT academy

## 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.

The basic objectives of establishing a DoD at IIT Roorkee are:

- To create a culture of innovation and creative problem-solving.
- To impart design-based education and to create an ambiance of systematic design practice.
- To facilitate interdisciplinary design-focused education, research, and entrepreneurial activities with a focus to create commercial opportunities.
- To develop Documentation and Archival Repository of Design Innovation practices at the grass-root level.
- To build an environment of handshaking between academia and the industry to address the relevant societal issues through co-creation and their transformation into products.

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
M. Des. (Industrial Design)	34	17
MIM	6	3
Ph. D	30	0

## 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 of Coffee Harvesting Machine, DSS for early identification of deafness in neonates, firefighting tool kit and many more.

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	1	4,99,200	-	-
Ongoing	2	35,73,800	1	9,44,000
Completed	1	4,99,000	-	-

## Student Achievement

- Ms. Saloni Sethi, Ms. Sheetal Narkhede and Mr. Atharva Duraphe received Merit award and medal for 'Design Contribution' in D'Source Design Challenge Interaction Design organized by IDC School of Design, IIT Bombay.
- Mr. Divyang Purkayastha received 1st Prize winner of 'AI Art Challenge' of National Urban Conclave 2023 organized by NIUA and MoHUA.

## Other highlights

- Gold winner (Ms. Asawa Aishwarya Santosh, MIM 2nd Yr.) in Zuno Fellowship Program organized by Zuno by Foundit (AIR 14, Rewards: Rs. 6000 and Certificate).

Several webinars/symposiums/workshops/conferences were organized few of them are Design & Innovation Management in Resource Constraint Context, Workshop on Basics of Digital Design by Prof. Janina Schmidt and Carina Moser, Talk cum workshop on Design Thinking and Ideation Through Sashiko, Awareness Programme

on “MSME Innovative (Design) Scheme” Industry-Academia Interference and Guest Lecture on Creative Inquiry to Sustainable Impact in Design by Prof. Khanjan Mehta.



## 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	05

### Academic Programmes

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
B. Tech	NIL	NIL
M. Tech	30	29
Ph. D	13	04

### R & D ACTIVITIES

Project Status	Sponsored	Amount Rs. In lacs)	Consultancy	Amount Rs. In lacs
New	04	493.99	02	88.99
Ongoing	02	21.395	02	
Completed			01	

### Major facilities

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

### Notable activities in the department

- Video Recorded **NPTEL Certification Course** on “Geotechnical Earthquake Engineering”, recording is done April-May 2023. Course offered in Autumn 2023.
- Offered Video Recorded **NPTEL Certification Course** on “Earthquake Resistant Design of Foundations”, in Spring of 2023-2

## Department of Earth Science

The geological studies in the university date back to the middle of the nineteenth century when Colonel Sir Proby Cautley (who was responsible for establishing the Thomason Engineering College) was elected as a Fellow of the Royal Society, London, for his pioneering work on the vertebrate fossils of the Shivalik Ranges. Later

Henry Benedict Medlicot, who was also admitted as the Fellow of the Royal Society in 1877, occupied the Chair in Geology and Experimental Sciences at Thomason College. The Department of Earth Sciences, formerly the Department of Geology and Geophysics, was established in 1960. During the span of six decades, the department has become one of the foremost centres of research, post graduate training and consultancy in the field of Earth Sciences. The department has been the recipient of financial aid under the prestigious Special Assistance and COSIST programmes of UGC (Ministry of Human Resources and development, Govt. of India).

Total no. of faculty	27
No. of Post Doc. Fellows	01
No. of PMRF	08

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
Integrated M.Tech	302	49
M. SC	35	20
Ph. D	112	1

## R & D Activities

The Department has specialization in research areas such as: Application of Geophysical Signal Processing for Earth System, Biostratigraphy, Organic Evolution and Paleoclimate, Crustal Deformation Studies and Transient Behaviour Analysis using GPS Data, Electromagnetic and Magneto telluric Methods, Engineering Geology, Forward and Inverse Modeling of Resistivity data for Ground Water, prospecting, Forward and Inverse Modeling of Seismological Data, Gravity and Magnetics Prospecting, High pressure & high temperature lab investigation, Himalayan Tectonics and Orogeny, Integrated reservoir characterization, Metamorphic and Precambrian Tectonics, Oceanography and Paleooceanography, Ore Deposit Geology, Remote Sensing and GIS, Rock Physics & Petrophysics, Sedimentology and Basin Analysis, Seismic Hazard Assessment, Seismic Signal Processing for Hydrocarbon Exploration, Seismic Travel Time and Attenuation Tomography, Strong Motion Seismology, Structural and

Deformation Geology, Subsurface Investigations using Ambient Noise Studies.

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	02	121.67	-	-
Ongoing	20	697.95	10	180.39
Completed	14	420.45	11	110.42

## Major Facilities

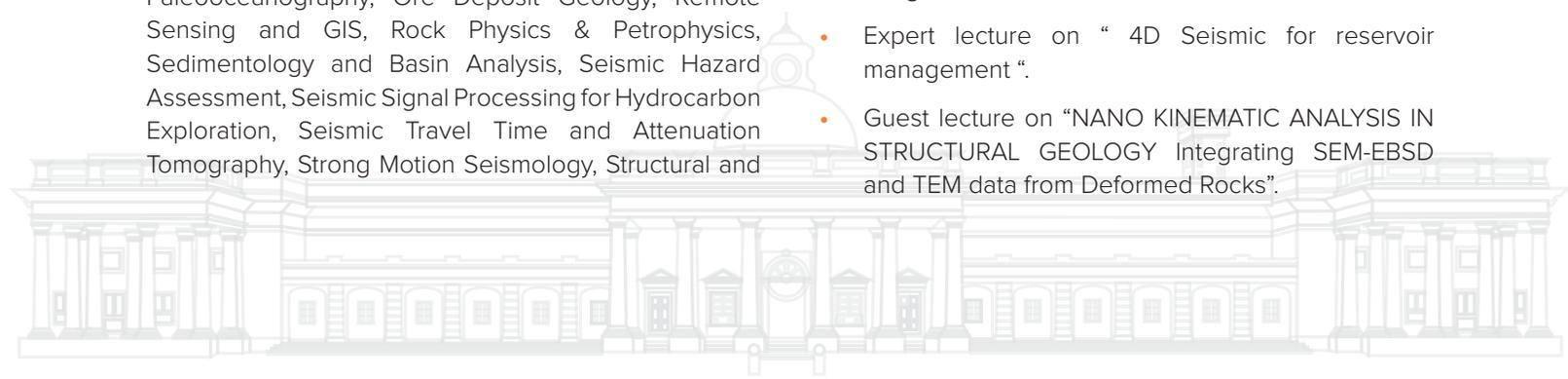
- GROUND PENETRATING RADAR:
- Nikon Polarizing Microscope model LV100N Pol
- Spinner Kappabridge System in room M-106 (B),
- SEM Laboratory.

## Student Achievement

- Mr. Praveen Kumar has received First Prize in Student Presentation in PRAVAH 2024, organized by the Department of Hydrology. Also secured III Position in the Student Quiz Competition,
- Mr. Praveen Kumar has organized by the Indian Institute of Technology Roorkee, held on 12th April 2024.
- Mr. Akshay Vijay Kamath has received Best dissertation in IMT GPT award.
- Mr. Aman Kushwaha has received prestigious Swiss Government Excellence Scholarship.
- Ms. Simran Guleriya has received ONGC Videsh Ltd. award for getting highest CGPA in MSc.
- Mr. Bibhukalyan Acharya has been awarded Travel grant of 1200 Euros for the 2024 International Summer School to be held in Bonaire, Southern Caribbean by the International Association of Sedimentologist.

Several webinars/symposiums/workshops/conferences were organized few of them are mentioned below:

- Expert lecture on “ 4D Seismic for reservoir management “.
- Guest lecture on “NANO KINEMATIC ANALYSIS IN STRUCTURAL GEOLOGY Integrating SEM-EBSD and TEM data from Deformed Rocks”.



- Technical talk on “Heterogeneity analysis of geophysical well-log data using Hilbert Huang transform”.
- Distinguished lecture on “Unique application of near-surface Geophysics”.
- Invited lecture on “Water on the Moon & lunar exploration in the 21st century”.
- Technical talk on “ Exploiting Machine Learning for Seismic Monitoring and Forecasting”.



## Department of Electrical Engineering

The Department of Electrical Engineering of the Thomson College was one of the earliest such specializations in the world when the discipline itself was in its infancy. The first batch of Electrical Engineering students graduated in 1900 from the Thomason College of Engineering. In 1923, a special committee recommended that the College may be converted into a purely Civil Engineering Institution, but later another special committee favored the reopening of the disciplines of Mechanical and Electrical Engineering. The present Department of Electrical Engineering came into existence in 1946 and the first batch of Electrical Engineering graduates passed out of this college in 1949. The Department offered courses with options in both Electrical and Electronics & Telecommunications Engineering until 1964 when department of Electronics & Communication Engineering was created. The department then started to expand to include more specializations of Electrical Engineering. Presently the Department conducts courses both at undergraduate and postgraduate levels and provides excellent facilities to carry out research work for Ph. D. degree and sponsored/ consultancy projects.

Total no. of faculty	37
No. of Post Doc. Fellows	03
No. of PMRF	10

**Prof. Ramanuja Panigrahi:** Dr. Ramanuja Panigrahi joined IIT Roorkee as an assistant professor he was a Visiting Research Scholar with the Center for Power Electronics Systems (CPES), Virginia Tech., Blacksburg, VA, USA. His current research interests are the synthesis, design, and control of dc-dc converters, power electronics in EV charging Infrastructure, biomedical power supplies, and design of energy harvesting circuitry. He has received the IEEE Transactions on Power Electronics Prize Letter Award in 2020 and IITK's outstanding Ph.D. Thesis award in 2022.

## Academic Programmes

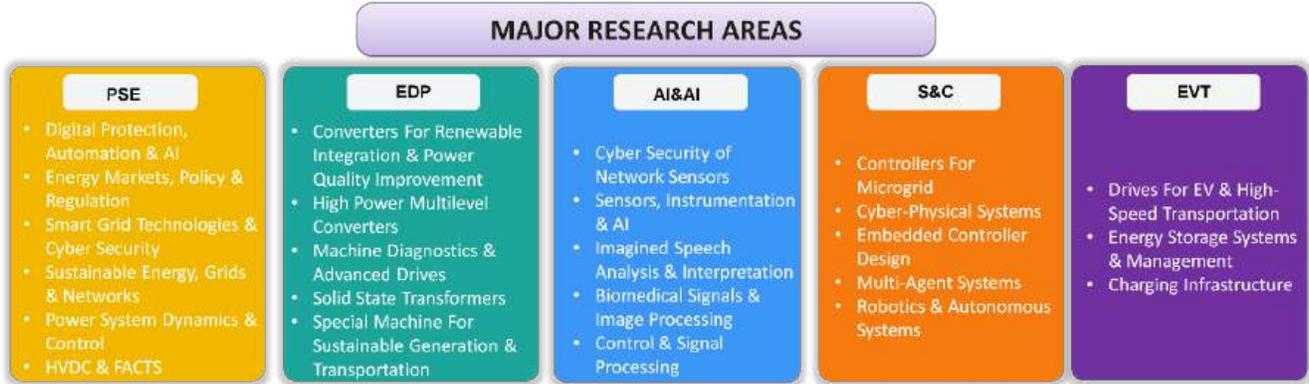
The department offers a four-year undergraduate programme (B.Tech.) in Electrical Engineering and runs five postgraduate (M.Tech.) programmes in Electrical Drives & Power Electronics, Power System Engineering, Systems & Control, Instrumentation & Signal processing and Electric Vehicle Technology. In 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).

Programmes Offered	Students on-roll	Degrees Awarded
B. Tech	696	145
M. Tech	130	34
Ph. D	194	05

## R & D Activities

PSE: Power System Engineering, EDP: Electric Drives and Power Electronics, AI&AI: Advanced, instrumentation and Artificial Intelligence, S&C: Systems and Control, EVT: Electric Vehicle Technology

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	13	530.52	-	-
Ongoing	19	918.86	12	74.81
Completed	14	1445.49	04	12.23



## Student Achievement

- Mr. Anil Kumar Badavath, Mr. Vivek Kumar, and Md. Masood Raza have received best paper award at IEEE RASSE 2023 conference.
- Mrs. Tripti Gangwar and Mrs. Bhabani Choudhury have received the Industry Research & Development Fellowship from the Department of Science & Technology (DST) and India Energy Storage Alliance (IESA).
- Mr. Mir Uzair Kanth, Ms. Shubhangi Mishra, Mr. Sanket Subhash Tambe, Mr. Anil Kumar Tiwari and Mr. Ankush Sharma has received the prestigious Prime Minister's Research Fellowship (PMRF) award.
- Ms. Pooja Chauhan has received the Global Distinguished Young Scientists Award at the 2023 IEEE IAS Global Conference organized by Maldives National University, Male City, Maldives.

## Notable activities in the Department

- Training Program for the faculties of Polytechnic Institute of Uttarakhand.
- Skill enhancing training workshop for the employees of the department.
- A 5-day Short-Term Training Program (STTP) on "Coordinated Control and Protection of Distributed Networks with High Integration of Renewable Sources".

Several webinars/symposiums/workshops/conferences were organized few of them are mentioned below:

- Technical talk on "Business Use Cases of AI/ML".
- Expert lecture on "Insights, challenges, and opportunities in the Indian EV market today".
- Expert lecture on "Learning at TIFR, and Sequential Learning".
- Technical talk on "Electric Vehicle Utilization for Vehicle to Grids".
- Distinguished lecture on "New Ways to Fly".
- Expert lecture on Decarbonization of Power Industry with Energy Future of India.
- Technical talk on "Distributed Decision Making: Optimality and Information Mixing Under Network and Operational Constraints".
- Expert talk on "Fusion of Hard and Soft (AI) Control Strategies for a Smart Prosthetic/ Robotic Hand".



## Department of Electronics and Communication Engineering

In view of the increasing importance of the Electronics Engineering discipline, a separate Department of Electronics & Communication Engineering was established in 1964 to offer Bachelor of engineering degree in Electronics & Communication and Master of Engineering degrees in (a) Advanced Electronics and (b) Applied Electronics & Servomechanisms. In 1968, the postgraduate programme was restructured with specializations in the areas of Communication Systems, Control and guidance, Microwaves and Radar, and Solid State Electronics. Two new undergraduate and postgraduate programmes in Computer Science and Technology were started in the year 1982. Keeping in view the activities of the Department, the name was changed to Department of Electronics and Computer Engineering. The Department has always been on a high growth path and to keep pace with the current technological trends, the Department has introduced two dual degree programmes leading to B. Tech in Computer Science and Engineering and M. Tech in Information Technology and B. Tech in Electronics & Communication and M. Tech in Wireless Communication. In January 2013, a separate Department of Computer Science and Engineering was carved out and the department was again renamed as Electronics and Communication Engineering. The Department has strong research groups in the broad areas of:

- Communication, Network & Signal Processing
- RF and Microwaves
- Microelectronics and VLSI
- THz Communication & Sensing
- Joint M. Tech in Semiconductor Technology with Taiwan Universities

<b>Total no. of faculty</b>	<b>40</b>
<b>No. of Post Doc. Fellows</b>	<b>2</b>
<b>No. of PMRF</b>	<b>13</b>

**Dr. Sandeep Kumar Singh** has recently joined as an Assistant Professor in ECE Dept. He was a postdoctoral fellow in the Department of Electrical and Computer

Engineering at the University of California, Davis, USA, from 2021 to 2023. Ph.D. with the highest grade “summa cum laude” in Computer and Network Engineering from the Technical University of Braunschweig, Germany, in 2019.

**Dr. Priyansha Kaurav** has recently joined as an Assistant Professor in ECE Dept. She has received her Master’s and PhD degrees from the Centre for Applied Research in Electronics, Indian Institute of Technology (IIT) Delhi.

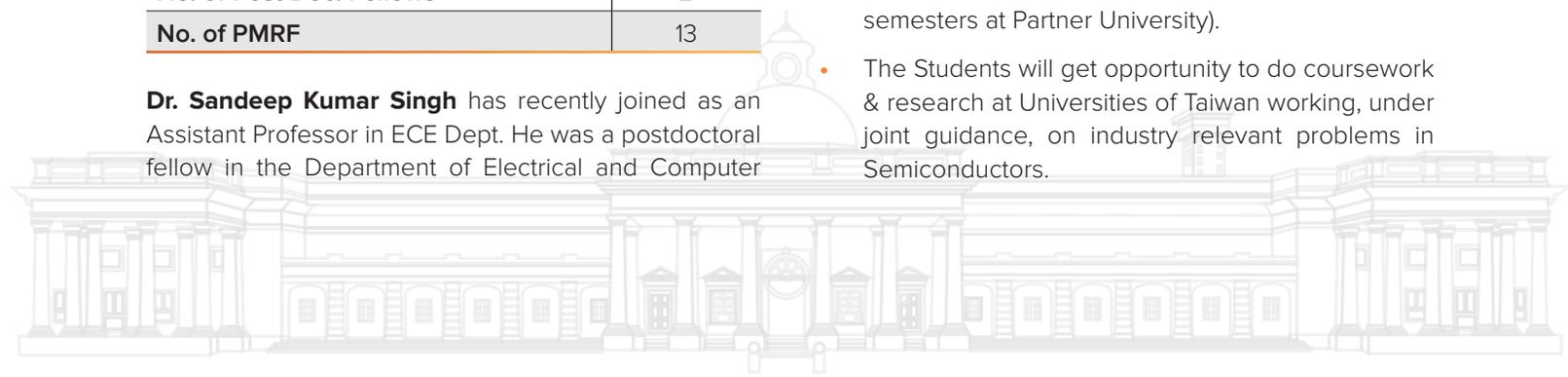
**Dr. Ashish Chowdhary** has recently joined as an Assist. Professor in the ECE Dept. He was a post-doc fellow at NTU Singapore. He worked in the telecom industry with Ericsson India Global Services in India and Africa. He is a recipient of the prestigious ‘best thesis award medal’ at IIT Guwahati.

### 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.

Joint M. Tech in Semiconductor Technology with Taiwan Universities: Highlights of the program

- This Program is jointly offered by the Department of Electronics and Communication Engineering and the Department of Physics at IIT Roorkee and select partner Universities of Taiwan.
- Admission through M.Tech admission programme IIT Roorkee based on GATE rank.
- Ten graduate fellowships of amount Rs 12,000/- PM (on top of GATE fellowships) to selected candidates by Divya Sampark Technology Innovation Hub IIT Roorkee.
- The students enrolled in the Joint Master’s Program will spend 2 semesters in each University (First and Last semesters at IIT Roorkee, Second and Third semesters at Partner University).
- The Students will get opportunity to do coursework & research at Universities of Taiwan working, under joint guidance, on industry relevant problems in Semiconductors.



- The graduating students will have high scope of jobs and research opportunities in area of Semiconductors Fabrication, VLSI, IC Design and Testing both in India and Taiwan.
- We have signed the JMDP agreements with the National Tsing Hua University (NTHU) (QS World #177), and National Yang Ming Chiao Tung University (NYCU) (QS World #202). The agreement with the third university National Taiwan Normal University (NTNU) (QS World # 332 ), is in the final stage and the draft is under consideration.

Programmes Offered	Students on-roll	Degrees Awarded
B. Tech	469	91
M. Tech	74	34
Ph. D	216	7

## R & D Activities: -

### THz Communication & Sensing-

The students can learn fundamental concepts and technique related to:

- Electromagnetics, radio wave propagation and RF system design and antenna design
- Terahertz Sensing, focusses on theoretical formulation of advanced multi-sensor systems and its applications for short distances (e.g. medical imaging, security scanning, etc)
- Physical Layer Signal Processing Techniques for communication and sensing, including modulation, coding, estimation and detection principles
- Network Design and Management, focusses on fundamental concepts of network science, design and architecture, management, protocols and algorithms for fixed and wireless networks

Project Status	Sponsored
New	09
Ongoing	21
Completed	14

## Major Facilities

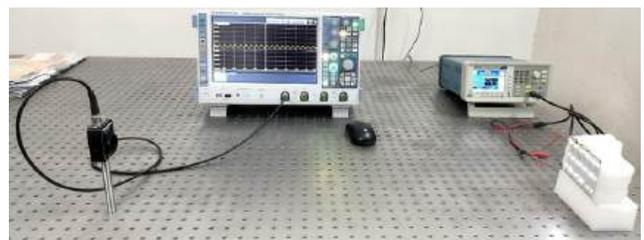
- Sub-THz Communication Test Bench



- Multi-target DC/RF sputtering system added to Microelectronics Laboratory



- Elementary experimental setup of Visible Light Communication System



### Instrument/Equipment Designed & Developed:

- Tunable X-band RF Source for Microwave Laboratory
- Automated translational stages for sub-THz communication test bench setup in THz lab.
- Measurement setup for magnetic field tolerance of magnetic random access memory devices under arbitrary field perturbations, in Solid State Electronics Laboratory
- Driver Drowsiness Detection Simulator and Testbench

## Student Achievement

- Priyanka Bajaj received Best Student Paper Award” during the “Wireless, Antenna and Microwave Symposium (WAMS) 2023”, held in Gandhinagar, Gujarat.
- Ankita Chauhan, has been selected for the SERB - UAlberta Fellowship program (Fall 2023 semester) to conduct research at the University of Alberta, Canada.
- Abhishek Kumar, Srishti, Hari Shanker, Manoj Kumar, Jay Singh have been selected for the PMRF Fellowship.
- Chinmay Nagpal and his team emerged as National Winners in the E-Waste category of Trash to Treasure Hackathon.

## Department of Humanities and Social Sciences

The Department of Humanities and Social Sciences, IIT Roorkee (erstwhile University of Roorkee), was established in 1966 with a vision to integrate human values and social concerns with technical education. Over the years, it has developed into a lively department, encompassing teaching and research programs in 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. One of the notable achievements in recent years has been the expansion in research activities and exchanges of ideas, facilitated by the constant surge of discussions, consultations and publications

in esteemed and high impact journals. Besides, there has been a considerable progression of tangible and scholastic infrastructure, which, in the process, provides an impetus to its bright future. The department has total 31 faculty.

The following below mentioned faculty have joined in respective disciplines

(a)	Prof. Sonal Jha	- English
(b)	Prof. Hari Venkatesh	- Economics
(c)	Prof. Vijay Victor	- Economics
(d)	Prof. Pavan K. Satuluri	- Sanskrit

## Academic Programmes

The following below mentioned courses has been introduced

HSN 301- PUBLIC FINANCE

HSN 303- PRINCIPLE OF INTERNATIONAL ECONOMICS

HSN 305- ADVANCED TOPIC IN ECONOMETRIC THEORY

HSN 302- ADVANCE TOPIC IN INTERNATIONAL ECONOMICS

HSN 304- GROWTH ECONOMICS

HSN 306- INDIAN ECONOMICS

Programmes Offered	Students on-roll	Degrees Awarded
(B.Sc -M.Sc Eco.)	35	Nil
(M.S. Eco.)	20	Nil
Ph. D	242	22



## R & D Activities

Project Status	Sponsored	Amount (Rs.in lacs)
New	Prof. Lalatendu. K. Das	12.00 lacs
	Prof. Anindya J. Mishra	97,23,515 lacs
	Prof Aparajita Singh	15 lacs
	Prof. Diptimayee Nayak,	5.9 crore
	Prof. Nagendra Kumar,	21 lacs
	Prof. Pooja Garg	10 lacs
Ongoing	Prof. Roluahpuia	04 lacs
	Prof. Pooja Garg	11,644,515
Completed	Prof. Diptimayee Nayak,	Rs. 15 lacs.
	Prof. Shruti Sengupta,	Rs. 30 lacs
	Prof. Manish K. Asthana,	Rs. 03 lacs
	Prof. Pooja Garg	Rs. 20 lacs

## Student Achievement

- Ankit Maurya received Internship Research Fellowship by Centre for Information and Neural Networks (CiNet), Osaka, Japan.
- Ankit Maurya, received International Travel Grant for Young Scientists
- Anisha E. received the Best Paper Award at the International HR Conference Cum Conclave -2023 (IHRCC'23)- "held at the Indian Institute of Management (IIM)-Jammu.
- Param Mahabare received ENCORE Award.scored Overall Outstanding Performance.
- Hemant Bidasaria scored Third rank nationally in Datathon, in Urban Conclave organized by the National Institute of Urban Affairs
- Vanshika Gupta, won the best paper award at Odisha University of Agriculture and Technology, Bhubaneswar, Odisha.

Several webinars/symposiums/workshops/conferences were organized, a few of them are as follows:

"Revamping Indian Tradition and Culture through NEP 2020: Multilingual, Multicultural & Multidisciplinary Mode of Education "Progress under PMKVY achievements in Uttarakhand, "Clean cooking fuel energy at the doorstep: Analyzing the socioeconomic impact of PM

Ujjwala Yojana in Hill and Plain regions of Uttarakhand", Social Determinants of Lifestyle-Related Chronic and Non-Communicable Diseases Among Adult Women in India.

## Department of Hydrology

The Department of Hydrology is one of the 23 academic departments of the Indian Institute of Technology Roorkee. The Department came into existence with the inception of the International Post Graduate Course in Hydrology in 1972, being the first such program in a developing country. The courses offered by the Department are presently sponsored by the Government of India and UNESCO. The Department has nine dedicated full-time faculty members having specializations in surface water hydrology (Floods, Droughts), water resources systems, watershed management, Geo-hydrology, groundwater management, stochastic hydrology, hydro-informatics, environmental hydrology, atmospheric physics, climate change, etc.

Total no. of faculty	09
No. of Postdoctoral fellows	07
No. of PMRF	08

- **Prof. Nitin Khandelwal**, Dr. Nitin received his Bachelor's degree in Geology from University of Delhi, India, and Integrated MS- PhD in Earth Sciences from Indian Institute of Science Education and Research (IISER) Kolkata. His PhD research was focused on Geo-nanocomposites for Aqueous Sustainability. Broadly his expertise falls in the domain of aqueous geochemistry and nano-enabled environmental remediation specializing on contaminants speciation in complex water matrices, nanomaterials and composites fabrication and characterization, sorption, and continuous column filtration.

## Academic Programmes

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

- o Surface Water Hydrology,
- o Groundwater Hydrology,
- o Watershed Management.

Programmes Degrees Offered	Students on-roll	Degree Awarded
M.Tech	49	-
Ph.D	22	05

## R & D Activities:

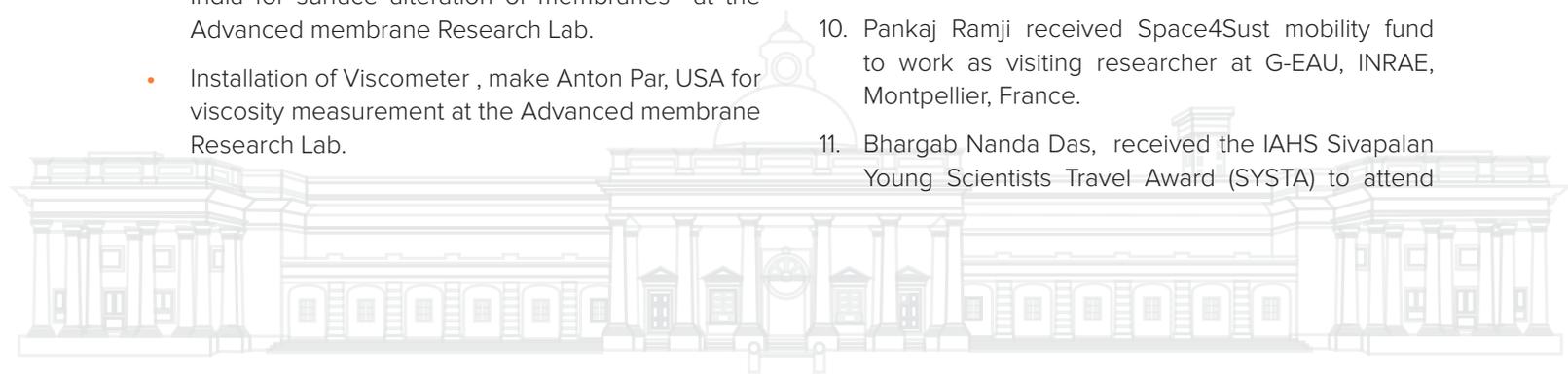
Project Status	Sponsored	Amount (Rs. In lacs)	Consultancy	Amount Rs. In Lacs
New	02	106 Lacs	04	103 Lacs
Ongoing	25	12,316.44 Lacs	13	425 Lacs
Completed	01	15	12	238.9 Lacs

## Major Facilities

- NetAPP Data Server** - Department recently implemented a cutting-edge NetApp data storage solution at the HydroClimX Lab, specifically the AFF C-Series. This sophisticated system offers secure, scalable, and sustainable flash storage, ideal for handling the large volumes of climate and hydrological data that our department works with. Not only does it provide a secure environment for storing this valuable data, but it also facilitates seamless sharing among researchers and educators. This technological advancement is poised to significantly enhance our research and teaching endeavors, marking a substantial leap forward for our department.
- Digital Learning Studio**-Department has created a new facility for tailored made training programs, hands-on-sessions and other various purposes.
- Installation of the Gamry Interface 1010E Potentiostat for measuring the conductivity and resistivity of membranes at the Advanced membrane Research Lab.
- Installation of Vacuum Plasma unit, make Eltech, India for surface alteration of membranes at the Advanced membrane Research Lab.
- Installation of Viscometer , make Anton Par, USA for viscosity measurement at the Advanced membrane Research Lab.

## Student Achievement

- Akriti Singh received the ISH Best M Tech Thesis award from Indian Society of Hydraulics.
- Ashish Mishra received Science and Engineering Research Board (SERB) International Travel Support to attend the AGU Fall Meeting 2023 in San Francisco, USA, also he received Volkswagen Foundation Grant to attend Summer School in Humbolt University in Berlin, Germany. He also received Co-prepare (UGC) Grant for attending IUGG in Germany.
- Denzil Daniel received CSIR Foreign Travel Grant to attend the AGU Fall Meeting 2023 in San Francisco, USA.
- Ravi Kumar Guntu has been awarded the SYSTA-Sivapalan Young Scientist Travel Award to attend the international workshop STAHY 2023, in Boston, USA. He also received an International Conference grant from the SDG Nexus Network funded by DAAD to attend the Water Security and Climate Change Conference. in Ecuador, South America.
- Mani Kanta Malla was awarded the Best Paper in the 28th Conference on Hydraulics, Water Resources, River and Coastal Engineering (HYDRO-2023) in National Institute of Technology Warangal.
- P Kedarnath Reddy and Nagashree G E has been selected for the prestigious Prime Minister's Research Fellowship under the Lateral Entry Scheme in Cycle 11.
- Pragya Badika has received full funding from Germany to attend the "Potsdam Summer School 2023" at the University of Potsdam, Germany.
- Akash Singh Raghuvanshi PhD candidate working under Prof. Ankit Agarwal, has been awarded the prestigious Prime Minister's Research Fellowship.
- Ajay Gupta Received the prestigious 'American Geophysical Union (AGU) 2023 David Miller Young Scientist Scholarship.
- Pankaj Ramji received Space4Sust mobility fund to work as visiting researcher at G-EAU, INRAE, Montpellier, France.
- Bhargab Nanda Das, received the IAHS Sivapalan Young Scientists Travel Award (SYSTA) to attend



IUGG 2023 Conference in Berlin, Germany.

12. Nikunj Mangukiya has been selected for the “Deloitte work-studentship program” for 6 months.
13. Shubham Ketan Sharma Received the International Travel Support (ITS), SERB, DST to attend, “The 13th International Congress on Membrane and Membrane Processes ICOM13, Makuhari Messe, Chiba, Japan”.
14. Bhargabnanda Dass has been conferred the 2023 IAHS SYSTA award.
15. Prabhat Dwivedi received the Best Paper Award at the Hydro-2023 International Conference held at NIT Warangal.
16. Nikunj Mangukiya, Sagar Gupta and Shivani Parashar, received travel grants to attend “The Fourth Indian Symposium on Machine Learning (IndoML)” at IIT Bombay.
17. Sushmita Gauraha awarded the Fulbright - Kalam Climate Fellowship to continue her doctoral work at Arizona State University, USA.

the Himalayas, “Low-Tech Water Treatment Technology for Producing Safe Water”, Glacier depletion and Arctic ice cover loss and potential linkages to the Himalayas”, AI4Water - Advanced Data- driven and Artificial Intelligence Tools in Water Resources”, “Himalayan Instrumentation Laboratory and Long-Term Hydrological Pathways Observatories”, “Emerging Hydroclimatic Extremes and Approaches”, “Navigating the Complexities of Climate Change in the Water Sector: Challenges, Opportunities, and the Road to a Sustainable Future”, “Membrane Technologies for Desalination, Energy and Water Sustainability: MemDEW”, “Natural Hazards Workshop for the Indian Himalayas 2023”, “Fluvial Disasters in The Himalayas – New Insights and Potential for Early Warning”, “Overview of Snow and Glacier Hydrology”, “Spatiotemporal dynamics of desiccation cracks and Root growth: Implications for improving soil moisture and infrastructure serviceability”, Ministry of Jal Shakti. Addressing vital topics like water management and the circular economy for a sustainable future”, “Statistical tools for Modelling Big data in Hydroclimatology (STAMBH)”

## Notable activities in the Department

### Inauguration of “Advanced Membrane Research Lab



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

Modelling fluid flow through porous media using MATLAB”, “Himalayan Freshwaters - Assessing the Services and Vulnerability of Freshwater Ecosystems in



## Department of Hydro and Renewable Energy

Department of Hydro and Renewable Energy (HRED) has been offering education through M.Tech. programmes in “Renewable & Hydro Energy Systems” and “Environmental Management of Rivers and Lakes” as well as through short-term national and international training courses in the above areas. Apart from the above, the department has a vibrant PhD program encompassing all areas of renewable energy, hydropower and environmental management of water bodies. At the UG level, not only does the department offer elective subjects on Renewable Energy, it also offers a minor program in Renewable Energy Technology to B.Tech. students of the Institute. 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	15
No. of Post Doc. Fellows	03
No. of PMRF	09

- **Prof CS Pant:** Dr. Chandra Shekhar Pant (C. S. Pant) holds a B.E. in Mechanical Engineering from Kumaon Engineering College Dwarahat (now BTKIT), India, an M.Tech. in Thermal and Fluid Engineering from IIT Guwahati, India and Ph.D. from IIT Bombay, India.
- **Prof Hemant J Sagar:** Dr. Sagar, studied bachelors in mechanical engineering from University of Pune, master’s and Ph.D. degree in Mechanical Engineering with specialization in cavitation bubble and their destructive effects on metals, from Germany.
- **Prof Prashant Surana:** Dr. Prashant Surana received the B.Tech. degree in electrical and electronics engineering from NIT, Trichy in 2012, M.Tech. degree in power electronics from IIT Delhi, and Ph.D. degree with the Department of Electronic Systems Engineering, IISc, Bengaluru in 2023.

## 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. The department has started a new B.Tech program in Energy Engineering from upcoming academic year 2024-25.

Programmes Offered	Students on-roll	Degrees Awarded
B. Tech	-	-
M. Tech	45	16
Ph. D	66	04

## R & D Activities

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	8	520.53	39	287.19
Ongoing	18	3827.57	105	1729.21
Completed	6	554.35	30	227.81

## 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, Hydrogen Lab.

## Student Achievement

- Mr Naman Arora won best paper award in 28th International Conference on Hydraulics, Water Resource, River and Coastal Engineering (Hydro-2023) organized by Department of Civil Engineering, NIT Warangal
- Ms. Priya Gupta awarded Best Student Paper Award, 2023 50th IEEE Photovoltaic Specialists Conference, San Juan, Puerto Rico.
- Dr. Rajnish Kumar Singh, received the 1st position in the oral presentation at the international Conference

on Technology and Innovations for Sustainable Development (TISD-2023) at MNNIT Allahabad

- Ms. Pratistha Rai received the “Best Poster Presentation Award” at the “3rd International Conference on River Health: Assessment to Restoration (RHAR 2023)”.
- K. Bheemalingeswara Reddy received Best Presentation Award in the CPESE 2023 held at Nagoya, Japan.
- K. Bheemalingeswara Reddy received a Foreign Travel Grant support from CSIR, India support to attend and present a paper at international conference held in Japan.
- Ankush Halba became Student Ambassador at India Energy Storage Alliance (IESA).
- Ankita Bhatt and Kumari Anshu received SERB OVDF Fellowship to conduct 1-year research at Purdue University, USA.

### Notable activities in the Department

- **Green Hydrogen Laboratory and Renewable Grid Integration Laboratory.**

Several webinars/symposiums/workshops/conferences were organized, including Workshop on “Guidelines for Constructed Wetland Systems for Treatment of Sewage in India,” Rural Technology Action Group (RuTAG) IIT Roorkee conducted two-day training program titled as “Wool Processing-Raw Wool to Fabric” on Small-Scale Wool Processing, a short-term Training Course on “Energy Transition and Hydrogen Economy” and many more.

## Department of Management Studies

The department of management studies imparts high quality education in the professional fields of business management and offers Masters in Business Administration (MBA), Ph.D., and Executive MBA (EMBA) programmes. Department is a leading centre of management research in the country and maintaining

its place in top 5 B schools on the basis of research output in NIRF ranking. Department is also consistent in QS ranking within band of 251-300. With a strength of 125 + research scholars, department is committed to provide excellent environment for management research. The department has subscribed large number of databases for excellence in research. Almost all the faculty members of the department are offering online courses under NPTEL Scheme and many other long term course through various Edtech platforms. Department is organizing various Industry oriented sponsored and open participation MDPs and different type of sponsored projects having societal elements.

<b>Total no. of faculty</b>	<b>23</b>
No. of Prof. of Practice	03

**Prof Anamika Kumar Kulbaskar** Dr. Anamika completed her Ph.D. from Indian Institute of Management Lucknow in the area of Finance and Accounting. she was working at IIM Kashipur as Assistant Professor in the area of Finance & Accounting. Her primary areas of interest are asset pricing, market efficiency, behavioral finance, textual analysis, FinTech, Digital Finance, Climate Finance, Banking & Credit Risk Modelling.

**Prof Raj Agnihotri**, Mary Warner Fellow and Professor of Marketing at Iowa State University, Dr. Raj, has joined the department as Adjunct Professor. He is the founding director of Ivy Sales Forum and executive director of Industry Engagement for Ivy College of Business. Raj has published over 75 articles and is considered a global authority in digital mediation in sales processes. He has guided industry professionals from North America, Brazil, Europe, and India and is a co-author of ABCs of Relationship Selling.

### Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
MBA	169	-
Executive MBA	68	-
Ph. D	137	08



## R & D Activities

Project Status	Sponsored	Amount Rs. in lacs)
New	Multi-Country International Electricity Transition Potential and Challenges Project	37,40,000
	Societal empowerment of artisan and rural community through Geographical Indications: Exploring opportunities in Garhwal Region of Uttarakhand	12,90,000
	Adaptation of Indigenous and Local Knowledge Systems and Fintech Solutions for Comprehensive Tribal Development in Chhattisgarh State	3,35,00,000
New	Exploring Low carbon transportation pathways for India	41,43,000
Ongoing	Framework for municipal waste management solutions in Smart Cities of India	9,00,000
	Transforming Women's Livelihood through Revival of Gharats/Watermills and Associated Applications in the Hilly Regions of Uttarakhand	6,00,000
	DPIIT-IPR Chair	20,00,000
Completed	International Open Decarbonization Project	41,25,000

## Student Achievement:

1. Mr. Mayank Gupta – received 2nd Best Paper Award: cash prize of Rs. 75000 at the World Finance Conference held at the University of Agder, Norway,
2. Manisha Yadav- received Best Paper Award: cash prize of Rs. 1Lakh, at Symposium in Entrepreneurship, Finance, and Innovation (VSEFI), Vietnam)
3. Ms. Lagan Jindal received Second Best Paper Prize: worth EUR 250A at the 5th International Conference on Financial Markets and Corporate Finance (ICFMCF 2023) held at the Department of Management Studies, IIT Delhi, India.
4. Ms Ariba awarded the scholarship of \$600 for being one of the winners of the AMS Review Sheth Foundation Annual Doctoral Competition 2024.
5. Mr Gopal Saha research paper was recognized as a top 4% contender for the best paper award at the conference.

Several webinars/symposiums/workshops/conferences were organized, A few of them are as follows:- Electricity Markets for Power Management Institute, National Thermal Power Corporation (NTPC), Open Energy System Optimization Modelling and Launch event of IDEEA, Avenir “The Annual Business Conclave”, A 7th CK Prahalad Memorial Lecture programme, “ Navigating the privacy landscape: strategies for big techs in compliance with new parliamentary laws”, Selecting an innovation point to strategically drive marketing throughout the value chain from an entertainment industry perspective”, Transforming Women's Livelihood through Revival of Gharats/ Watermills and Associated Applications in the Hilly Regions of Uttarakhand”, “Assessing the Impact of Pradhan Mantri Bhartiya Janaushadhi Pariyojana, Transforming Women's Livelihood through Revival of Gharats/ Watermills and Associated Applications in the Hilly Regions of Uttarakhand, Sustainable Business Management International conference, Markov Decision Process and Reinforcement Learning.





Workshop on Flipkart Mr Sanjay Shende, Director HR Flipkart is felicitating to Professor Kamal Kishore Pant , Director IITR. for his contribution in the success of FLAIR 3.0

## Department of Mathematics

The Department of Mathematics attained its present status of an independent department in 1960. Growing steadily, the department runs its own Undergraduate and Postgraduate programs in Mathematics. The department also offers Ph.D. degrees in various areas of Pure and Applied Mathematics, Operations Research and Statistics. Department has collaborations with different National and International Organizations in various fields of Mathematics. Besides the central Computing facilities of the Institute, the department has a state-of-the-art computer laboratory. The Faculty members publish high-quality research publications and are also involved in sponsored and consultancy research.

Total no. of faculty	29
No. of Post Doc. Fellows	2
No. of PMRF	3

- Prof. Narayan Rakshit joined the Department as Assistant Professor in June, 2023.

## 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 three academic session replacing the a five-year Integrated UG/PG program. It also runs its traditional two-year MSc (Mathematics) programme.

Programmes Offered	Students on-roll	Degrees Awarded
BS-MS I YR	54	35 (Int. M.Sc)
BS-MS II YR	43	
Int. M.Sc (MSM) III YR	45	
Int. M.Sc (MSM) IV YR	44	
Int. M.Sc (MSM) V YR	40	
M.Sc.I YR	37	36
M.Sc.II YR	36	
Ph. D	110	9

## R & D Activities

The department has a strong and dedicated team of faculty members having expertise in various areas of Pure and Applied Mathematics. With a vast strength of about 100 Ph.D. scholars, many of them admitted through the funding of various sponsored research projects, the department showcases very active participation in R&D activities.

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	2	59.18	1	31.00
Ongoing	18	216.88		
Completed	8	163.11		



## Student Achievement

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. This year, 28 out of 31 students were selected through the in-house placement.

Several webinars/ symposiums/ workshops/ conferences were organized, including, Harish Chandra Memorial Lecture, March 15th, 2024 in the Celebration of International Pi/mathematics Day.



## Department Mechanical & 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. The department offers Master of Technology courses in Machine Design Engineering, Production and Industrial Systems Engineering, Thermal System Engineering, Welding Engineering and CAD, CAM and Robotics. The department has laboratory and workshop facilities with modern sophisticated equipment to carry out research in all areas related to Mechanical and Production & Industrial Engineering. The faculty actively participates in sponsored research and consultancy work.

Total no. of faculty	46
No. of Post Doc. Fellows	01
No. of PMRF	06

- **Prof. Saurabh Sharma**, joined the department this year his research interest includes Novel combustion technologies, flameless/MILD combustion, Oxy-fuel combustion, e-fuels, Flameless burners for hydrogen and ammonia, IC Engines, Numerical modelling of turbulent combustion
- **Prof. Anuj Bisht**, joined the department this year his research interest includes Electro-plasticity, Shock-material interaction, High strain rate deformation, Nanomechanics, Electron microscopy

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
B. Tech	863	182
M. Tech	111	32
Ph. D	195	36

## R & D Activities

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	21	3452.40	-	-
Ongoing	29	2516.99	09	71.51
Completed	16	733.35	11	34.16

## Student Achievement

- Mr. Abhishek Kumar, received all Around Excellence Award with cash prize of Rs. 60000/-
- Mr. Ayush Pradip, received all Around Excellence Award with cash prize of Rs. 30000/-
- Ms. Shivanshi Arora, all Around Excellence Award with cash prize of Rs. 30000/-
- Ms. Aashi Jain, all Around Excellence Award with cash prize of Rs. 30000/-

Several webinars/symposiums/workshops/conferences were organized, including 18<sup>th</sup> International Conference on Vibration Engineering & Technology of Machinery and VETOMAC 2023

## Department of Metallurgical and Materials Engineering

The Department of Metallurgical and Materials Engineering was established in 1963 and This year, we have completed our 60 years of establishment. This year the Department added another XRD and FE-SEM to its characterization capability. The Department is under a major renovation and facelift.

Total no. of faculty	27
No. of PMRF	10

- **Prof. Aparna Tripathi**, had joined the Dept. of Metallurgical and Materials Engineering, IIT Roorkee as an Assistant Professor. Her research interests include diffusion in multicomponent alloys, precipitation modelling and processing-microstructure-property correlation in light alloys. As a research scholar, she also visited University of California, Davis for a brief period to work on a collaborative project with Prof. Enrique Laverna on electric field assisted diffusion.
- **Prof. Piyush Jagtap**, received his Ph.D. from the Indian Institute of Science Bangalore. Subsequently, he worked at Brown University, USA as a Fulbright postdoctoral fellow and at Aix Marseille University, France. He has extensive experience in thin film fabrication and thermo-mechanical behavior of thin films and coatings.

### Academic Programmes

Department Introduced a new M.Tech Program in “Computational Materials Engineering”.

Programmes Offered	Students on-roll	Degrees Awarded
B. Tech	327	76
M. Tech	11	8
Ph. D	95	05

## R & D Activities

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	11	366.8	Nil	Nil
Ongoing	15	562.31	Nil	Nil
Completed	08	259.09	1	10.00

### Major Facilities

- Motorized Linear XYZ Stages with GUI.
- DC/RF magnetron sputtering system,
- Temperature dependence of resistivity cum bandgap calculation system,
- Magnetic Hysteresis Loop tracer system.

### Other highlights

Department has received the FIST grant of Rs. 3.7 Cr.

#### Notable activities in the Department

- Establishment of new Electrical & electronic materials lab.
- New Biomaterials Characterization Facility Lab.

Several webinars/ symposiums/ workshops/ conferences were organized, including :A short-term workshop involving lectures and hands-on sessions on crystal plasticity”, “Finding nature’s hidden rules for designing functional materials for next-generation electronics and energy applications” and ‘Industry - Academia Partnership’.

## Department of Paper Technology

Situated at the foothills of the enchanting lower Himalayan ranges of Shiwalik, Saharanpur in Western Uttar Pradesh is home to IIT Roorkee’s Saharanpur Campus. Originally established as the School of Paper Technology in 1964 with assistance from the Royal Swedish Government, it was managed by a society created by the U.P. Government until its merger with the University of Roorkee in 1978. Renamed the Institute of Paper Technology in July 1978, it later became the Indian Institute of Technology Roorkee, Saharanpur Campus. The campus, spanning 25 acres, is located approximately 49 km from the Roorkee campus.



The Department of Paper Technology offers a two-year M. Tech. degree in Paper and packaging Technology, addressing the requirements of the paper and packaging industries while imparting knowledge of allied chemical and process industries. Research activities encompass environmental management, energy-efficient processes, optimal utilization of Indian raw materials, modern pulping and bleaching techniques, secondary fiber processing, assessment of pulp suspension characteristics, enhancement of black liquor processing, evaluation of paper surface properties, biotechnological applications, production of quality papers, cost reduction, waste minimization, and the development of lignin and pulp by-products through nanotechnology, active packaging, and barrier coating.

Total no. of faculty	7
No. of PMRF	5

**Prof. Subrata Biswas**, recently joined department. His research focuses on developing a novel semi-fluidized bed adsorption column for removing heavy metals and

organic pollutants from industrial wastewater. Biswas has 18 publications in international peer-reviewed journals and has worked as a postdoc fellow at IIT Madras and HKUST Hong Kong.

**Prof. Nishi Kant Bhardwaj**, recently joined department. He is a Pulp & Paper Engineer with 29 years of experience, joined the faculty as a Visiting Professor on 21.02.2024. He has worked in R&D, teaching, and paper mills in India and Iran. Bhardwaj holds a PhD from Monash University and has mentored scientists and supervised 13 PhD theses. His research interest are fibrous raw material scarcity, environment-friendly pulping, electrokinetic properties, filler application, paper recycling, pollution reduction, and biotechnological applications.

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
M. Tech	14+24	10
Ph. D	28	08

## R & D Activities

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
<b>New</b>				
<b>Ongoing</b>	DST	4600000.00	DST	3500000.00
			UP Pollution Control Board	5721996.00
			Chadha Papers Ltd., Bilaspur, Distt. Rampur	2753994.00
			Shah Paper Mills Ltd.,	3147660.00
			Satia Industries Limited.	1967288.00
			Shreyans Industries Ltd.	1573877.00
			Mangal Papers Pvt. Ltd,	108000.00
			Katyayini Paper Mills Private Limited	2292300.00
			Mangal Papers Pvt Ltd.	3126164.00
			Vishal Paper Industries Private Limited,	2944322.00
			M/s Nirmal Traders,	118000.00
			Katyayini Paper Mills Private Limited,	847458.00
			Shah Paper Mills Ltd.,	705000.00
			Chadha Papers Ltd., Bilaspur, Distt. Rampur	1854632.00
			Satia Industries Limited.,	400000.00
<b>Completed</b>	SERB, Govt of India	2700000.00	SERB, Govt of India	2700000.00
			Others	3571957.00

## Major Facilities

Drop tester, Digital box compression tester, Vibration table, Inclined impact tester, Thermoforming machine, FFS machine, Folding endurance tester, PFI mill, Cobb tester, Gloss meter, Bendsten smoothness tester, Hydraulic press machine, Peel strength tester, pH-conductivity meter, Probe sonicator, Fume hood, Temp and humidity chamber, Vacuum leak tester, UV spectroscopy, Centrifuge, Probe Ultrasonication, and Vacuum Dryer

## Student Achievement

- Konala Akhila: received 2nd prize in oral paper presentation.
- Dakuri Ramakanth received Best Poster IRDC.
- Ram kumar Deshmukh: received SIES SOP Award.
- Shefali Tripathi: received Ucost Young Scientist award and SIES SOP Award.
- Prachi Jain received PMRF and SIES SOP Award.
- Samiksha Bist received Ucost Young Scientist and 1st prize oral presentation SETFEST 2023.
- Lakshman Rao Lingala received 2nd prize poster IRDC.
- Ahuja, A., Sharma, P., Mahur, B. K., Mishra, P., & Rastogi, V. K. received. Second Prize in poster presentation, in Institute Research Day.
- Vijayakumar and Kamal Kumar, received cash prize of 1 lakh rupees for the winners in DTU.. In which our team "The King Makers" got the 3rd place with cash prize of 20k.
- Mr. Vijayakumar and Kamal Kumar securing 2nd position in the "INDIAPRENEUR 12.0" an entrepreneurship event conducted by Indira school of business studies, Pune.
- Mr. Vijayakumar and Kamal Kumar, received the cash prize of 30k rupees with investment exposure for the winners. in NIT Kurukshetra.
- Ms. Pragti Saini has been awarded 1st prize in Oral presentation made during Research and Industrial Conclave 2023 organized by IIT Indore.

## Other highlights

- A Memorandum of Understanding (MoU) was formally executed between the Department of Paper Technology at IIT Roorkee and Katyayani Paper Mills Pvt. Ltd.



- Inauguration of the laboratories for Pulp, Paper and Stock Preparation Laboratories and two new laboratories Chemical Recovery and Lignin Byproducts, and Pulp and their Value-added Products on Vikram Samvat 2080.



- Technologies 'Environment-friendly water-based coating formulation for paper to improve the reliability and recyclability' transfers to MS Papers,



- Product launch of technology transfer product with the name of 'Auracoat'



- Award received for technology commercialized on Institute Research Day-24



### Notable activities in the Department

Paper, Pulp, Stock Preparation and NABL accredited Paper Testing Laboratories and inauguration of Two new laboratories i.e. Chemical Recovery and Lignin Byproducts and Pulp and their Valued-added Products

## Department of Polymer and 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. Under the supervision of highly motivated faculty members, the Department performs fundamental and applied research in polymer science, polymer engineering, process engineering, and chemical engineering. The faculty members are enthusiastically working toward creating a highly competitive academic and research environment in the Department. The Department houses state-of-the-

art advanced characterization equipment's such as DSC, TGA, FTIR, UV-vis-IR, DMA, UTM, XRD, AFM, SEM, DLS, GPC, Rheometer, Twin screw extruder, Injection molding machine, Micro extruder & injection molding machine, Hakke blender, Rubber processing instruments, to name a few. A detailed list of the instruments can be found here. The department faculties are engaged in extensive research duly supported and funded by several industries and government funding agencies. The research activities are strongly supported by nearly 60 Ph.D. students working in various emerging areas. The research results are communicated by publication in esteemed international journals, patents, and technology transfer. The publication per faculty ratio is among the highest within the institute. Various government agencies (DST, SERB, Imprint, UAY, ONGC, DRDO, etc.) and industry bodies (Dow Chemicals, Fine Organics, Permionics, IOCL-Total, Bharat Electronics Limited, RPG Industries, DTIL, SIG, etc.) fund the research programs of the Department.

The Department of Polymer Science and Process Engineering offers a two-year M. Tech program with a current intake of 14 students. The M.Tech. program imparts fundamental and applied knowledge to the students and trains them to be professionally ready and well-trained.

Total no. of faculty	12
No. of Post Doc. Fellows	04
No. of PMRF	08

**Prof. Dharmansh** joined the Department as an Assistant Professor. He was also involved in some other CFD projects including "insertion of nanoparticles in coiled flow reactor to increase heat transfer" and "Computational Fluid Dynamic Study of Porous and Non-Porous Catalytic Pellets."

**Prof. Udit Choudhury** joined the Department as an Assistant Professor, Dr. Choudhury is a CV Raman Fellow at the Centre for Nanoscience and Engineering at IISc. PhD from the Max Planck Institute for Intelligent Systems, Germany and the University of Groningen, the Netherlands in the field of micro-swimmers. He has broad research interests in the field of soft matter specializing on synthetic micro-swimmers, micro-nano fabrication, active materials, collective behavior, cellular biophysics, biopolymers, rheology and quantum metrology.

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
B. Tech	NIL	NIL
M. Tech	14+20 (34)	09
Ph. D	60	08

## R & D Activities

Project Status	Sponsored	Amount (Rs. in lakhs)	Consultancy	Amount Rs. in lakhs
New	10	550.30	0	0
Ongoing	07			
	269.68	03	4.2	
Completed	08			
	349.52	07	28	

## Major Facilities

Hollow Fiber Membrane Casting Machine

Oxidation Gas Flow Setup

## Student Achievements

- Rahul Gautam and Ms. Namita Talapatra received Best Oral Presentation in Global-Indian Young Scientists Research and Innovation (GI-YSRI) Conference.
- Mr. Prakhar Dixit received Excellence Doctoral Research award 2023.
- Dr. Nishant Jain, received Young scientist award in IISER, Bhopal.
- Ms. Shakshi Bhardwaj, received Best Poster award in EMEE.
- Mr. Pawan Kumar Pandey selected for Best Poster award in International Conference “Biomaterials and Health Care April 2023 (BioHeal-2023).
- Ms Nisha Tamta, has been awarded the Best Paper Award, in The 6th International Conference on Advancements in Materials and Manufacturing March, 2024 (ICAAMM-2024).
- Mr. Salaman Ahamad, received Best Mentor award 2023.

- Mayank Gautam, M. Tech, selected for Department Gold Medal for the highest CGPA -2023.
- Ms. Chhavi Sharma and Mr. Manjinder Singh received Commonwealth fellowship 2023.
- Km. Priya, Vishu Verma, Nitesh, Sakshi Bhardwaj and Subrata Kumar Maiti awarded with PMRF Fellowship.
- Shiva Singh and Chhavi Verma received PPS graduate student travel award

## Other highlights

- MoA signed with Centre for High Technology.

### Notable activities in the Department

- Renovation of Animal cell culture lab.
- “Complex fluids and nanofibers Lab”
- “Soft-micro-nano Robotics lab”

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

- Interfacial Modification in Polymer Nanocomposites to Tailor Functionalities”
- Innovations in Fire Protection Materials
- Electron Microscopy of Polymers and Nanocomposites
- “Innovation Journey – Bridging the GAPS and promote Collaboration
- Computational description of porous material: An aerogel uses case
- Characterization of proteins and polymers using mass spectrometry and other analytical methods
- Sustainable Materials for A Circular Economy in Mitigating Climate Change
- Structure and rheology of biofilms - a colloidal perspective



## Department of Physics

The Department of Physics at IIT-Roorkee was established in 1960. Since inception, the department is engaged in high-quality teaching at both, undergraduate and graduate levels, and cutting-edge research in fundamental as well as technologically crucial areas. The department houses state-of-the-art experimental facilities and teaching laboratories.

Total no. of	40
No. of Post Doc. Fellows	03
No. of PMRF	09

### Academic Programmes

The Department of Physics offers B.Tech. in Engineering Physics, BS-MS (Physics), Integrated M. Sc. (Physics), M. Tech. in Photonics and M. Tech. in Solid State Electronic Materials. Further, the Department offers M. Tech. in Semiconductor Technologies jointly with the Department of Electronics and Communication Engineering, IIT Roorkee, and three Taiwanese universities, to prepare skilled man-force for future semiconductor industries in India. Furthermore, the Department runs a well-recognized Ph.D. program.

Programmes offered	Students Registered in 2023-24	Degrees Awarded
B.Tech	54	29
M.Tech	13	12
Ph.D	34	30
M.Sc.	18	26
Int. M.Sc.	-	16
BS-MS	22	

### R & D Activities

The Department of Physics is engaged in state-of-the-art research in most of the contemporary areas of specialization such as Atmospheric Physics, Atomic and Molecular Physics, Condensed Matter Physics, High-Energy Physics, Nuclear Physics and Optics and Photonics.

Project Status	Sponsored	Amount Rs. (in lacs)	Consultancy	Amount Rs. (in lacs)
New	19	1439.10		
Ongoing	30	3501.33	02	8
Completed	12	1235.25		

### Major Facilities

- Thermal Co-Evaporation System: This is a thermal deposition system which can deposit thin metal film and organic film. This is useful for solar cells device fabrication. This has been installed in February and available for use. This instrument has been procured from SERB IRPHA Grant.

### Student Achievement

- Ms. Deepika Singh, awarded 3rd Best Innovation Award in Uttarakhand Industry Expo, 2023.
- Kajal Kumari, awarded with Best Poster Presentation Award SNP-2023” at Indian Institute of Technology Indore, Madhya Pradesh.
- Sangita Mahapatra, awarded Second prize in Research Paper Presentation at the 7th International Diabetes Summit held by Chellaram Diabetes Institute, Pune.
- Mr. Ankur Singh and Ms. Malvika received SERB International Travel Award.
- Parth Bahuguna received best thesis award.
- Himanshu Grover and Mr. Dayakrishna Nailwal, secured the Best Paper Presentation and best paper award at the National Space Science Symposium (NSSS), organized by ISRO in collaboration with Goa University.
- Mr. Akash Kumar, selected for the SCOSTEP Visiting Scholar Program.
- Mr. Manjeet, received the best presentation award.
- Arti Yadav, received best Oral Presentation Award.
- Sadhna Singh received Best poster Presentation Award.
- Dr. Naveen Kumar Tailor received Best PhD Thesis Award and Fulbright Postdoctoral Fellowship.



### Notable activities in the Department

- Establishment of large area printing system for perovskite Module.

Several webinars/symposiums/workshops/conferences were organized, including 2nd International Meeting on Energy Storage Devices and Industry-academia conclave, Two co-hosted workshops: the 7th Workshop on Computational Techniques in Optics & Photonics and Workshop on Sensors & Nanophotonics, Perovskite Society of India Meet, A short course on Bayesian inference in astronomy and physical sciences by Prof. Bhal Chandra Joshi, IITR & NCRA-TIFR, One Day Workshop for Collaboration between IIT Roorkee and ARIES, Nainital.

## Department of Water Resources Development & 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 no. of faculty	15
No. of Post-Doctoral Fellow	1
No. of PMRF	5

### Academic Programmes

Programmes Offered	Students on-Roll	Degrees Awarded
M. Tech.	69	15
Ph. D.	11	7

### R & D Activities

Project Status	Sponsored	Amount	Consultancy	Amount (₹in lacs)
New	12	595.27	2	56.20
Ongoing	16	896.26	4	70.80
Completed	12	374.67	5	103.48

### Major Facilities

- Real-time Industrial Process Monitoring and Control:
- Installed ideaForge Q6 Unmanned Aerial Vehicle
- LOVIBOND BD600: Measuring BOD of water and wastewater samples
- Multiparameter Kit
- Acoustic Doppler Velocimeter (ADV):
- Deeper Smart Sonar
- Surface Velocity Radar
- Elga water purification system instrument
- Total Kjeldahl nitrogen (TKN) has been installed.
- Electrical Resistivity Tomography (ERT).
- Combustion Analyzer

### Student Achievement

- Mr. Dev Anand Thakur, Mr. Hrishikesh Singh and Mr. Rahul Deopa received an international travel grant.
- Mr. Dev Anand Thakur and Mr. Hrishikesh Singh received a Student Travel Grant
- Mr. Dev Anand Thakur received the Best Paper Award in the International Conference on Future of Water Resources.
- Mr. Hrishikesh Singh, received the Prime Minister Research Fellowship (PMRF)
- Dr. Suresh Devaraj, received SERB-International Travel
- Ms. Abhinanda Roy received the prestigious Sivapalan Young Scientists Travel Award (SYSTA) funded by the International Association of Hydrological Sciences (IAHS).
- Ms. Sruthakeerthi P received the Best JAEI Research Paper Award by the Indian Society of Agricultural Engineers.
- Mr. Mukund Narayanan, has received the prestigious CLIFF-GRADS.
- Ms. Meena S, has received the 'Deloitte Fellowship'.

### Notable activities in the Department

- The Polytector III G999E greenhouse gas monitor

conducts real-time measurements of various gaseous contaminants in the agricultural fields, such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and ammonia (NH<sub>3</sub>), enhancing the field knowledge of students on measuring and testing the greenhouse gas emissions emanating from the agricultural landscapes and industrial stacks.

Several webinars/ symposiums/ workshops/conferences were organized, including International Conference on “Future of Water Resources”, Special session “Impact of Climate Change on Water Resources Systems of the Indus Basin”, INCID-IWRS session on “Smart Agriculture Technologies for Irrigation Water Management”, Workshop on “Irrigation Efficiency Improvement through On-Farm Water Management, Workshop on “Role of Water Security, Organic Farming and Agromet Advisory Services on Sustainable Rural Development” for the Coordinators of UBA Participating Institutes (PIs) of Uttarakhand



# Centers

## Centre for Transportation Systems (CTRANS)

CTRANS 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 Transport & management systems. CTRANS is primarily a multi-disciplinary initiative with the collective participation of Engineers, Architects, Planners, Scientists and Researchers from Science & Technology, Humanities and Social science, Architecture & Planning and Management backgrounds. 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.

Total no. of faculty	13
No. of PMRF	3

- **Prof. O.P. Agarwal** joined as Professor of Practice in CTRANS on 25-05-2023. Prof. O.P. Agarwal, a former Chief Executive Officer of WRI India, Senior Urban Transport Specialist and Advisor at the World Bank, and Executive Director at the Indian School of Business, has been a key figure in India's National Urban Transport Policy and has served as the Chief Executive Officer and Managing Director of the Urban Mass Transit Company.

## Academic Programmes

- **Human resource development programmes**

The Centre shall organize Training Programmes as well as specialist courses to train the manpower in the various specialized areas of Transportation Systems. The various Teaching/Research and other organizations will be approached for deputing in-service teachers/engineers/professionals. The Centre will run the M.Tech. programmes in Future. These programs in modular / sponsored type as well as through open admissions in Transport Infrastructure Systems, Rail Engineering and Transport Economics will be run in the near future.

Programmes Offered	Students on-roll	Degrees Awarded
M. Tech	15	7
Ph. D	22	5

## R & D Activities

The Sponsored Research & Development and Consultancy Projects are undertaken in the related areas of Transportation System. There is a scope of potential funding from the Ministries/Departments of Government of India. Government Corporations/ Undertakings/ Authorities etc. The consultancy activities are undertaken by the faculty in the multidisciplinary areas at the Centre. The facilities available at this Centre as well as of other departments are utilized to attract consultancy projects.

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
New	3	₹67,34,000	0	-
Ongoing	3	₹95,99,330	8	₹20,00,000
Completed	0	-	0	-

## Notable activities in the Department

- Smart and Intelligent Mobility Lab-
- Active Mobility Planning Lab-

Several webinars/ symposiums/ workshops/ conferences were organized, including, Workshop on Socio-economic Impact of KGB Water Freight Corridor, Interactive session on Application of Advance Analytics in Intelligent Transportation Systems, Expert Lecture on Understanding Dynamics of Spiritually Motivated Crowd, Expert talk on ITS application for Public Transport.

## Center of Excellence 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. A wide range of sophisticated equipment related to nanotechnology has been made operational at IIC as

well as at the centre involving the multidisciplinary faculty members. In view of the major impact of 'Nanoscience' in vast disciplines of Science and Technology, M.Tech programme on 'Nanotechnology' was started in 2008. This course is aimed at providing the basic knowledge to B.Tech/M.Sc students about various concepts of nanoscale materials, their synthesis, characterization, novel properties, applications and future perspectives. These being a multidisciplinary area, a number of electives have been designed to impart knowledge on modeling and simulation, physics, chemistry, biological and technological aspects of nanomaterials. Besides, it is providing students a practical training on advanced methods for the synthesis, characterization and elucidation of different nanostructures. This expertise could be utilized to fabricate novel materials and nanodevices.

## R & D Activities

Project Status	Sponsored	Amount Rs. in lacs)	Consultancy	Amount Rs. in lacs
<b>New</b>	(1) Indian Council of Medical Research (ICMR), New Delhi	97	(1) Esysantra Pvt. Ltd	5.9
	(2) Chellaram Diabetes Research Centre (a) unit of Chellaram Foundation)	42		
	(3) Royal Society of Chemistry	5		
	<b>Ongoing</b>	(1) DST, India.	87	
(2) Esysantra Pvt. Ltd		33		
(3) Science and Engineering Research Board		32.86		
(4) DST, New Delhi		55.64		
(5) DRDO-CARS		49.64		
(6) ICAR - NASF, New Delhi		68.03		
(7) ISRO, Bengaluru		27.68		
<b>Completed</b>	(1) DST, New Delhi	23.78		
	(2) SERB, New Delhi	20.25		

## Major Facilities

### Installation of Glove box

### Student Achievement

- Ms. Nikhita H Ingalagi received American Chemical Society (ACS) sponsored best poster award in 8th International Conference on Advanced Nanomaterials and Nanotechnology (ICANN 2023), IIT Guwahati.

Total no. faculty	Core faculty: 02; Joint faculty: 20
No. of Post Doc. Fellows	03
No. of PMRF	07

- Prof. Avik Samanta has joined the Centre as the new core faculty.

## Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
M. Tech	17	05
Ph. D	46	07

- Ms. Garima Sood received the prestigious Reliance Foundation Postgraduate Fellowship.

Several webinars/ symposiums/ workshops/ conferences were organized, including, Third Prof. Vijaya Agarwal Lecture, One-day workshop on 'Recent advances in functional nanomaterials and nanodevices' and Membrane Technologies for Desalination, Energy and Water Sustainability: MemDEW



## Centre of Excellence in Disaster Mitigation and Management

The Centre of Excellence in Disaster Mitigation and Management (CoEDMM) is India's first Disaster Mitigation and Management centre. On March 27, 2006, the Centre came into existence to conduct an educational programme, cutting-edge research, and training on disasters, vulnerability, and mitigation. Creating a National Database for the rapid dissemination of information and knowledge is also a core objective of the Centre. The main aim of the educational programme is to conduct multidisciplinary research and impart advanced expertise on technical and managerial skills to the professionals to make them equipped with innovative technologies for effective mitigation and management of disasters for the overall benefit of society. The Centre aims to achieve excellence in critical areas of education and research at par with international standards. Regional issues, especially Earthquakes, Tsunamis, Floods, Cyclones, Fires, Avalanche, Landslides, Cloudbursts, and their early warnings are other focus areas. 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.

Total no. faculty	Core faculty: 03; Joint faculty: 13, Visiting Faculty 02
No. of PMRF	06

- Prof. Sanjay K Jain joined as a visiting faculty at the Centre.

### Academic Programmes

Programmes Students Degrees Offered	Students on-roll	Degree Awarded
M.Tech	25	119
Ph.D	44	21

### R & D Activities

Project Status	Sponsored	Amount (Rs. In lacs)	Consultancy	Amount Rs. In Lacs
New	02	109.79	02	119.11
Ongoing	06	632.80	17	135.50
Completed	15	477.44	20	110.00

### Major Facilities

Installation of a reduced-scale cascading hazard (i.e., landslide, debris flows and flood) simulator

### Student Achievement

- Ms. Chanda Kumari was awarded with Swedish South Asia Studies Network (SASNET) scholarship.
- Ms. Chanda Kumari, Ms. Sakshi Goyal, and Mr. Joshal Bansal, received the prestigious Prime Minister Research Fellowship (PMRF) through the lateral entry channel.
- Mr. Sudhanshu Dixit has been awarded the Early Career Scientist's Travel Support (ECSTS) from European Geosciences Union (EGU)

### Other highlights

- The Centre of Excellence in Disaster Mitigation and Management has become an Associate member of the International Consortium of Landslides (ICL)
- The Centre of Excellence in Disaster Mitigation and Management has been appointed as the GADRI Board of Directors for next 4 years.

Several webinars/ symposiums/ workshops/ conferences were organized, a few of them are :Seminar on Sustainability Transitions in Agri-food Systems: Evidence and Options for Action in India and France, Workshop on Earthquake Early Warning Systems, One day Workshop on Dialogue on Scaling up of Proven Community-Based Climate-Resilient Agriculture & Water Management Practices, Technical Meeting for Indo-Japan Cooperative Science Program (IJCSP) Research Project on Territorial-scale Landslide Early Warning System and India Chapter of the Himalayan University Consortium, ICIMOD, Nepal.



## Centre for photonics and quantum communication technology

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.

### R & D Activities

Project Status	Sponsored	Amount Rs. in lacs
New	1	28.71
Ongoing	1	1.76316
Completed	1	24.50

Several webinars/symposiums/workshops/conferences were organized, including, 7th Workshop on Optics & Photonics: Theory & Computational Techniques (OPTCT) & Workshop on Sensors and Nanophotonics (SeNcity)

## 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

- **Prof. Gaurav Kumar Nayak** recently joined the school.

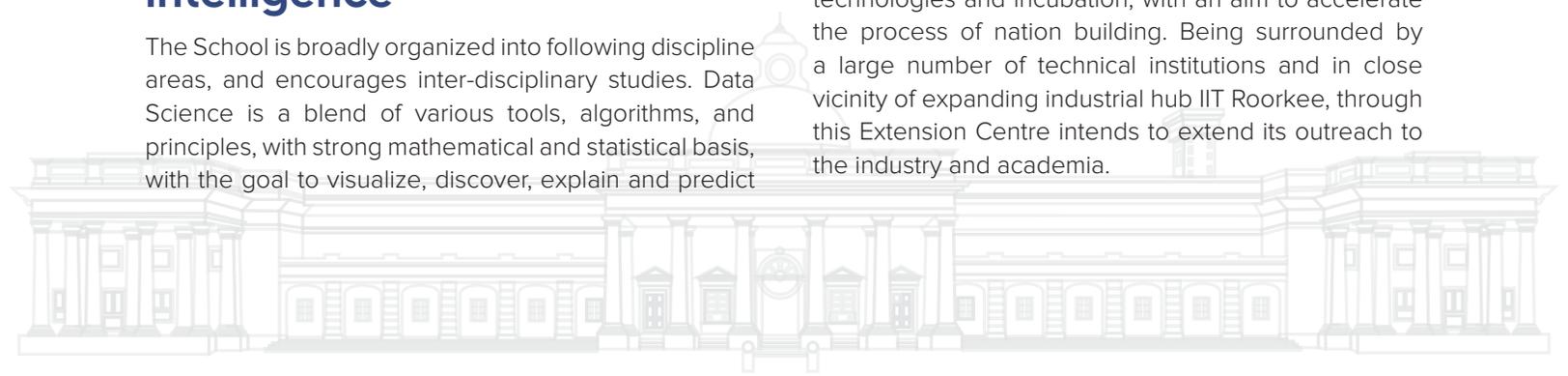
### Academic Programmes

Programmes Offered	Students on-roll	Degrees Awarded
UG	80	B.Tech DSAI
PG	57	M.Tech DSAI
Ph. D	17	DSAI

Several webinars/symposiums/workshops/conferences were organized, including invited talk from Naveen Jha from Mehta Family Foundation.

## 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. This 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 IITR's 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.



## Notable activities in the Centre

Protecon BTG is a Project Management Consulting services company with proven ability and experience to deliver Project Management Expert Services. The CEC IIT Roorkee and Protecon BTG is running a Certificate Program in “Project Management & Controls” at GNEC which embark on a transformative journey towards professional excellence with the collaborative initiative of both CEC IIT Roorkee and Protecon BTG. This program is designed to equip professionals with the skills and knowledge needed to navigate the dynamic landscape of project management. The program offers a unique blend of academic rigor and practical insights.

- MoU between IIT Roorkee and NPTI



Several webinars/ symposiums/ workshops/ conferences were organized, including IIT Roorkee Alumni Association Organizes Round Table To Enhance Collaborations NOIDA CHAPTER, Family Judges Training Programme, Session On Low Carbon Innovation In Buildings & Industries By Green Tree Global, DISCOM Capacity Building Program, Organized Under The Bureau Of Energy Efficiency, Ministry Of Power, Capacity Building Workshop, Residential Training Programme “Induction Training” Batch-1 To Be Organized By The Training Division, NIC HQ At Greater Noida Extension Centre(GNEC) Of IIT Roorkee, Training Program for CPSUs by NPTI, One-Day Conclave On Hydrogen Energy By CFSE, IITR, 2 Weeks Intermediate Level Cyber Security Program By NPTI, Indo German Partnership Workshop, Short Term Course On Skill Development In Agriculture Sector Using Space Technology By IN-SPACE, Department Of Space, Govt. Of India, Five Days Residential Training Program on Solution Architecture By NIC. Event by HORIBA India & IIT Roorkee on “Moving towards Green Hydrogen in India: Challenges & Opportunities” Workshop on “Emerging Technologies” on CPS domain, The DISCOM Capacity Building Program” organized under the Bureau of Energy Efficiency, Ministry of Power.



## Publication Statistics

Department/Centres	Book/Book Chapter	Conferences/Journal	Intellectual property filed/granted
Department of Architecture and Planning	0/20	44/47	01/00
Department of Applied Mathematics and Scientific Computing	0/02	15/20	03/00
Department of Biosciences and Bioengineering	01/10	25/99	14/18
Department of Chemical Engineering	0/03	37/85	09/12
Department of Chemistry	0/05	19/16	05/09
Department of Civil Engineering	11/12	87/140	08/01
Department of Computer Science and Engineering	01/0	19/16	06/03
Department of Design	--	12/02	0/01
Department of Earthquake Engineering	0/01	11/14	05/06
Department of Earth Sciences	0/03	22/32	01/0
Department of Electrical Engineering	0/03	30/71	06/06
Department of Electronics and Communication Engineering	-	62/75	21/16
Department of Humanities and Social Sciences	01/06	37/45	-
Department of Hydrology	01/05	35/47	07/03
Department of Hydro and Renewable Energy	02/07	43/48	03/04
Department of Management Studies	-	51/62	03/0
Department of Mathematics	1/02	35/96	-
Department of Mechanical and Industrial Engineering	02/0	01/57	14/34
Department of Metallurgical and Materials Engineering	0/01	10/50	10/10
Department of Paper Technology	03/11	22/161	07/01
Department of Polymer and Process Engineering	0/11	23/97	11/11
Department of Physics	0/09	133/197	16/07
Department of Water Resources Development and Management	3/6	64/50	02/02
Centre of Excellence in Disaster Mitigation & Management	0/01	20/10	-
Centre for Nanotechnology	0/01	24/54	13/05
Centre for Photonics and Quantum Communication Technology	-	19/9	-
Centre for Transportation Systems	0/05	29/11	-
<b>Total</b>	<b>26/124</b>	<b>927/1611</b>	<b>165/143</b>



# Institute Accounts

## 8.1 Summary of Balance Sheet

8.2 Summary of Total Income & Expenditure

8.3 Details of MoE Expenditure

8.4 Details of other Account

8.4.1 General Corpus Fund

8.4.2 Endowment Corpus Fund

8.4.3 Donations Received

8.4.4 Grant/Assistance Received from GOI

## 8.1 Summary of Balance Sheet as at 31st March, 2024

Amount in Rupees

Sources of Funds	Schedule	Current Year	Previous Year
Corpus/Capital Fund	1	4,33,56,34,026	3,623,224,000
Designated/Earmarked/Endowment funds	2	7,84,74,95,795	7,511,291,571
Current liabilities & Provisions	3	22,48,20,89,659	20,046,207,507
Un-Secured loan	3A	2,58,81,69,126	2,394,521,293
<b>Total</b>		<b>37,25,33,88,606</b>	<b>33,575,244,371</b>
Application of Funds	Schedule	Current Year	Previous Year
<b>Fixed Assets</b>	4		
Tangible Assets		18,58,04,45,453	15,940,855,841
Intangible Assets		14,64,38,793	189,506,463
Capital Works-In-Progress		3,54,53,81,699	3,908,123,097
<b>Investments From Earmarked/ Endowment Funds</b>	5		
Long Term		6,56,64,46,185	6,451,417,269
Short Term			
<b>Investments - Others</b>	6	3,21,69,45,203	2,406,338,341
<b>Current Assets</b>	7	3,33,98,87,821	3,078,283,394
<b>Loans, Advances &amp; Deposits</b>	8	1,85,78,43,451	1,600,719,966
<b>Total</b>		<b>37,25,33,88,606</b>	<b>33,575,244,371</b>



## 8.2 Summary of Total Income & Expenditure 2023-2024

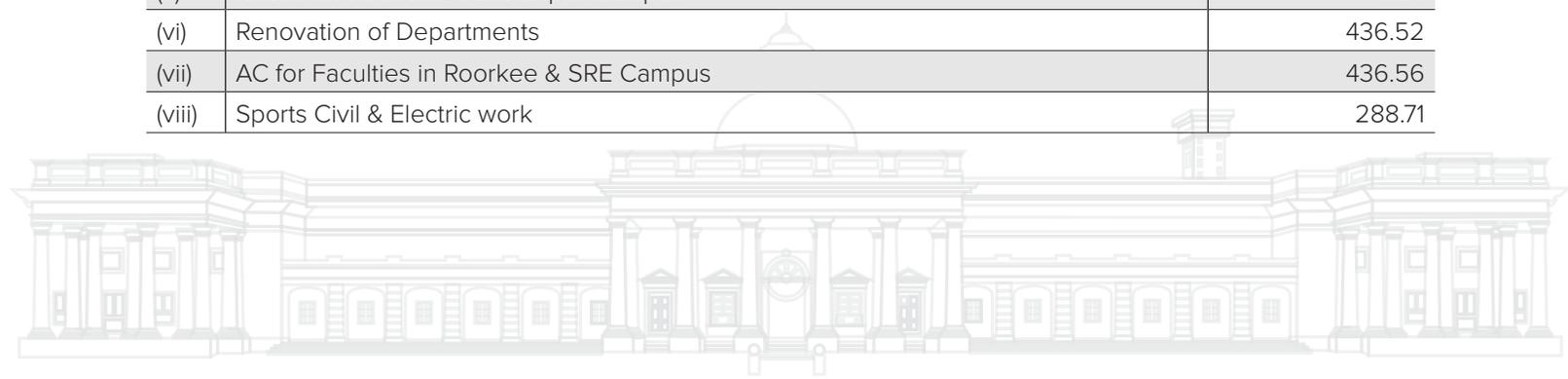
Amount in Rupees

Head of Accounts	Opening Balance	Allocation	Internal Receipts	Total Available fund	Expenditure during the year
MoE Main /TSA	0.00	77243.74	3379.60	72013.03	80623.32
PM Research Fellowship	0.00	1782.94	0.00	1782.94	1782.94
ASEAN Fellowship	0.00	35.25	0.00	35.25	35.25
UGC	9.98	163.72	0.28	173.98	163.37
CSIR	38.83	20.37	1.10	60.30	19.25
FEE	2545.10	0.00	19813.84	22358.94	20922.84
BRP	177.21	0.00	1206.79	1384.00	1003.98
National Scholarship	237.85	659.12	7.64	904.61	667.52
Government of India	259.92	148.73	279.38	688.03	432.59
<b>Total</b>	<b>3268.89</b>	<b>80053.87</b>	<b>24688.63</b>	<b>99401.08</b>	<b>105651.06</b>

## 8.3 Details of MoE Expenditure

(Rs. in lakh)

Sl.	Head of Accounts	Expenditure 2023-24
<b>1.</b>	<b>Equipment</b>	
(i)	Replacement of obsolete equipment & modernization of laboratories	8350.09
(ii)	Equipment of new department/placement cell education Tech. Cell/EPBAX	61.65
(iii)	Office equipment/Automation	
	(a) A few new offices	0
	(b) Computerization of Adms. Functions	778.43
<b>2.</b>	<b>Up gradation of Computing facilities</b>	150.61
<b>3.</b>	<b>Up gradation of Networking &amp; Multimedia Facilities</b>	2393.43
<b>4.</b>	<b>Strengthening of library</b>	2594.58
<b>5.</b>	<b>Renovation/Extension of Buildings (including support services)</b>	
(i)	Furniture- (For Hostels, Departments, Admi offices etc.	818.68
(ii)	Monitoring substation	34.20
(iii)	New Hostel Vigyan Kunj Roorkee (EWS)	1952.00
(iv)	Renovation of Academic Space	275.00
(v)	Roads for Roorkee /Saharanpur Campus	51.71
(vi)	Renovation of Departments	436.52
(vii)	AC for Faculties in Roorkee & SRE Campus	436.56
(viii)	Sports Civil & Electric work	288.71



Sl.	Head of Accounts	Expenditure 2023-24
(ix)	Mehta family school of DS&AI	5.34
(x)	Wheel chair lifts	152.55
(xi)	Renovation of Guest House	5.54
(xii)	Greater NOIDA	61.62
<b>TOTAL</b>		<b>18847.22</b>
<b>6.</b>	<b>Establishment Expenses</b>	
(i)	Pay & Allowance	23520.89
(ii)	OTA and Honorarium	14.59
(iii)	LTC	162.90
(iv)	Children Education Allowance	107.13
(v)	Medical Expenses	1097.23
(vi)	Professor Development Allowance (PDA)	527.91
(vii)	Reimbursement (Tele-Internet)	60.23
(viii)	Retirement benefit	2420.21
<b>TOTAL</b>		<b>27911.09</b>
<b>7.</b>		
(i)	Departmental Operating Costs	1998.47
(ii)	Contingency	366.38
(iii)	Student amenities /course/ Other Educational Expenses	457.38
<b>TOTAL</b>		<b>2822.23</b>
<b>8.</b>	<b>Assistantship/ Fellowship/ Merit-cum-Means</b>	7692.60
<b>9.</b>	<b>Maintenance Expenses</b>	
(i)	Electric & Equipment Maintenance	1128.26
(ii)	Water Power & Fuel/Electricity	2614.18
(iii)	Property Tax	26.89
(iv)	Repair & Maintenance of Estate/Furniture/Vehicle	2162.88
<b>TOTAL</b>		<b>5932.21</b>
<b>10.</b>	<b>Other Expenses</b>	1548.19
<b>11.</b>	<b>Pension &amp; Pensionary benefits</b>	9800.96
<b>12.</b>	<b>Outsourcing admin &amp; Estate, Security</b>	4634.17
<b>13.</b>	<b>HEFA Interest paid</b>	1434.74
<b>GRAND TOTAL</b>		<b>80623.41</b>



## 8.4 Details of Other Account

### 8.4.1 General Corpus Fund

(Rs. in lakh)

Description	Amount
Opening Balance (Including FDR)	473,56.20
Receipts/Trfd from various A/c	62,68.93
Payments (Including loan)	25,62.64
<b>Closing Balance (Including FDR)</b>	<b>510,62.49</b>

### 8.4.2 Endowment Corpus Fund

(Rs. in lakh)

Description	Amount
Opening Balance (Including FDR)	80,97.11
Receipts/Trfd from various A/c	31,16.10
Payments (Including loan)	14,56.05
<b>Closing Balance (Including FDR)</b>	<b>97,57.16</b>

### 8.4.3 Donation Received (Rs. in lakh)

(Rs. in lakh)

Scheme/Programmes	Amount Received
Donation Received	24,99.07
<b>TOTAL</b>	<b>24,99.07</b>

### 8.4.4 Grant/Assistance Received from GOI

(Rs. in lakh)

Scheme/Programmes	Amount received
<b>STAC</b>	91.13
ICMR	21.35
EDCIL	4.70
DBT	29.13
Other	2.42
<b>TOTAL</b>	<b>148.73</b>



## Organisation



Prof. Kamal Kishore Pant  
Director



Prof. Udai Pratap Singh  
Deputy Director



Prof. D.S. Arya  
Dean, Administration



Prof. Rahul Dev Garg  
Dean, Resources and  
Alumni Affairs



Prof. Deepak Khare  
Dean, Finance &  
Planning Affairs



Prof. A.K. Sharma  
Dean, Faculty Affairs



Prof. Akshay Dvivedi  
Dean, Sponsored Research &  
Industrial Consultancy



Prof. Naveen Navani  
Dean, Academic Affairs



Prof. Barjeev Tyagi  
Dean, Students' Welfare



Prof. Umesh Kr. Sharma  
Dean, Infrastructure



Prof. Vimal Chandra Srivastava  
Dean, International Relations



Prof. Sujay Chattopadhyay  
Dean, Saharanpur Campus



Mr. Prashant Garg  
Registrar



Mr. G. K. Rastogi  
Finance Officer



## Head of Departments

- **Prof. Gaurav Raheja**  
Department of Architecture and Planning
- **Prof. Millie Pant**  
Department of Applied Mathematics and Scientific Computing
- **Prof. Pravindra Kumar (up to 31st Jan, 2024)**
- **Prof. Sanjay Ghosh (w.e.f. 1.02.2024)**  
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. G.N. Pillai (up to 01.05.2023)**
- **Prof. Mukesh Kumar Pathak (w.e.f. 02.05.2024)**  
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 Lanka up to 30th Sept.,2023**
- **Prof. Rajat Agarwal w.e.f. 1st Oct., 2023**  
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. G.D. Verma upto 1st May, 2023**
- **Prof. Vipul Rastogi (w.e.f. 02.05.2023)**  
Department of Physics
- **Prof. Ashish Pandey (up to 31st Jan., 2024)**
- **Prof. Thanga Raj Chelliah (w.e.f. 01.02.2024)**  
Department of Water Resources Development and Management



## Diversity and Inclusion Committee (DInC)

The Board of Governors at IITR, in its 64th meeting on 08/03/2022, resolved to establish the Diversity and Inclusion Committee (DInC) aimed at enriching the institution's culture and values, enhancing engagement across faculty, non-faculty, and students and attracting diverse talent. Comprising representatives from diverse departments, including faculty, non-faculty, technical and management professionals, and national and international student representatives, the committee operates under the motto "Fostering Excellence through Diversity and Inclusion." This initiative underscores IITR's commitment to creating an inclusive environment where every member's contribution is valued and celebrated. Through proactive efforts in fostering diversity and inclusion, the committee endeavours to cultivate an atmosphere of respect, understanding, and collaboration, thereby reinforcing the foundation of academic excellence and social cohesion within the institution.

During the academic year 2023-24, the Diversity and Inclusion Committee (DInC) at IIT Roorkee organised a series of engaging activities and awareness programs for the entire IITR community to foster a culture of diversity and inclusion. Here are the specifics:

- An orientation program on Diversity and Inclusion was conducted for undergraduate, postgraduate, and PhD students of IITR, emphasizing the importance of embracing differences and fostering inclusivity.
- The "Abhudhya" workshop cum lecture series, held on September 6, 2023, centered around the theme of diversity and inclusion. The event aimed to create an environment that celebrates diversity and ensures inclusivity at every level, empowering members to recognize their potential and collectively strive towards building a more inclusive society.
- DInC launched its website (<https://dinc.iitr.ac.in/>), serving as a central hub for resources, information, and initiatives dedicated to fostering a culture of belonging and understanding within the IITR community.
- A significant milestone was achieved on October 6, 2023, with the formulation of a comprehensive Diversity and Inclusion Policy by the Indian Institute of Technology Roorkee (IITR), demonstrating its commitment to promoting diversity and inclusivity on campus.
- During the National Social Summit 2024, DInC, in collaboration with NSS, organized a debate on increasing women representation in STEM fields, along with Model United Nations discussions on pertinent topics such as challenges and opportunities from the enlarging LGBTIQ+ community and fostering economic empowerment for women in developing nations.
- The Diversity and Inclusion Survey was rolled out to gather feedback from staff and students of IITR, aiming to identify opportunities for enhancing diversity and inclusivity on campus.
- A short video contest was organised on Human Rights Day, focusing on the theme "Freedom, Equality, and Justice for All," providing an avenue for the IITR community to express their perspectives on these fundamental values.
- DInC, in collaboration with AAO and NSS, organised a painting competition for school children, with the theme "Global Science for Global Wellbeing," promoting creativity and awareness among young minds.
- In association with the IPR CELL, DInC organised a workshop cum panel discussion on "Role Of Women In Sustainable Innovation" on International Women's Day, highlighting the contributions of women in driving sustainable innovation and fostering inclusivity in the field.



## Anushruti Academy for the Deaf

### Award Ceremony

**Aditya, Class-8      Rishit, Class-1      Vishu, Class-8**

On 3rd April 2023 Annual Report cards were distributed in the presence of chief guest Dr. Hema Pant (President, AAD), Prof. Navneet Arora (Manager, AAD) and other MC Members. They honoured the topper of each class. The Best Achiever Award Trophy was given to Ma. Aditya (Class-8). Along with a trophy, a cash prize of Rs. 5000/- **“AWARD OF EXCELLENCE”** was also given away by Dr. Hema Pant. This award was instituted by Prof. S.P. Gupta in the memory of his parents Smt. Kamala Devi and Sh. Madan Gopal Gupta. Another award **“RAJ & GEETA AWARD”** instituted by Prof. Pramod Agarwal & Dr. Sudhi Agarwal was given to two Meritorious students of class 1 & 8 named Ma. Rishit & Ma. Vishu. The prize money of this award is Rs. 2,000/- each.

### Construction



New Classrooms



Stage in Anushruti Auditorium



Construction in Progress

- Five new classrooms have been constructed at the first floor of AAD, two of these classrooms have been constructed under CSR project funding from THDC. The other 3 classrooms have been constructed under CSR project funding from DMI. AAD is grateful to THDC and DMI Pvt. Ltd. for this much needed addition.
- A full fledged stage has been constructed (courtesy IITR) in AADs multipurpose hall, called Anushruti Auditorium.
- The construction of six classrooms has started under Phase-I at the first floor from the grant received under CSR from National High Speed Rail Corporation Limited (NHSRCL).

### Hearing Testing Camp

On 23.06.2023, a free Hearing Testing Camp was organized for general public and held successfully by the team of AAD and Audiologist under the guidance of Dr. Sunali Vij Dhawan. Despite bad weather, the event was a great success where 26 persons were tested, diagnosed and counseled. AAD plans to conduct such camps at regular interval to serve the society and also to increase the awareness level for AAD and the facilities therein, including OAE and BERA which can test the hearing of even a new born baby.



## Visit of The Hon'ble Governor of Uttarakhand (Retd.) Lt. General Shri Gurmit Singh, PVSM, UVSM, AVSM, VSM

On 11.05.2023, Lieutenant General Shri Gurmit Singh, Hon'ble Governor of Uttarakhand, visited IIT Roorkee on the occasion of **"National Technology Day"** which was celebrated in the Multi Activity Center, IIT Roorkee. He was kind enough to pay a short visit to AAD. It was an honour and privilege to have him here with us. The dance performance by our students was greatly appreciated by the Hon'ble Governor and he was impressed with their efforts and hard work. That was a proud moment for all of us at Anushruti and we are thankful to our students for making us proud. The joy and excitement of our students

knew no bounds seeing large number of security personnels in uniform and some expressed wonder that even ladies are in police. The students were highly impressed seeing them all.



## Donors' Day (IITR)

On July 22, 2023, Donors' Day for our generous donors from IITR was celebrated in AAD. This event was organized to express appreciation and gratitude to the donors who consistently contribute to the school, supporting its smooth operation. Additionally, there are plans to extend the celebration of Donors Day to include other donors who have also been selflessly contributing to the betterment of our special school.



## Motivational Talk

On July 27, 2023, Ms. Tanya Rampal, a B.Tech graduate from IITR who is hearing-impaired, visited our school to meet with students and parents. She shared her personal journey and provided motivation to all in audience. It was a truly inspirational session, and her remarkable story served as a source of inspiration for many, particularly our hearing-impaired students. Ms. Rampal also pledged to maintain ongoing communication and offer assistance if required in the future.



## Visit to AAD

On July 28, 2023, Shri Dattatri Salagame, CEO of Bosch Software Technologies and the Chief Guest at the Convocation 2023 in IITR, paid a visit to AAD. During his visit, he was deeply impressed by the consistent dedication of both the students and teachers towards their goals. He also expressed a newfound appreciation for the value of abilities like listening and speaking that are often taken for granted. Mr. Salagame committed to maintaining contact and contributing to the best of his potential in support of AAD's initiatives.



## Visit of The Hon'ble Chief Minister of Uttarakhand Shri. Pushkar Singh Dhami Ji

On August 2, 2023, the Honorable Chief Minister of Uttarakhand, Shri. Pushkar Singh Dhami Ji, inaugurated the "G20 Impact Summit: Unleashing the Potentials" at IIT Roorkee. He graciously made a brief visit to AAD. It was a proud moment for everyone at Anushruti, and we extend our heartfelt gratitude to him for making this visit possible. The students were thrilled to see that the Chief Minister of Uttarakhand had visited the school.



## Special B.Ed. (HI) Practical Exam Conducted in AAD

On August 10, 2023, Dr. Siddharth Kumar Pokhriyal, Assistant Professor and Program Coordinator at the Department of Special Education, Uttarakhand Open University, Haldwani, conducted the B.Ed. Practical Exams at AAD. Six teachers from our school participated in these exams. Dr. Pokhriyal expressed his delight at organizing the exams at AAD and commended our hospitality. participated in the Independence Day celebrations and delivered outstanding performances at the lawns of the James Thomason building at IIT Roorkee.



## State Level Chess Competition

On August 20, 2023, a group of six senior students traveled to Dehradun to take part in the 9th Uttarakhand State Deaf Chess Championship. Their participation was not only a motivating experience but also earned them participation certificates from the Uttarakhand Sports Society of the Deaf. Engaging in such competitions plays a significant role in boosting their confidence and self-esteem, contributing to the development of their overall personalities.



## Visit

On September 6, 2023, Honorable Justice Ajay Bhanot from the Allahabad High Court paid a visit to Anushruti Academy for the Deaf. His visit left a profound impact as he witnessed the workings of this special school. Justice Bhanot and his wife devoted significant time to gain insights into the terminology used and the challenges encountered by the school in educating these special children. They also extended their commitment to maintain a lasting connection with the school, showing their dedication and support for the cause.



## International Sign Language Day

On September 23, 2023, a group of students and a few teachers from our school had the unique opportunity to participate in the International Sign Language Day event held at Dr. Bheem Rao Ambedkar Bhawan in New Delhi. During this event, they gained valuable insights into the significance of sign language for effective communication and pursuit of academic excellence. They also realized that Deaf individuals can attain their dreams and aspirations just as effectively as their hearing peers. Moreover, the students had the privilege of meeting several Deaf role models who served as a tremendous source of motivation. The event left them enthused and inspired to strive for their own aspirations. Besides the educational aspect, the students were also delighted to experience the remarkable infrastructure and cleanliness of the city of Delhi. This visit was a remarkable and eye-opening experience for all involved.



## Visit to Nepal

AAD's generous donor Mr. Anil Sharma, an IITR alumnus 1981 batch, kindly arranged participation of AAD students in the cultural program for an event "Hospitality and its Social Responsibility" organized by HI-Aim Conference Pvt. Ltd. Our team comprising the Principal Mrs. Vibhuuti Saini, teacher Mrs. Ruchi Tyagi, and four students named Sakib, Shivam, Shanky, and Shraddha was excited to travel to Kathmandu, Nepal to participate in event.

Our team had an exciting fun filled stay from 30.01.23 to 02.02.24, where they have interacted with the hearing impaired students, the teachers and Principal of the school Helping Hands at Kathmandu. It was a sweet challenge to prepare a dance program with a joint team of their and our students in such a short duration. However, the students, full of enthusiasm, responded very well. There was a mesmerizing performance, in the final program on 01.02.24, not only by the AAD team, but also by the joint team of the two schools. Following the event, Sh. Anil Kumar Sharma & Sh. Romesh Koul, Directors of HI-Aim Conference Pvt. Ltd., announced a generous donation of 1.25 lakh rupees to our school.



**ASMITA**, an acronym for A Skill Management, Improvement, and Training Academy for women, serves as a beacon of empowerment and progress. Here, women on campus embark on transformative journeys, forging pathways to economic independence by providing employment opportunities for underprivileged, fully skilled girls and women. Through meticulous skill enhancement initiatives, semi-skilled individuals are guided towards proficiency, while invaluable expertise in Stitching, Embroidery, and various crafts is imparted to the unskilled. ASMITA broadens its compassionate efforts by providing complimentary education to marginalized women, girls, and boys, nurturing notable advancements in both academic achievement and personal development. According to their school teachers, all children displayed remarkable progress, actively engaging in extracurricular activities and demonstrating increased vocalization and expressiveness.

The Adult Literacy Section has been hosting consistent classes since 2013, drawing a significant number of women aged between 30 and 50 years for fundamental literacy instruction. There has been a noticeable increase in women joining from different parts around the campus since the inception of the training program.

The Gift Section diversifies its offerings, crafting a range of items such as cushion covers, runners, bags, jewelry kits, and saree covers, along with the newly introduced painted coasters.

Within the Masala Section, an assortment of masala blends, including herbal colors for the Holi festival, are meticulously crafted and enjoy popularity both on and off the IIT campus. Likewise, the DOSA Batter section produces fresh DOSA Batter weekly, appreciated by customers for its superior quality and flavor.

Under the supervision of Dr. Abha Bhargava, a health assessment was conducted for all students in the Teaching Section, identifying any deficiencies and prompting customized interventions for holistic development. This inclusive strategy results in tangible enhancements across academic performance, hygiene standards, responsibility, and overall personality.

Generous donations, including contributions of Rs 8,06,000 from the 1981 batch and Rs 5,00,000 from the 1998 batch, have been allocated for infrastructure upgrades and enhanced amenities. Additionally, M/s

Indian Herbs has donated 10 sewing machines to support skill development.

ASMITA thus stands as a testament to the transformative potential that emerges when compassion and empowerment intersect.



## 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 is a group of volunteers working to promote education, environmental awareness, and economic empowerment in rural areas. They have launched various programs, such as an exploration tool program for young learners, sports activities, computer donation initiatives, and a digital literacy workshop. This year a few other initiatives have been taken which involves

- The team has also launched computer donation initiatives in three rural communities: Meerpur, Gopalpur, and Puranpur, bridging the gap between rural and urban education standards. They have provided guidance to twenty students during the Jawahar Navodaya Vidyalaya Selection Test in 2024, identifying a significant issue with children's access to education and initiating free education programs. They have also discovered a library gap at B.R. Ambedkar Inter College in Meerpur and partnered with the Study Uttarakhand Foundation to secure a diverse collection of books, enriching

learning resources and promoting intellectual exploration.

- The team has organized a science kit distribution and demonstration event in Beladi, Salhapur, and Gopalpur to spark curiosity and excitement for science among students in classes 9 and 10. The event showcased fascinating experiments such as electrical circuits, water indicators, light scattering, light bending through glass, electrolysis, and the elephant toothpaste experiment.
- The team has also launched a Digital Literacy Workshop in Gopalpur to empower students with the necessary skills to navigate and shape the ever-evolving landscape of technology. They have also introduced macrame, a textile art form, to Meerpur Village's Self-Help Groups (SHGs) to promote economic empowerment and financial independence.
- The team has also introduced Azolla, an aquatic fern, to address nutrient deficiency in fodder,

resulting in suboptimal milk yields. They have also launched the Jeevamrit initiative, a blend of traditional Indian biopesticide and organic manure, to provide immediate financial relief and long-term ecological benefits.

- The team has successfully cultivated 20 kilograms of Button Mushrooms in Beladi and Salhapur village, demonstrating the adaptability of mushrooms to local conditions and minimal space requirements, promoting sustainable farming and environmental conservation.
- The team has also organized an Eye Health Camp in Beladi, Gopalpur, Meerpur, and Rithaura to address the healthcare needs of underserved communities. They collaborated with PADWALA, a pad-making machine manufacturer, to ensure high-quality sanitary pads and streamline production. Lastly, the team has conducted career counseling sessions for 9th to 12th grade students in Meerpur, Beladi, and Rithaura to help them choose their academic streams.



## Finance Committee

<p><b>Padma Shri B.V.R. Mohan Reddy</b> Chairperson, Board of Governors, IIT Roorkee &amp; Executive Chairman, Cyient Limited Hyderabad</p>	Chairperson
<p><b>Prof. K.K. Pant</b> Director Indian Institute of Technology Roorkee</p>	Member
<p><b>Additional Secretary (TE)</b> Ministry of Education Government of India Department of Higher Education New Delhi</p>	Member
<p><b>Additional Secretary &amp; Financial Advisor</b> Ministry of Education Government of India Department of Higher Education New Delhi</p>	Member
<p><b>Principal Secretary to Government of Haryana</b> Technical Education Department Chandigarh</p>	Member
<p><b>Prof. U.P. Singh</b> Department of Chemistry Indian Institute of Technology Roorkee</p>	Member
<p><b>Dean, Finance &amp; Planning (Ex-Officio)</b> Indian Institute of Technology Roorkee</p>	Member
<p><b>Sri Prashant Garg</b> Registrar Indian Institute of Technology Roorkee</p>	Secretary



## Building & Works Committee

Prof. K.K. Pant Director Indian Institute of Technology Roorkee	Chairman
Prof. U.P. Singh Department of Chemistry Indian Institute of Technology Roorkee	Member
Dean, Infrastructure Indian Institute of Technology Roorkee	Member
Sri Surendra Singh 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
Prof. C.S.P Ojha Department of Civil Engineering Indian Institute of Technology Roorkee	Member
Prof. Akhil Upadhyay Department of Civil Engineering Indian Institute of Technology Roorkee	Member
Prof. Barjeev Tyagi Department of Electrical Engineering Indian Institute of Technology Roorkee	Member
Institute Engineer Indian Institute of Technology Roorkee	Member
Dean, Finance & Planning Indian Institute of Technology of Roorkee	Special Invitee
Sri Prashant Garg Registrar Indian Institute of Technology Roorkee	Secretary



## Administration / Officers (w.e.f. 01.04.2023 to 31.03.2024)

Chairman, Board of Governors	Shri B.V.R. Mohan Reddy
Director	Prof. Kamal Kishore Pant
Deputy Director	Prof. Udai Pratap Singh
Dean, Administration	Prof. D. S Arya
Dean, Faculty Affairs	Prof. Ashwani Kumar Sharma
Dean, Sponsored Research and Industrial Consultancy	Prof. Akshay Dvivedi
Dean, Academic Affairs	Prof. Apurbba Kumar Sharma
Dean of Students Welfare	Prof. M.K Barua (upto 31.08.2023) Prof. Barjeev Tyagi (w.e.f. 01.09.2023)
Dean, Finance & Planning	Prof. M.L. Sharma (upto 30.06.2023) Prof. Deepak Khare (w.e.f. 01.07.2023)
Dean, Resources and Alumni Affairs	Prof. B.R. Gurjar (upto 30.04.2023) Prof. R.D. Garg (w.e.f. 01.05.2023)
Dean, Infrastructure	Prof. U.K Sharma
Dean, International Relations	Prof. Vimal Chandra Srivastava
Dean, Saharanpur Campus	Prof. Sujay Chattopadhyay
Associate Dean Innovation and Incubation (ADII)	Prof. Rajat Agrawal (upto 30.06.2023) Prof. Vivek Kumar Malik (w.e.f. 01.7.2023)
Associate Dean Faculty Affairs	Prof. P. Sumathi (upto 31.10.2023) Prof. Anand Bulusu (w.e.f. 01.11.2023)
Associate, DoSW (Bhawans & Mess)	Prof. M.A Iqbal (upto 03.01.2024) Prof. Pradeep Kumar Jha (w.e.f. 04.01.2024)
Associate, DoSW (Students Wellness)	Dr. Avlokita Agarwal
Associate, DOSW (Students Activities)	Prof. M.V. Sunil Krishna
Assoc. Dean Corporate Interaction(ADCI)	Prof. Sai Ramudu Meka
Associate Dean, Infrastructure (Electrical & AC)	Prof. Anubrata Dey
Associate Dean, Infrastructure (Civil)	Prof. E. Rajasekar
ADOAA (IT Systems & Admission)	Prof. A. Swaminathan

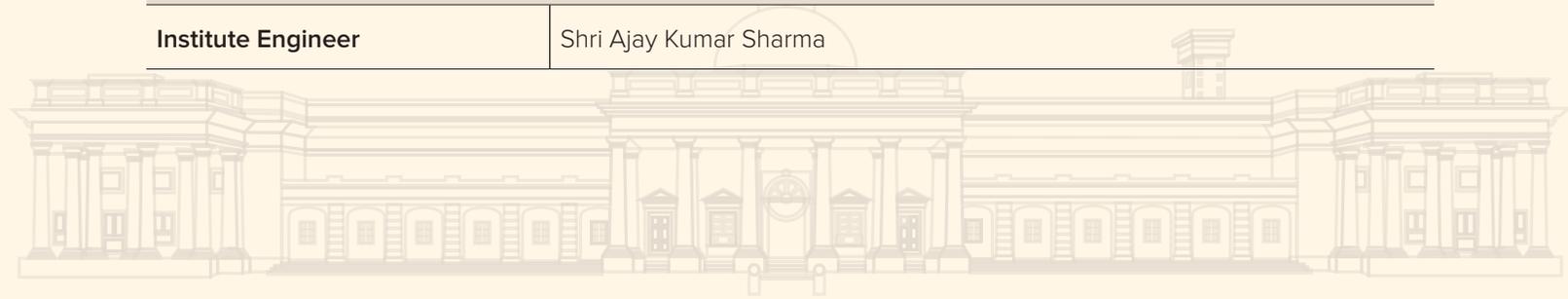


ADOAA (Curriculum)	Prof. C.N Ramachandran (upto 31.08.2023) Prof. Meenakshi Rawat (w.e.f. 01.09.2023)
ADOAA (Evaluation)	Prof. Bhavesh Bhalja (upto 31.08.2023) Prof. N. K. Navani (w.e.f. 01.09.2023)
Associate Dean Infrastructure (Projects)	Prof. P.C. Ashwin Kumar
Professor -in-Charge, Transportation	Prof. Sudhakar Subudhi
Professor-in-Charge, Training and Placement	Prof. Kaushik Pal
Professor-in-Charge, Guest House	Prof. Yogesh Kumar Sharma
Professor-in-Charge, Safety	Prof. Amit Dhiman
Professor-in-Charge, GNEC	Prof. Soumitra Satapathi
Professor-in-Charge, Archives	Prof. Ram Sateesh Pasupuleti
Professor-in-Charge, Security	Prof. A.S Maurya
Professor-in-Charge, STEP/TIDES	Prof. S.K. Manhas
Professor-in-Charge,	Prof. Gaurav Raheja (upto 24.02.2024)
Inclusion and Accessibility Services (IAS)	Prof. E. Rajasekar (w.e.f. 25.02.2024)
Coordinator, Intellectual Property Rights Cell	Prof. Rajat Agrawal (upto 30.06.2023) Prof. Vivek Kumar Malik (w.e.f. 01.7.2023)
Coordinator, Incubation Centre for Construction Technology in Building and Roads	Prof. Bhupinder Singh
Chairman, Hindi Cell	Prof. K.M Singh
Chief Vigilance Officer	Prof. Tanuja Srivastava
Liaison Officer for SC/ST	Prof. Prakash Biswas (upto 10.04.2023) Prof. Arindam Biswas (w.e.f. 11.04.2023)
Liaison Officer (OBC)	Prof. J.P. Narayan (upto 02.03.2024) Prof. Ram Jiwari (w.e.f. 03.03.2024)
Nodal Public grievance Officer for Centralized Public Grievance Redress and Monitoring System	Prof. C. S. P Ojha
Students' Ombudsperson	Prof. B.K. Mishra (upto 04.10.2023) Prof. Basheshwer Prasad (w.e.f. 05.10.2023)



## Administrative and Other Staff

<b>Registrar</b>	Shri Prashant Garg
<b>Finance Officer</b>	Shri G.K. Rastogi
<b>Joint Registrar</b>	Dr. Shyam Narayan Dr. Suman Kumar (On Lien at JNU, New Delhi)
<b>Joint Registrar</b>	Dr. Sheeba Ramola Shri Abhishek Kumar
<b>Dy Register</b>	Shri S.K. Jainth Shri Lokesh Verma Maj. (Retd.) Reeti Upadhyay Shri Manish Kumar Bhomia Shri Anbu R
<b>Assistant Registrar</b>	Shri Rajkumar Sharma Ms. Bibi M. Barbhuiya (On Deputation from 17.02.24 to 16.02.2027) Shri D.K. Toppo Shri Jain Singh Shri Lalit Kumar Shri Jitendra Dimri (On Lien from 12.06.23 to 11.06.2024) Shri B.S. Meena (On Lien from 15.02.24 to 14.02.2025) Dr. Manoj Bhatt Shri V. Vijayaraj Shri Mahavir Singh Shri Yashpal Shri Jyoti Gurung Smt. Chitra Maini Shri Aditya Chauhan Shri Mayank Pratap Singh Shri Deepanshu Shri Sahil Sardana Smt. Anita Chauhan Shri Lekhraj
<b>Institute Works Department</b>	
<b>Institute Engineer</b>	Shri Ajay Kumar Sharma



<b>Institute Architect</b>	Shri Bhavneesh Lal
<b>Executive Engineer</b>	Shri Nepal Singh Shri A.K. Barnwal Shri Trilok Nath Tiwari Shri Anshul Pal
<b>Assistant Executive Engineer</b>	Shri P.K. Dauhare Shri O.A. Verma (On Deputation from 12.08.23 to 11.08.2025) Shri N.S. Rana Shri Neeraj Shri Mayur Sharma Shri Jitendra Meena

#### **Mahatma Gandhi Central Library**

<b>Librarian</b>	Dr. C. Jayakumar
<b>Deputy Librarian</b>	Shri Sanjeev Kumar Sunny
<b>Assistant Librarian</b>	Shri A.K. Sharma Shri Ramniwas Soni Dr. Rimai Atonring Shri Sakhawat Hussain

#### **Hospital**

<b>Chief Medical Officer</b>	Dr. M.K Jha
<b>Institute Medical Officer</b>	Dr. (Smt.) Vandana Suhas Khobragade Dr. Rao Farman Khan Dr. Alok Anand
<b>General Duty Medical Officer</b>	Dr. Anant Choudhary Dr. Vibhu Sharma Dr. Vipin Kumar Dr. Ravi Kumar Gupta Dr. Shyamasri Chakraborty Dey Dr. G. Chandana Dr. Sadhana



## Chief Wardens & Wardens/Faculty Advisor

Azad Bhawan	Prof. Debasis Banerjee (ChW) Prof. Ritesh Kumar (W) Prof. Vishvendra Singh Poonia (Wel. W)
Cautley Bhawan	Prof. Tarun Sharma (ChW) Prof. Ashutosh Sharma (W) Prof. Pradeep Srivastava (Wel. W)
Ganga Bhawan	Prof. Ankik Kumar Giri (ChW) Prof. Gaurav Sharma (W) Prof. Pradeep Srivastava (Wel. W)
Govind Bhawan	Prof. Bishnu Prasad Das (ChW) Prof. Neetesh Kumar (W) Prof. P. Vinod (Wel. W)
Jawahar Bhawan	Prof. Ravindra Pandey (ChW) Prof. Basant Yadav (W) Prof. P. Vinod (Wel. W)
Kasturba Bhawan	Prof. Rishman Jot Kaur Chahal (ChW) Prof. Sarbani Banerjee (W) Prof. Shruti Sengupta (Wel. W)
Vigyan Bhawan (Girls)	Prof. Premlata Jena (ChW) Prof. Swastika Banerjee (W) Prof. Indra Gupta (Wel. W)
Vigyan Bhawan (Boys)	Prof. Manish K. Asthana (ChW) Prof. Ankit Agrawal (W) Prof. Vishvendra Singh Poonia (Wel. W)
Radha Krishnan Bhawan	Prof. Varun Sharma (ChW) Prof. Shubhajit Sadhukhan (W) Prof. Rhythm Singh (Wel. W)
Rajendra Bhawan	Prof. D. Bharat (ChW) Prof. S.P. Pradhan (W) Prof. Ashish Yadav (W) Prof. Pradeep Srivastava (Wel. W)



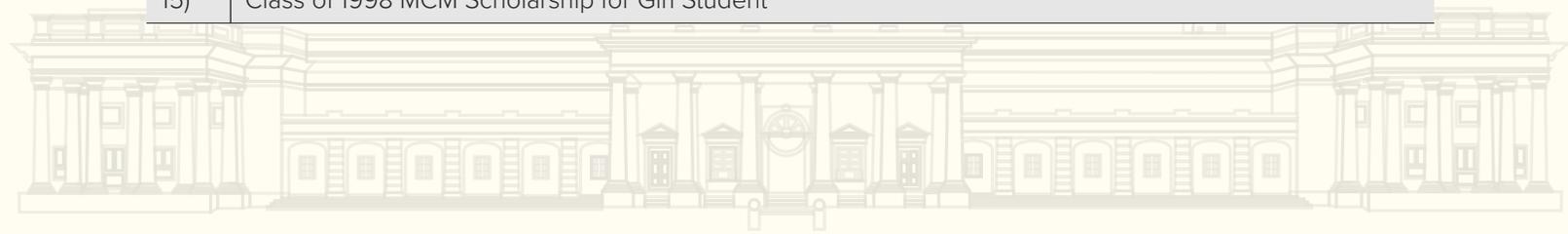
Rajiv Bhawan	Prof. Uaday Singh (ChW) Prof. Siddhartha Khare (W) Prof. Rhythm Singh (Wel. W)
Ravindra Bhawan	Prof. Akhilesh Kumar Mishra (ChW) Prof. Mohit Prakash Mohanty (W) Prof. P. Vinod (Wel. W)
Sarojini Bhawan	Prof. Harshit Sosan Lakra (ChW) Prof. Aparajita Singh (W) Prof. Shruti Sengupta (Wel. W)
Hingiri Apartments	Prof. Rakesh Ranjan
K.I.H., A.N.K. & Married Hostels (GP,MRC,DSB,Azad Wing & QRST Block, Vikas Nagar)	Prof. P. K. Sharma (ChW)
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. Ram Manohar Singh
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. Bhanu P. Vellanki
Nominee of Director	Prof. Sumit Yadav



## Institution of New Awards/Scholarships

The following awards/scholarship have been instituted with contributions from Alumni and Corporates to recognize and encourage the students to excel in various disciplines:

<b>A. Awards</b>	
1)	Smt. Kuldip Kaur Memorial Gold Medal
2)	Mrs. Chander Mohini Kapoor and Jeewan Kapoor Merit Prize
3)	D.K. Pradhan-U.N. Mishra Cash Prize
4)	Sesquicentennial (1997) Batch Scholarship for Academic Excellence
5)	Sesquicentennial (1997) Batch Silver Jubilee Award for Excellence in Sports
6)	Krishan Gopal Garg Awards
7)	Smt. Santosh Rani Tandon Memorial Award
8)	Bagchi Prize for Environmental Sustainability
9)	Shreyas Kumar Class of 1998 Gold Medal
10)	Class of '98 Tejwani Gold Medal
11)	Shri Azad Mohan Agarwal Gold Medal
12)	Kunal Kaushal Award for All-round Excellence
<b>B. Scholarships</b>	
1)	Major Gautam Sanyal MCM Scholarship
2)	Pandit Sohan Lal and Smt. Godavari Devi Kukreti MCM Scholarship
3)	Shri Mahabir Singh MCM Scholarship
4)	Er. Shyam Lal Goel MCM Scholarship
5)	Vimal Preet Singh Kohli MCM Scholarship
6)	Beeta Conveyors MCM Scholarship
7)	Er JP Shukla MCM Scholarship
8)	Smt. Darshan Narang Memorial MCM Scholarship
9)	Mrs. Kanta Nirmla-Tirlochand Garg Memorial MCM Scholarship
10)	Horiba Talent Hunt Scholarship
11)	Satya Sharma MCM Scholarship
12)	Class of 1998 MCM Scholarship
13)	Dr. Chand Bala, Ph.D. 1981 Memorial MCM Scholarship
14)	B.Arch. 1999 Manish Shangari Memorial MCM Scholarship
15)	Class of 1998 MCM Scholarship for Girl Student



16)	Class of 1998 MCM Scholarship for Civil Engineering Department
17)	Class of 1998 Sachin Gaur Memorial MCM Scholarship
18)	Class of 1998 Punjab Singh Memorial MCM Scholarship
19)	Class of 1998 Kartikaye Chandrayana MCM Scholarship
20)	Class of 1998 MCM Scholarship for Metallurgy and Materials Engineering Department
21)	Class of 1998 MCM Scholarship for Electronics and Communication Engineering Department
22)	Class of 1998 MCM Scholarship for Electrical Engineering Department
23)	Class of 1998 Rahul Shukla Memorial MCM Scholarship
24)	Class of 1998 Vikas Chandra Memorial MCM Scholarship
25)	Class of 1998 Shyam Singh Memorial MCM Scholarship
26)	1968 Batch Civil Engineering MCM Scholarship
27)	1968 Batch Mechanical and Industrial Engineering MCM Scholarship
28)	1968 Batch Electrical Engineering MCM Scholarship



## Appendix 2 – Awards to Students

### Medals and Awards (AY 2023-24)

S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
1	<b>President Gold Medal</b>	for securing the highest CGPA amongst the B.Tech./ B.Arch./ IDD/ Int. M.Sc./ Int. M.Tech. graduating students admitted through JEE (Advanced).	ARYAN JAIN	B.Tech. Computer Science & Engineering
2	<b>Dr. A.N. Khosla Medal</b>	for securing the highest CGPA amongst the graduating B.Tech. students.		
3	<b>Rai Bahadur Sohan Lal Bhatia Cash Prize</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Computer Science and Engineering).		
4	<b>Director Gold Medal</b>	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).	ATHARVA KARANJGAOKAR	B.Tech. Mechanical Engineering
5	<b>The President of India Dr. Shankar Dayal Sharma Gold Medal</b>	for the excellence in the field of Social Service amongst graduating UG/PG students.	KAVYA SAXENA	B.Tech. Production and Industrial Engineering
6	<b>Anand Kumar Jain Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Production and Industrial Engineering).		
7	<b>Best Project Award</b>	for the best project amongst the graduating B.Tech. students of Department of Mechanical and Industrial Engineering.		
8	<b>Institute Silver Medal</b>	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).	MOHIT KUMAR	IDD-B.Tech. (Computer Science and Engineering) and M.Tech. (Computer Science and Engineering)
9	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Computer Science and Engineering.		
10	<b>Institute Bronze Medal</b>	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).	PRERNA KUMAR	B.Tech. (Computer Science and Engineering)
11	<b>Smt. Rama Devi Krishna Bhatnagar Cash Prize</b>	for obtaining the highest CGPA amongst the graduating girl students of all B.Tech. programmes.		

S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
12	<b>Smt. Chandravati Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Arch.	Kubadia Drupkumar	Bachelor of Architecture
13	<b>Smt. Kailash Kambo Award</b>	for securing the highest CGPA amongst the graduating students of B.Arch.	Vijaykumar	
14	<b>Everest Award of Excellence</b>	for securing the highest CGPA amongst the B.Arch. graduating students.		
15	<b>Best Project Award</b>	for best project amongst the graduating students of B.Arch.	MANAS GANESH AVINASHE	Bachelor of Architecture
16	<b>Mrs. Mavis Bertha Wilkinson Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Biotechnology).	ADITI KOTHIALA	B.Tech. Biotechnology
17	<b>Best Project Award</b>	for best project amongst the graduating students of B.Tech. (Biotechnology).		
18	<b>Prof. Ranvir Singh Shastri Cash Prize</b>	for securing the second highest CGPA amongst the graduating girl students of all B.Tech. programmes.		
19	<b>Kapil Garg Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Chemical Engineering).	NAITIK JAIN	B.Tech. Chemical Engineering
20	<b>Prem Prakash Gupta Cash Prize</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Chemical Engineering).		
21	<b>Singhal's Tech for Society Award</b>	for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.	ATUL SINGH	B.Tech. Chemical Engineering
22	<b>Singhal's Tech for Society Award</b>	for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.	JOGESH GURJAR	B.Tech. Chemical Engineering
23	<b>Singhal's Tech for Society Award</b>	for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.	NAGENDRA SINGH RAJPUT	B.Tech. Chemical Engineering
24	<b>Singhal's Tech for Society Award</b>	for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.	NIPUN AGGARWAL	B.Tech. Chemical Engineering
25	<b>Singhal's Tech for Society Award</b>	for meaningful, relevant, innovative, impactful and commercially viable project as a part of the final year curriculum amongst the graduating B.Tech. students.	VISHAL TRIPATHI	B.Tech. Chemical Engineering



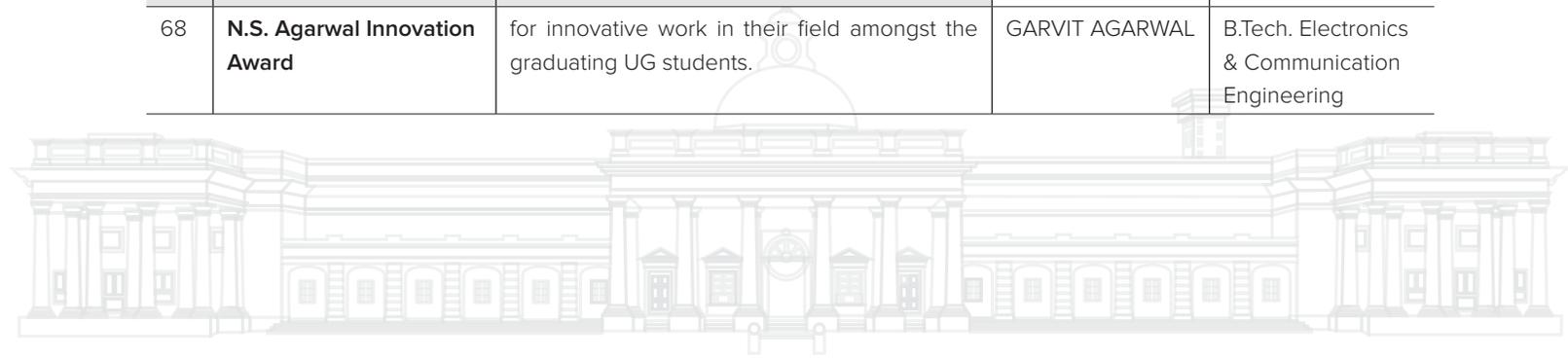
S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
26	<b>Best Project Award</b>	for best project amongst the graduating B.Tech. students of Department of Chemical Engineering.	YAVNIKA GARG	B.Tech. Chemical Engineering
27	<b>Professional Development and Innovation Award</b>	for the Innovative project in the final year amongst the graduating UG and PG students of engineering/architecture under the category of Best Women Innovator.		
28	<b>Manmohan Das Seth Department Gold Medal</b>	for Securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).	ANURAJ SAXENA	B.Tech. Civil Engineering
29	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).		
30	<b>Kedar Nath Agarwala, I.S.E Memorial Trophy and Cash Award</b>	for academic excellence and outstanding community service amongst the graduating UG/PG students.		
31	<b>Prabhakar Swarup Civil Engineering Award</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).		
32	<b>Prof. C.L. Toshniwal Award in Civil Engineering</b>	for securing the highest marks in the compulsory courses of Environmental Engineering amongst the graduating students of B.Tech. (Civil Engineering).		
33	<b>Shri Shiv Nandan Swaroop and Avadh Narayan Bhatnagar Cash Prize</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).		
34	<b>Madhusudan Dayal Mithal Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).		
35	<b>Rai Bahadur Sohan Lal Bhatia Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).		
36	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	AMIT KUMAR	B.Tech. Civil Engineering
37	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANGEL MEHTA	B.Tech. Civil Engineering
38	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANIRUDH VERMA	B.Tech. Civil Engineering
39	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANKIT KUMAR GUPTA	B.Tech. Civil Engineering
40	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANSHUL SACHDEVA	B.Tech. Civil Engineering



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
41	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANSHUL SAINI	B.Tech. Civil Engineering
42	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANUP	B.Tech. Civil Engineering
43	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANURAG YADAV	B.Tech. Civil Engineering
44	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	APOORVA KAUSHIK	B.Tech. Civil Engineering
45	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ARCHANA KUMARI	B.Tech. Civil Engineering
46	<b>Rural India Technology Based Upliftment (RITU) Excellence Award</b>	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.	HARSH KUMAR	B.Tech. Civil Engineering
47	<b>Vinay Krishna Cash Prize</b>	for securing the second highest CGPA amongst the graduating students of B.Tech. (Civil Engineering).	VARUN MISHRA	B.Tech. Civil Engineering
48	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Computer Science and Engineering).	DIVYANSH AGARWAL	B.Tech. Computer Science and Engineering
49	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Computer Science and Engineering).	MD JUNAID MAHMOOD	B.Tech. Computer Science and Engineering
50	<b>Professional Development and Innovation Award</b>	for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.	KEERTHANA NUTI	B.Tech. Computer Science and Engineering
51	<b>Professional Development and Innovation Award</b>	for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.	SHASHANK AITAL	B.Tech. Computer Science and Engineering
52	<b>Professional Development and Innovation Award</b>	for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.	SHREYAS DODAMANI	B.Tech. Computer Science and Engineering
53	<b>Smt. Sukh Devi Kulshreshtha Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Electrical Engineering).	SAKSHAM SINGHAL	B.Tech. Electrical Engineering
54	<b>N.S. Agarwal Innovation Award</b>	for innovative work in their field amongst the graduating UG students.		



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
55	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Electrical Engineering).	ANCHIT PROCH	B.Tech. Electrical Engineering
56	<b>Professional Development and Innovation Award</b>	for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.	ADITYA SHARMA	B.Tech. Electrical Engineering
57	<b>Professional Development &amp; Innovation Award</b>	for Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Judges' Choice.	VATSAL DIXIT	B.Tech. Electrical Engineering
58	<b>N.S. Agarwal Innovation Award</b>	for innovative work in their field amongst the graduating UG students.	ABHISHEK SARONIYA	B.Tech. Electrical Engineering
59	<b>N.S. Agarwal Innovation Award</b>	for innovative work in their field amongst the graduating UG students.	AGRIM AGRAWAL	B.Tech. Electrical Engineering
60	<b>N.S. Agarwal Innovation Award</b>	for innovative work in their field amongst the graduating UG students.	SUTHAR NISARG MANISHBHAI	B.Tech. Electrical Engineering
61	<b>Air Cmdr S.C. Mehra Scholarship</b>	for securing the highest CGPA amongst the graduating female students of B.Tech. (Electrical Engineering).	DHRITI GUPTA	B.Tech. Electrical Engineering
62	<b>Om Bala Thapar Cash Prize</b>	for best all-round performance amongst the graduating UG girl students.	S SHANMATHI	B.Tech. Electrical Engineering
63	<b>Shri Hari Chand Nagalia Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Electronics and Communication Engineering).	VISHU SAXENA	B.Tech. Electronics & Communication Engineering
64	<b>Best Project Award</b>	for the Best project amongst the graduating students of B.Tech. (Electronics and Communication Engineering).		
65	<b>Professional Development &amp; Innovation Award</b>	for the Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Best Innovation.		
66	<b>Best Project Award</b>	for the Best project amongst the graduating students of B.Tech. (Electronics and Communication Engineering).	YASH JAIN	B.Tech. Electronics & Communication Engineering
67	<b>Professional Development &amp; Innovation Award</b>	for the Innovative project in the final year amongst the graduating UG students of engineering/architecture under the category of Best Innovation.		
68	<b>N.S. Agarwal Innovation Award</b>	for innovative work in their field amongst the graduating UG students.	GARVIT AGARWAL	B.Tech. Electronics & Communication Engineering



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
69	<b>N.S. Agarwal Innovation Award</b>	for innovative work in their field amongst the graduating UG students.	SANJANA NARAYAN	B.Tech. Electronics & Communication Engineering
70	<b>Smt. Kaushalya Arya Cash Prize</b>	for the excellent overall performance amongst the B.Tech./ B.Arch. graduating female students.	TANYA RAMPAL	B.Tech. Electronics & Communication Engineering
71	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Engineering Physics).	ANAND CHOUDHARY	B.Tech. (Engineering Physics)
72	<b>Best Project Award</b>	for the Best project amongst the graduating students of B.Tech. (Engineering Physics).		
73	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Mechanical Engineering).	EESH GUJRANIA	B.Tech. Mechanical Engineering
74	<b>Best Project Award</b>	for the best project amongst the graduating B.Tech. students of Department of Mechanical & Industrial Engineering.	KRITIN R. AGRAWAL	B.Tech. Mechanical Engineering
75	<b>P.K. Kapse Award to Medhavi Girl</b>	for obtaining the highest CGPA amongst the graduating girl students of B.Tech. (Mechanical Engineering).	ASHANA SHARAN	B.Tech. Mechanical Engineering
76	<b>Best Project Award</b>	for the best project amongst the graduating B.Tech. students of Department of Mechanical & Industrial Engineering.	RUTHIK KANTILAL JADHAV	B.Tech. Production & Industrial Engineering
77	<b>Best Project Award</b>	for the best project amongst the graduating B.Tech. students of Department of Mechanical & Industrial Engineering.	VAIBHAV SAINI	B.Tech. Production & Industrial Engineering
78	<b>Frau Gertrude Felden Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Metallurgical and Materials Engineering).	RACHERLA GEETIKA	B.Tech. Metallurgical & Materials Engineering
79	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Metallurgical and Materials Engineering).	DHARAMSOTHU VENU	B.Tech. Metallurgical & Materials Engineering
80	<b>Hari Krishna Mittal Leadership Award</b>	for the significant contribution towards enhancing the entrepreneurship culture at IIT Roorkee amongst the graduating UG/PG (including Ph.D.) students.	ADITYA BIPINCHANDRA GITE	B.Tech. Metallurgical and Materials Engineering
81	<b>Sarojini Naidu Cup</b>	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).	AISHWARYA	B.Tech. Metallurgical and Materials Engineering



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
82	<b>Department Gold Medal</b>	Medal for securing the highest CGPA amongst the graduating students of B.Tech. (Polymer Science and Engineering).	MEDA RADHEESH SHARMA	B. Tech. Polymer Science & Engineering
83	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Polymer Science and Engineering).		
84	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Integrated M.Sc. Chemistry.	SHIVAM MISHRA	Integrated M.Sc. Chemistry
85	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Integrated M.Sc. Applied Mathematics.	VINIT GUPTA	Integrated M.Sc. Applied Mathematics
86	<b>Best Project Award</b>	for the best project amongst the graduating students of Integrated M.Sc. Applied Mathematics.	AARUSHI VIJ	Integrated M.Sc. Applied Mathematics
87	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Integrated M.Sc. Physics.	VANSHAJ KERNI	Integrated M.Sc. Physics
88	<b>Best Project Award</b>	for the best project amongst the graduating students of Integrated M.Sc. Physics.	PARTH BAHUGUNA	Integrated M.Sc. Physics
89	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Integrated M.Tech. Geological Technology.	YASH SANJAY KUTE	Integrated M.Tech. Geological Technology
90	<b>Best Project Award</b>	for best project amongst the graduating students of Integrated M.Tech. Geological Technology.		
91	<b>Frau Odillie Schiffer Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Integrated M.Tech. Geophysical Technology.	AKSHAY VIJAY KAMATH	Integrated M.Tech. Geophysical Technology
92	<b>Best Project Award</b>	for the best project amongst the graduating students of Integrated M.Tech. Geophysical Technology.		
93	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Master of Urban and Rural Planning.	KRITIKA SHARMA	Master of Urban and Rural Planning
94	<b>Smt. Kailash Kambo Award</b>	for securing the highest CGPA amongst the graduating students of M.U.R.P.		
95	<b>Smt. Kailash Kambo Award</b>	for securing the highest CGPA amongst the graduating students of M.Arch.	MANSI SOOD	Master of Architecture



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
96	<b>Br. C. Selvam and Mrs. X. Espirith Selvam Award</b>	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.	DIBYANK DARSHI	Master of Urban and Rural Planning
97	<b>MEENAKSHI POWER AWARD</b>	for securing the highest CGPA amongst the graduating female students of M.Tech. Alternate Hydro Energy Systems).	KM SWAPNIL SINGH	M.Tech. Alternate Hydro Energy Systems
98	<b>BSHPC Cash Prize</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Alternate Hydro Energy Systems.	PAGADALA SUKHANTH BABU	M.Tech. Alternate Hydro Energy Systems
99	<b>Electrosteel Award Cash Prize</b>	for the best dissertation amongst the graduating students of M.Tech. (Alternate Hydro Energy Systems).	SACHIN AGGARWAL	M.Tech. Alternate Hydro Energy Systems
100	<b>A.K. Goel Hydropower Award</b>	for the best dissertation in Hydropower subject amongst the graduating students of Department of Hydro and Renewable Energy.	SRISHA GUPTA	M.Tech. Alternate Hydro Energy Systems
101	<b>Electrosteel Award Cash Prize</b>	for the best dissertation amongst the graduating students of M.Tech. (Environment Management of Rivers and Lakes).	IRAM NAAZ	M.Tech. Environmental Management of Rivers and Lakes
102	<b>MEENAKSHI POWER AWARD</b>	for securing the highest CGPA amongst the graduating female students of M.Tech. Environment Management of Rivers and Lakes.	POOJA CHOUDHARY	M.Tech. Environmental Management of Rivers and Lakes
103	<b>Chhattisgarh State Power Generation Corporation Hydro Award</b>	for securing the highest CGPA amongst the graduating students of M.Tech. (Environment Management of Rivers and Lakes).	VAIBHAV BISLA	M.Tech. Environmental Management of Rivers and Lakes
104	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Biosciences and Bioengineering.	SHUBHALI SINGH	M.Tech. Bioprocess Engineering
105	<b>Smt. Prem Lata Nagalia Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Chemical Engineering.	SAMIKSHA	M.Tech. Chemical Engineering
106	<b>Shri Suresh Chandra Kapoor Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Civil Engineering.	AASHUTOSH GARG	M.Tech. Environmental Engineering
107	<b>Prof. C.L. Toshniwal Award in Environmental Engineering</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Environmental Engineering.		



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
108	<b>Amba Prasad - Kalawati Memorial Cash Prize</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Geomatics Engineering.	THOTA VIJAYA KUMAR	M.Tech. Geomatics Engineering
109	<b>Tara Chand Kanti Devi Cash Prize</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Geotechnical Engineering.	AJAY DWIVEDI	M.Tech. Geotechnical Engineering
110	<b>Sunita Bahadur Memorial Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Civil Engineering with specialization in Transportation Engineering.	MANISH KUMAR YADAV	M.Tech. Transportation Engineering
111	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Masters in Innovation Management programme of Department of Design.	AMOL PRASAD SHARMA	Masters in Innovation Management
112	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Centre of Excellence in Disaster Mitigation and Management.	KALE ANURAG ANIL	M.Tech. Disaster Mitigation and Management
113	<b>Smt. Lalit Kishori Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Earthquake Engineering.	WASIM AHMAD	M.Tech. Structural Dynamics
114	<b>The Indian Service of Engineers Cash Prize</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Structural Dynamics.		
115	<b>The Indian Service of Engineers Cash Prize</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Soil Dynamics.	TANYA MALVI	M.Tech. Soil Dynamics
116	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electrical Engineering.	ROSHAN SAHU	M.Tech. System and Control
117	<b>Shri Bishwanath Bhattacharya Memorial Award</b>	for Best dissertation/thesis work amongst the graduating students of M.Tech. and Dual Degree programmes of Department of Electrical Engineering.		
118	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electrical Engineering.	KUNAL PANWAR	M.Tech. System and Control
119	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electronics and Communication Engineering.	SOURABH KUMAR SHARMA	M.Tech. RF and Microwave Engineering



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
120	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Hydrology.	ABHISHEK SHUKLA	M.Tech. Dam Safety and Rehabilitation
121	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Mechanical and Industrial Engineering.	SAURABH KUKRETI	M.Tech. Thermal Engineering
122	<b>Prof. Kumkum Garg Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Mehta Family School of Data Science and Artificial Intelligence.	PANDYA RONAK MANISHBHAI	M.Tech. Data Science
123	<b>Mrs. Chander Mohini Kapoor And Jeewan Kapoor Merit Prize</b>	for obtaining the highest CGPA amongst the graduating students of M.Tech. Data Science.		
124	<b>Professional Development &amp; Innovation Award</b>	for innovative project in the final year amongst the graduating PG students of engineering/architecture under the category of Judges' Choice.	M KRISHNA CHAITANYA	M.Tech. Artificial Intelligence
125	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Metallurgical and Materials Engineering.	DIVYA SHARMA	M.Tech. Materials Engineering
126	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Paper Technology.	KAUSTUBH SHARMA	M.Tech. Packaging Technology
127	<b>Shyam S. Biyani Cash Award</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Packaging Technology.		
128	<b>Professional Development &amp; Innovation Award</b>	for the Innovative project in the final year amongst the graduating PG students of engineering/architecture under the category of Best Innovation.	PRAVEEN KUMAR KUNAM	M.Tech. Pulp and Paper Engineering
129	<b>Shri Ravi Mohan Mangal Cash Prize</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Infrastructure Systems of Centre for Transportation Systems.	JATOTH JAI KUMAR RATHOD	M.Tech. Infrastructure Systems
130	<b>S.K. Kumar Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Water Resources Development and Management.	PIYUSH KUMAR	M.Tech. Irrigation Water Management
131	<b>Dr. A.N. Khosla Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Water Resources Development and Management.		



S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
132	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Earth Sciences.	SIMRAN GULERIYA	M.Sc. Applied Geology
133	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Chemistry.	ISHA	M.Sc. Chemistry
134	<b>Dr. Hari G. Garg Cash Prize</b>	for securing the highest CGPA amongst the graduating students of M.Sc. Chemistry.		
135	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Humanities and Social Sciences	RISHABH GUPTA	M.Sc. Economics
136	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Mathematics.	NIKITA	M.Sc. Mathematics
137	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Physics.	KRISHAN JOSHI,	M.Sc. Physics
138	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Sc. programme of Department of Bioscience & Bioengineering.	HARDIK GARG	M.Sc. Biotechnology
139	<b>Dr. A.N. Khosla Medal</b>	for securing the highest CGPA amongst the graduating students of M.Sc./ M.Tech. (Science) programmes.		
140	<b>Excellence in Doctoral Research Award</b>	for outstanding Ph.D. work in Engineering Stream under the category of Applied Research.	PRAKHAR DIXIT	Ph.D. Department of Polymer and Process Engineering
141	<b>Dr. Sushil Sharma Excellence in Doctoral Research Award</b>	for outstanding Ph.D. work in Science Stream under the category of Applied Research.	MANISHA MALIK	Ph.D. Department of Mathematics
142	<b>Excellence in Doctoral Research Award</b>	for outstanding Ph.D. work in Engineering Stream under the category of Fundamental Research.	SHWETA TRIPATHI	Ph.D. Department of Biosciences and Bioengineering
143	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANKIT BABU	B.Tech. Civil Engineering
144	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Civil Engineering).	ANUPRIYA	B.Tech. Civil Engineering
145	<b>Best Project Award</b>	for the best project amongst the graduating students of B.Tech. (Computer Science and Engineering).	PRANAW RAJ	B.Tech. Computer Science and Engineering
146	<b>Dr. A.S. Arya Cash Prize</b>	for excellent overall performance amongst the B.Tech./ B.Arch. graduating male students.	SARTHAK SHARMA	B.Tech. Mechanical Engineering

S. No.	Name of Award	Criteria of Award	Name of Awardee	Name of Programme
147	<b>Vidya Dutt Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of B.Tech. (Mechanical Engineering).	AYUSH KUMAR DIXIT	IDD-B.Tech. (Mechanical Engineering) and M.Tech. (Thermal Engineering)
148	<b>Best Project Award</b>	for the best project amongst the graduating students of Integrated M.Sc. Chemistry.	PEDDAPOTHULA SAHITHI PRIYA	Integrated M.Sc. Chemistry
149	<b>Mr. Bevan Ross Wilkinson Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Electrical Engineering.	GULLAPALLI TEJDEEP	M.Tech. Electric Drives and Power Electronics
150	<b>Professional Development &amp; Innovation Award</b>	for innovative project in the final year amongst the graduating UG and PG students of engineering/architecture under the category of Best Overseas Innovator.	LOKMAN HAKIM	M.Tech. Packaging Technology
151	<b>G.M. Singhvi Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of Master of Business Administration.	SPARSH WADHWA	Master of Business Administration
152	<b>Chhattisgarh State Power Generation Corporation Hydro Award</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Alternate Hydro Energy Systems.	AHZAM SHAKEEL	M.Tech. Alternate Hydro Energy Systems
153	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M. Des. programme of Department of Design.	PRATYAY BANERJEE	M.Des. Industrial Design
154	<b>Department Gold Medal</b>	for securing the highest CGPA amongst the graduating students of M.Tech. programme(s) of Department of Polymer and Process Engineering.	MAYANK GAUTAM	M.Tech. Polymer Science & Engineering
155	<b>Shyam S. Biyani Cash Award</b>	for securing the highest CGPA amongst the graduating students of M.Tech. Polymer Science and Engineering.		









## Indian Institute of Technology Roorkee

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