



DEPARTMENT OF CIVIL ENGINEERING

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE ROORKEE - 247 667 (UTTARAKHAND) INDIA

E-Newsletter

Jul-Dec 2024

FROM THE HoD's DESK



Dear All,

It gives me immense pleasure to present the July-December 2024 issue of our Department's newsletter as we step into the New Year. This publication celebrates the remarkable achievements and contributions of our community—faculty, students, and alumni alike—over the past six months. As we enter 2025, let us remain focused on pushing boundaries, fostering collaboration, and inspiring the next generation of engineers. Together, we will continue to uphold our tradition of excellence, contributing to both national and global challenges with integrity and vision.

NGINEERIN

Website: <u>https://civil.iitr.ac.in</u> E-mail: head@ce.iitr.ac.in **C+91-1332-285219** Thanks Prof. Praveen Kumar

ACHIEVEMENTS IN BRIEF

- 1.11 numbers of Research Projects were sanctioned at a total cost of ₹ 1213.47 Lacs.
- 2. A total of 30 students were awarded their Ph.D. degrees.
- 3. Faculties have published 92 Research Publications in peer-reviewed journals.
- 4.349 numbers of Consultancy projects from various government agencies and private organizations were carried out at a total cost of ₹3310.92 Lacs
- 5. 2 new faculty members have joined the department as Assistant Professor.

AWARDS AND RECOGNITIONS (FACULTY)



Prof. P. K. Garg, Emeritus Professor, was awarded the "National Geospatial Faculty Fellow Award" by IIT Bombay FOSSEE-GIS (National Mission on Education through ICT, Ministry of Education, Government of India) on Sept 15, 2024.

- Prof. Satish Chandra, participated in 10th Conference on Transportation System Engineering and Management, VNIT NAgpur, July 10, 2024.
- Invited as the Guest of Honour by SVNIT Surat during on-line launch of their new traffic data set portal SHIV-NATRAJ on October 09, 2024.



- **Prof. C. S. P. Ojha,** delivered a Keynote Lecture "Impact of Deforestation on Himalayan Watersheds", KSCSTE- Kerala Forest Research Institute, Kerala India, July 9, 2024.
- Appointed as Member, Board of Evaluation (BoE) for National Institute Geo-Informatics, Science and Technology (NIGST), Hyderabad, June 2024.
- Chairman, Panel Discussion and Chief Guest in Workshop on Mahanadi River Basin Management (MRBM) NIT Rourkela, Nov 5-9, 2024. Also, delivered a Keynote Lecture on Translating Experiences of Himalayan River System to Mahanadi River System Nov 9, 2024.
- Convener of Sectional Committee-I (Civil Engineering) of Indian National Academy of Engineering for the year 2025.
- Prof. N. K. Samadhiya, received the IGS Kueckelmann Award, 2024.
 Award carries a cash prize of Rs. 30,000/- along with the presentation of plaque and citation.
- Received 2nd Prize in "Best EBM of the year 2023" award based on contribution to the Indian Geotechnical Journal. The Award carries a book voucher from Springer and a certificate.



- Received the IGS-Z-Tech Biennial Award for "Behavior of Loose Geogrid Skirted Square Footing Resting on Reinforced Sand Subjected to Eccentric and Inclined Loading" by B. Kirtimayee and Narendra Kumar Samadhiya published in Indian Geotechnical Journal, Vol. 52, Issue 4, August 2022 (pp. 895-906) is adjudged as the best paper on "Geosynthetics and Allied Construction Products" published through Indian Geotechnical Society.
- Delivered a keynote lecture on 3D Finite Element Analysis of Coupled Stress-Flow in Jointed Rock
 Masses.
- Guest Editor of special issue on IGC-2023 Keynote/ theme lecture of Indian Geotechnical Journal



Prof. Mahendra Singh, Organised as Chairman, Scientific Committee: ISRM International Symposium 2024 & 13th Asian Rock Mechanics Symposium (ARMS13): "Advances in Rock Mechanics - Infrastructure Development"; 22-27 September, 2024; New Delhi, India. • Delivered key Note lecture "Assessment of safe vertical cut height for rock slopes in Garhwal Himalayas" during Indian Geotechnical Conference, IGC-2024; Dec 19-21, Aurangabad.



Prof. Manoranjan Parida, Director, CSIR-CRRI elected as President, Indian Roads Congress. Prof. Parida, has taken over as President of Indian Roads Congress during the 83rd Annual Session of IRC which was organised at Raipur during November 8-12, 2024.

Prof. Rajat Rastogi delivered a lecture titled "Land Use and Transportation: A Step Forward – Evaluating Sustainable Transportation" in the Workshop on Land Use and Transportation Planning held at IIT Bombay, India on August 5, 2024.





Prof. Umesh Kumar Sharma presented an invited paper titled "Structural Condition Assessment and Repair Strategies for Industrial Plant Buildings Affected by Fire and Blast Incidents: A Case Study in Maharashtra, India" at the 4th International Conference on Structural Safety Under Fire & Blast Loading (CONFAB 2024), held in London, UK, on September 9–10, 2024.

Prof. V. A. Sawant was awarded the **Best Presentation Award** in the Conference on 'Geotechnical Practices towards Sustainable Infrastructure GEOPRACTICES 2024' at IIT Hyderabad, October 4-5, 2024 for Paper by J Yamini, V A Sawant and A Mishra.



Prof. R. D. Garg was awarded the "**National Geospatial Faculty Fellow Award**" by IIT Bombay FOSSEE-GIS (National Mission on Education through ICT, Ministry of Education, Government of India) on Sept 15, 2024.

- **Prof. Amit Agarwal** received a Travel Grant by TU Berlin and DAAD for Alumni Workshop #HackYourDistrict 2024 at Kaohsiung, Taiwan.
- Received **Best Paper Award** for the paper titled "Object Distance estimation from a single moving camera for advanced driver assistance system" in 10th IEEE CONECCT, 2024 International Conference, at IISc, Bangalore (July 2024).



- Presented his paper titled "Predicting Adoption of Bicycle-Sharing System in India: A Hybrid SEM-ANN Approach" (Authors: Kathait, Nidhi and Amit Agarwal) In 17th International Conference on Travel Behaviour Research (IATBR), Vienna, Austria (July 2024).
- Received Special Recognition to team TrafficEye (Mr. Ritesh Singh, Mr. Karthik Krishnan, Mr. Utkarsh Agarwal, Prof. Amit Agarwal) at IEEE Bengaluru Mobility Challenge 2024, IISc Bangalore. (Sep 2024).
- Participated in paper presentation at the 17th Urban Mobility India Conference & Expo 2024 during Oct 26-27, 2024.



- **Prof. Anjaneya Dixit** was invited for Official Visit in Intergovernmental Panel for Climate Change (*IPCC*) Scoping Meeting for Carbon Dioxide Removal (CDR) Technologies and Carbon Dioxide Capture Utilization and Storage (CCUS), Copenhagen, Denmark, October 14-16, 2024.
- Received 'Certificate of Appreciation' by IIT Roorkee as one of the top 5 teachers in the UG Young Faculty category.

- Prof. Akanksha Tyagi was awarded the "IEI Young Engineers Award 2024' in Civil Engineering discipline from the Institution of Engineers (India), on the occasion of the 39th National Convention of Civil Engineers, Kochi Local Centre, Kochi, October 17-18, 2024. She also delivered a lecture titled "Modelling and design of improvement for large underground openings in soft soils" during the event.
- Received the "Bright Spark Lecture Award" in appreciation of her outstanding achievements in geotechnical engineering and given for delivering ISSMGE lecture at the Indian Geotechnical Conference held on 19th -21st December 2024, Aurangabad, India. She delivered the Bright Spark Lecture on "Tunnelling & Underground Construction in Soils: Challenges & Design Framework for Ground Improvement".





- **Prof. Alok Bhardwaj** delivered an online lecture in a webinar series titled ' Advanced Technology Measures for Slope Protection and Landslides' organized by MoRTH, Arunachal Pradesh on June 28, 2024.
- Delivered an online lecture on 'Application of UAVs for Natural Hazards' in a webinar organized by IdeaForge on July 28, 2024.
- Delivered a lecture on 'Application of Geospatial Technology for Slope Monitoring' at DGRE Chandigarh on September 13, 2024.
- Taught Image Recognition Specialization in the Post Graduate Certificate Program in Data Science and Machine Learning (PGCP-DSML) organized by CEC IIT Roorkee and TimesPro from July to September 2024.
- Served as a member of the Project Screening Committee of the National Geospatial Programme (NGP) organized at IIT Delhi from September 26-27, 2024.
- **Prof. Saurabh Vijay** presented a paper, titled "Mapping And Bathymetry Of Glacial Lakes In The Himalaya Using Satellite Remote Sensing Data" at IEEE-IGARSS 2024, Greece during July 7-12, 2024.



- Invited to contribute to white paper on glacier related hazards along with 50 international researchers in November 2024.
- Secured funding from SDR India Pvt. Ltd. to organize annual Himalayan Glaciology Summer Schools during 2025-2029 in the Himalayan states. These schools will focus on key topics such as remote sensing of glaciers, glacier fieldwork techniques, glacier and climate modeling, and understanding glacier hazards and risks.
- **Prof. Siddhartha Khare** received "<u>Best Geospatial Startup Award</u>" working in Geospatial Agritech Domain, within the faculty driven category during National Geospatial Awards 2024 (Edition 1) held in VMCC, IIT Bombay.



Received "National Geospatial Emerging Faculty Fellow Award", for his outstanding contributions to the geospatial sector during the FOSSEE (GIS) project at IIT Bombay under the initiative of National Mission on Education through ICT (NMEICT), supported by the Ministry of Education, Government of India. Received the "Rising Star Award" for his startup Bhoomicam at the Making India Employable event in Mumbai. Presented by the India Education Forum and India Employer Forum under the initiative of Ministry of Education, Govt. of India. This award recognizes his outstanding contributions in academic and entrepreneurial fields.



- Invited as a Speaker at the agriculture summit during the 24th edition of GEOSMART India conference, scheduled to be held at HICC, Hyderabad, from December 2 - 5, 2024. He was invited as a panelist to discuss to provide insights about his startup Bhoomicam vision and how its Alpowered satellite-based analytics and API services are transforming agriculture sector.
- His startup <u>Bhoomicam</u> startup was selected by <u>IITRoorkeeInnovation</u> and <u>Incubation</u> cell to participate in the Nasscom Technology Confluence (NTC) 2024 held at Chandigarh! At <u>NTC</u>, <u>Bhoomicamteam</u> proudly represented <u>Indian Institute of Technology</u>, <u>Roorkee</u> initiatives in the <u>Geospatial</u> and <u>AI</u> sectors, demonstrating how our <u>satellite</u>-based analytics revolutionize <u>agriculture</u> through <u>precision</u> solutions.
- Invited to give a talk to showcase <u>Bhoomicam Geospatial</u> products to at the Space for <u>Agriculture</u> & <u>FoodProcessing</u> event hosted by <u>IN-SPACe</u> <u>ISRO</u> <u>Indian Space</u> <u>Research Organization</u> & <u>Department</u> of <u>Space</u>, Government of <u>India</u>. His startup was selected among top 8 shortlisted companies to present innovative solutions for integrating <u>Geospatial technology</u> in <u>agriculture</u>.

PATENTS



Ms. Anjali and Prof. C. S. P. Ojha have been granted a patent titled **"A Fixed Depth Horizontal Soil Profile Sampler"**. Patent Application no.- 202311027263, Patent No.-476627 Filing Date: 13/04/2023.

The Civil Engineering Department at IIT Roorkee is proud to announce that a groundbreaking patent (No. 202211065321, Grant No. 552790) titled "An Enhanced Advanced Driver Assistance Systems (ADAS) Based Real-Time Transportation Safety System and Method through IoT and Deep Learning" was granted on October 21, 2024. The patent, jointly developed by Prof. R. D. Garg and Dr. Neerav Sharma, integrates state-of-the-art technologies to address critical transportation safety challenges, particularly in the Indian context.





Prof. Indrajit Ghosh and Mr. Anurag Thombre have been granted a patent titled **"A road hazard detection proficiency testing system and method thereof"** on October 4, 2024

Prof. Sudipta Sarkar, Pradip K. Maji and Priya E have been filed a patent titled **"A** cellulose-based biodegradable hybrid adsorbent for selective phosphate and nitrate recovery from aqueous solutions".





Prof. Raja Chowdhury and Mr. Sahil Tanwar have been filed a patent titled **"Municipal wastewater treatment using algae sludge inoculum and by suppressing nitrification activity".**

AWARDS AND NOMINATIONS (STUDENTS)



Ms. Hempushpa Sahu, a Ph.D. Research Scholar in Geospatial Engineering (under the supervision of **Prof. P.K. Garg** and **Prof. Saurabh Vijay**), has received the 'Advanced Research Opportunities Program (AROP)' fellowship for a research project from RWTH Aachen University, Germany. The fellowship is for a duration of 6 months, from July 2024 to December 2024.

Mr. Deepak Verma, a Ph. D. Research Scholar in Geospatial Engineering (under the supervision of **Prof. Saurabh Vijay**), was awarded the Geoscience and Remote Sensing Society travel grant of \$1725 to attend the 44th annual International Geoscience and Remote Sensing Symposium (IGARSS 2024), held during July 7-12, 2024, at the Megaron Athens International Conference Center, Greece.





Ms. Rasheeda Soudagar, a Ph. D. Research Scholar in Geospatial Engineering (under the supervision of **Prof. Alok Bhardwaj**), received travel grant of \$1725 for oral presentation at 44th annual International Geoscience and Remote Sensing Symposium (IGARSS 2024) held during July 7-12, 2024, at the Megaron Athens International Conference Center, Greece.

 Mr. Kumar Rishabh Gupta, a Ph. D. Research Scholar in Hydraulics Engineering (under the supervision of Prof. P. K. Sharma), was awarded the Student Travel Grant of 2000 USD by EAG and GS to present the research work entitled "Mobility of multispecies solute transport through porous media" at the 2024 Goldschmidt Conference held from August 18-23, 2024 at Chicago, USA.



 Received ANRF (DST) International Travel Award, Govt. of India and AGU Student Travel Grant by American Geophysical Union (AGU) to present the research work entitled "Exploring Multispecies Solute Dynamics in Saturated Porous Media: A Simulation and Moment Analysis Approach" at the AGU 2024 Fall Meeting held from December 9-13, 2024 at Washington D.C., USA.



Ms. Khin Thinn Soe, a Ph. D. Research Scholar in Geotechnical Engineering (under the supervision of **Prof. Akanksha Tyagi**), was awarded the ISSMGE Foundation Travel Grant from the International Society for Soil Mechanics and Geotechnical Engineering XVIII European Conference on Soil Mechanics and Geotechnical Engineering (ECSMGE) in Lisbon, Portugal on August 26-30, 2024.

Mr. Murapaka Swamy Naidu, a Ph. D. Research Scholar in Geotechnical Engineering (under the supervision of **Prof. Akanksha Tyagi**), was awarded the ISSMGE Foundation Travel Grant from International Society for Soil Mechanics and Geotechnical Engineering to attend XVIII European Conference on Soil Mechanics and Geotechnical Engineering (ECSMGE) in Lisbon, Portugal on August 26-30, 2024.





Mr. Sushant Rahul, a Ph. D. Research Scholar in Geotechnical Engineering (under the supervision of **Prof. Akanksha Tyagi**), participated in the prestigious International School for Landslide Risk Assessment and Mitigation (LARAM-2024) organized by the University of Salerno, Italy. Being among the 40 PhD students worldwide chosen for this distinguished summer course, he attended and successfully completed the program from September 9 to 20, 2024 in Salerno, Italy.



Mr. Sarvesh Kumar Verma, a Ph. D. Research Scholar in Geospatial Engineering (under the supervision of **Prof. Saurabh Vijay**), received a €2400 travel grant from the International Association of Cryospheric Sciences (IACS) and the University of Oslo to attend the 3rd Machine Learning Workshop in Glaciology at the Finse Alpine Research

Station, Norway, from September 6-12, 2024. He presented a talk on "Deep Learning Approaches to Map HMA Glaciers," discussing advanced techniques for mapping glaciers in the Himalayan Mountain Region.

• Presented a talk on "Mapping glaciers and lake bathymetry using satellite remote sensing," at the 13th Summer School on Advanced Training in Land Remote Sensing, organized by the European Space Agency (ESA) at the University of Innsbruck, Austria, September 16 - 20, 2024.

Mr. Pawan Singh, a Ph. D. Research Scholar in Geospatial Engineering (under the supervision of **Prof. Saurabh Vijay**), received €1500 in financial support to attend the Debris-Covered Glacier Workshop in Klosterneuburg, Vienna, Austria, on November 28-29, 2024. He presented his work on "Ice Cliff Backwasting Rates from Hourly to Daily Timescales: A Case Study from Machoi Glacier, Western Himalaya."





- Mr. Sahil Kundal, a Ph. D. Research Scholar in Geospatial Engineering (under the supervision of Prof. Alok Bhardwaj), received the 2024 IEEE GRSS IDEA Professional Development Microgrant, with a maximum value of USD 500.
 Selected for the NCKULL iDAR Winter School 2025. Taiwan
- Selected for the NCKU LiDAR Winter School 2025, Taiwan.

Ms. Leena Dhruwa, a Ph. D. Research Scholar in Geospatial Engineering (under the supervision of **Prof. P. K. Garg**), was awarded a travel support grant of \$250 to present her paper entitled "LiDAR technology for efficient and accurate large-scale mapping and cadastral surveying" in the IEEE International India Geoscience and Remote Sensing Symposium InGARSS 2024 held on December 2 - 5,2024.





Ms. Snigdha Pandey, a Ph. D. Research Scholar in Hydraulics Engineering (under the supervision of Prof. P. K. Sharma), was awarded the ANRF (DST) Young Scientist International Travel Support, Govt. of India, to present the research work entitled "Assessing Distance-Based Dispersion models for simulating Solute Transport in heterogeneous porous media" at the AGU 2024 Fall Meeting held from December 09-13, 2024 at Washington D.C., USA.

Ms. Manisha Yadav, a Ph. D. Research Scholar in Geotechnical Engineering (under the supervision of **Prof. Akanksha Tyagi**), received the Best Paper Award for paper titled "Deformation response of Shallow Rectangular Tunnel Embedded in Saturated Sand Subjected to Seismic Loading" in Parallel Session during 8th International Conference on Recent Advances in Geotechnical Earthquake Engineering and Soil Dynamics, held on December 11 - 14, 2024 at IIT Guwahati.



Mr. Shubham Chajed, a Ph. D. Research Scholar in Geotechnical Engineering (under the supervision of **Prof. Aditya Singh**), received the "IGS-Ahmedabad Chapter Young Geotechnical Engineer (YGE) Award" for the best paper published during the immediate past Indian YGE conference. The award-winning paper is titled "AE Event Count Based Damage Evolution and its Application in Micromechanical Damage Plasticity Model." The award was presented on December 21, 2024 at the Indian Geotechnical Conference 2024 held at MIT, Aurangabad.

JOINING OF NEW FACULTIES



Dr. Abhiraj Sharma has joined as an Assistant Professor in Structural Engineering, Department of Civil Engineering on dated August 27, 2024. Dr. Abhiraj received his B.Tech degree in Civil Engineering from IIT Roorkee in 2016. Afterwards, he completed his M.S. and PhD from Georgia Institute of Technology in 2022.



Dr. Ketan Arora joined the Department of Civil Engineering as an Assistant Professor in Geotechnical Engineering on September 2, 2024. He completed his Ph.D. in Civil and Environmental Engineering from the Colorado School of Mines, USA, focusing on tunnels in squeezing ground conditions. Dr. Arora holds an M.Tech in Rock Engineering & Underground Structures from IIT Delhi and a B.Tech in Civil Engineering from SVNIT Surat.

RESEARCH PROJECTS AWARDED

Name of the Principal Investigator/ Co- Pl	Research Project	Sponsoring Agency	Amount (₹ Lacs)
	CrowdEye: A Wireless, Embedded Computer-Vision Based Crowd Alert and Management System	Uttarakhand State Council for Science & Technology (UCOST)	3.60
Prof. Amit Agarwal (PI)	Wireless Real-Time Passenger Counting System	TIH, IIT Indore	23.15
Prof. Anjaneya Dixit (PI)	Crystalline water proofing admixtures for exposed surfaces: Performance under combined thermal and humidity cycles	NBCC (India) Ltd.	104.19
Prof. Alok Bhardwaj (PI)	Object Detection using Hyperspectral Remote Sensing	DRDO	699.45
Frof. Mahendra Singh (Co-PI)	Seismic Vulnerability of Tunnels In Himalayas	Ministry of Road Transport and Highways, Government of India	82.79

Prof. Pushpa Choudhary (PI)	Development of intelligent assistance systems for a safer crossing of at-risk pedestrians	CSIR	30.00
	Development of intelligent assistance systems for a safer Road Crossing of Pedestrians in Smart Cities	iHUB Divya Sampark, IIT Roorkee	16.69
Prof. Sanhita Das (PI)	Motorised Two-Wheeler Behaviour and Safety: Risk Assessment and Mitigation	CSIR-EMR	31.11
Prof. Satish Chandra (Co-PI)			
Prof. Sonalisa Ray (PI)	Ultra-High-Performance Concrete for Building Applications: Development and design parameters	NBCC India Ltd.	149.00
Prof. Umesh Kumar Sharma (PI)	Structural Fire Performance of EPCO®-FIRE-X, a Fire-Retardant Intumescent Coating	Krishna Conchem Products Pvt. Ltd	7.50
	Chloride Adsorption and Corrosion Mitigation: Innovative Solutions for Improving Durability & Service Life of RCC Structures	NBCC India Ltd.	65.99

EVENTS:

WORKSHOPS/CONFERENCES/SHORT TERM COURSES

Harela Festival Celebration: July 16, 2024



To celebrate the Harela Festival and in line with the Hon'ble Prime Minister's inspiring call for "Ek Ped Maa Ke Naam", Prof. Praveen Kumar, Head of the Civil Engineering Department at IIT Roorkee, along with his esteemed colleagues, has proudly planted a Jamun sapling in the Civil Engineering Lawn.

DRONE4S: Drone Technology Lab For Sustainability and Student Hackathon: September 26, 2024



The DRONE4S Lab, a state-of-the-art drone technology lab dedicated to sustainability, was inaugurated by Prof. Praveen Kumar, Head CED on September 26 2024, with generous sponsorship from American Express. As part of its mission to foster innovation, the lab organized a student hackathon that saw enthusiastic participation from nearly 130 students across various departments of IIT Roorkee. Following a rigorous Phase-1 written exam, 38 teams competed, out of which 15 advanced to present their ideas on drone software and hardware, programming, and applications. Three standout teams were awarded for their innovative solutions and offered internships to work on cutting-edge drone-related projects, advancing the lab's goal of sustainable technological development.

Postgraduate Certificate Program in Data Science and Machine Learning: October 21 - 25, 2024

Prof. Alok Bhardwaj organized the campus immersion for the 8th Batch of Postgraduate Certificate Program in Data Science and Machine Learning from October 21-25 2024. This was a 10-month long program jointly offered by CEC IIT Roorkee and TimesPro. This is the longest running DSML program offered by CEC IIT Roorkee to working professionals.



Workshop on Applications of Driving Simulators and VR in Advanced Road Safety Research: October 25 - 26, 2024



A two-day workshop on "Applications of Driving Simulators and Virtual Reality in Road Safety Research" was successfully organized on October 25-26, 2024 at the Department of Civil Engineering, IIT Roorkee.

The workshop, jointly conducted by IIT Roorkee, IIT Bombay, IIT Hyderabad, IIT Jammu, and CSIR-CRRI Delhi, aimed at exploring the effective use of simulators and VR technologies for enhancing road safety and encouraging meaningful discussions on the diverse applications of simulators in traffic research, particularly for Indian road conditions. Prof. Pushpa Chaudhary was the Coordinator of the workshop.

Geospatial Survey Camp: November 28 - December 11, 2024

A Geospatial Survey Camp was organized in Haridwar by Prof. R.D. Garg. Prof. Praveen Kumar, Head, CED and Prof. Saurabh Vijay visited the camp and encouraged everyone with their support.



Symposium on Extreme Loading on Structures - 2024: December 17, 2024.



The Department of Civil Engineering at IIT Roorkee hosted a distinguished Symposium on "Extreme Loading on Structures" on December 17, 2024. The event commenced with an inaugural ceremony, graced by the Chief Guest, Dr. M. Raghavendra Rao, Director of the Terminal Ballistics Research Laboratory (TBRL), DRDO, Chandigarh.

The event also featured Prof. Ramancharla Pradeep Kumar, Director of CSIR-CBRI Roorkee, as the Guest of Honor, and Prof. K. K. Pant, Director of IIT Roorkee, who served as the Patron of the symposium. Prof. Praveen Kumar, Head of the Department of Civil Engineering, was the Chairman, while Prof. M. A. Iqbal acted as the Convener of the event. The symposium witnessed a series of insightful talks by several eminent speakers, including Prof. Sergey Kuznetsov, Russian Academy of Sciences, Prof. Puneet Mahajan, IIT Delhi, Dr. Akhilesh Sharma, TBRL, Chandigarh, Mr. Moloy Chakraborty, Scientist, AERB, Prof. Vladimir Bratov, Edinburgh Napier University, Prof. Umesh Kumar Sharma, IIT Roorkee, Dr. Ashish Saini, TBRL, Chandigarh, Prof. Pankaj Aggarwal, IIT Roorkee, Mr. Sourav Acharaya, Scientist AERB Mumbai, Prof. Anandiya Deb, IISc Bengaluru, and Dr. R. K. Singh, BARC, Mumbai. The symposium concluded with a valedictory session, where the Chief Guest, Dr. Seema Vinayak, Director of DIA-COE IIT Roorkee, addressed the participants.

GUEST LECTURES/AWARD CEREMONIES

Online Lecture Series on Engineering the Future: Progressive Practices in Geotechnical Engineeringorganised by Indian Geotechnical Society (IGS) student Chapter Roorkee: June 3 - October 21, 2024

Lecture 3: Towards the use of Nature-based Solutions for the protection of linear infrastructure in upland areas by Prof. Jonathan Knappett: July 15, 2024

Lecture 4: Recent research to enhance the design and sustainability of overhead line equipment (OLE) foundations in tension by Prof. Michael Brown: July 15, 2024

Lecture 5: Effectiveness of Dense Granular Columns Liquefaction Mitigation for Structures in Interbedded Deposits by Prof. Shideh Dashti: September 10, 2024

Lecture 6: Effects of Subsurface Heterogeneity on Liquefaction-induced Ground Deformation During Earthquakes by Prof. Ross W. Boulanger: October 21, 2024

Lecture 7: ComprehensiveDynamic Characterisation of Soils for seismic analysis of foundations by Prof. A. Murali Krishna: October 28, 2024

Guest Lecture by Ms. Lucky Nagarajan Director and Chair of WiDF: September 27, 2024



On September 27, 2024, Ms. Lucky Nagarajan, Director and Chair of WiDF, visited the Department of Civil Engineering at IIT Roorkee. She delivered an insightful talk titled "Civil Engineering: Demand and Opportunities, Connect and Grow." Prof. Praveen Kumar, Head CED welcomed Ms. Nagarajan with a bouquet, setting a warm tone for the event. The session attracted a large audience of students and faculty members. Prof. Akanksha Tyagi Coordinated this event.

Guest Lecture by Mr. Kaizad, Engineer Director, Technical Ushta Const. Co. Pvt. Ltd.: October 16, 2024

Prof. Rakesh Ranjan coordinated a technical talk on behalf of the Structural Engineering Group of the Civil Engineering Department. Mr. Kaizad Engineer, Director (Technical) at Ushta Infinity Construction Company Pvt. Ltd., delivered a technical talk on "Case Studies on Repair and Retrofitting of Structures". Mr. Kaizad presented several case studies, shared challenges associated in each project, and discussed the final solution applied in the field. The technical talk was attended by 34 M. Tech. students and more than 50 PhD students.



Guest Lecture by Dr. M. R. Singh, Ex-Director General, National Research Laboratory for Conservation of Cultural Property, Lucknow: December 09, 2024



The Department of Civil Engineering hosted a technical talk by Dr. M.R. Singh, Ex- Director General, National Research Laboratory for Conservation of Cultural Property, Lucknow on "Relevance of Ancient Lime and Clay Plasters in Modern Construction" on Monday, 9th December 2024.

The talk covered Dr. Singh's illustrious experience spanning more than two decades in various restoration projects in the Ajanta and Ellora UNESCO Heritage Sites. The talk was well received with strong participation from students and an impromptu but deeply informative explanation on the lime cycle by Prof. Bhupinder Singh as well.

Invited Technical talk by Prof. S. K. Singh: December 17, 2024

The Department of Civil Engineering at IIT Roorkee hosted an invited technical talk titled "Innovative Sustainable Building Materials for Construction: A Way Forward" by Prof. S. K. Singh, Principal Scientist at CSIR-CBRI Roorkee on December 17, 2024.. The session Chief guest by Prof. Praveen Kumar, Head of CED, with Mr. Ashok K. Sharma , Director of Launchpad, as a speaker and Prof. M. A. Iqbal as Chairman.



This was followed by Mr. Ashok K. Sharma's talk on "Dynamic Solidification: Better, Cheaper, and Faster Deliveries," focusing on efficient solidification techniques for faster and cost-effective construction processes.

FORTHCOMING EVENTS

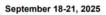
3 rd International Conference on Transportation Infrastructure Projects (TIPCE - 2025): Conception to Execution: September 18-21, 2024

The Department of Civil Engineering at IIT Roorkee is pleased to announce the **3rd** International Conference on Transportation Infrastructure Projects: Conception to Execution, scheduled for September 18-21, 2024.

The conference will emphasize a two-way learning process, i.e., from industry to academia and from academia to industry. Relatively higher importance will be given to case studies from the transportation sector, construction industries, consulting agencies, and academia involved in such studies. The focus will remain to understand how transportation infrastructure projects have been conceptualized, designed and executed to bring desired development in an area. Prof. Nikhil Saboo and Prof. Pushpa Chaudhary will be the organizing secretaries of the conference. For more information, kindly <u>click here</u>.



Infrastructure Projects : Conception to Execution





14th International Symposium on Plasticity and Impact Mechanics (IMPLAST 2025): October 12-16, 2025

14th International Symposium on Plasticity and Impact Mechanics



We are pleased to announce the 14th International Symposium on Plasticity and Impact Mechanics (IMPLAST 2025), which will be held from October 12-16, 2025. This prestigious event will bring together leading experts, researchers, and professionals from around the world to discuss the latest advancements and breakthroughs in the field of plasticity and impact mechanics. This symposium aims to foster fruitful interactions between scientists from academia,

industries and research laboratories for sharing the latest developments in plasticity and impact mechanics. In addition to providing platform to scientists for sharing their knowledge, these symposia have proven instrumental in building and strengthening lasting relationships between the participants from across the globe. The Chairman of the organizing committee is **Prof. M. A. Iqbal**. For more information please <u>click here</u>.

International Conference on Condition Assessment, Rehabilitation & Retrofitting of Structures (CARRS): December 11-13, 2025

First Announcement



International Conference on Condition Assessment, Rehabilitation & Retrofitting of Structures (CARRS) 11-13th December 2025 Indian Institute of Technology Roorkee

The Department of Civil Engineering, IIT Roorkee is proud to announce the International Conference on Condition Assessment, Rehabilitation & Retrofitting of Structures (CARRS 2025), scheduled to take place from December 11-13, 2025.CARRS is designed to be a knowledge exchange platform to cater to the highly interdisciplinary area of condition assessment and strengthening of civil infrastructure. Conducted biannually, CARRS brings together the research community, practicing engineers, contractors, academicians, and government agencies to jointly discuss various aspects of rehabilitation and retrofitting. For more details, please contact Prof. Umesh Kumar Sharma (umesh.sharma@ce.iitr.ac.in) and Prof. Rajib Chowdhury (rajib.chowdhury@ce.iitr.ac.in).

VISITORS

Delegates from Far Western University, Mahendranagar, Kanchanpur, Nepal visited the Department of Civil Engineering, IIT Roorkee. They had an insightful talk with Prof. Praveen Kumar, Head CED, and presented a prize of honor to the Head of the Department.





On October 14, 2024, the Department of Civil Engineering at IIT Roorkee hosted an educational visit from the Head of Civil Engineering at NIT Delhi, accompanied by a faculty member and 21 students. The event featured an insightful talk by Prof. Praveen Kumar, Head CED, who engaged with students and faculty members, including Prof. Rakesh Ranjan, Prof. Gargi Singh and Technical Officers Mr. Vikash Gupta

and Mr. Prashant Singh. This visit aimed to promote knowledge exchange and collaboration between the two institutions.

On November 16, 2024, Brig. K. P. Singh, Commandant, BEG & Centre visited the Department of Civil Engineering, IIT Roorkee for advice in their projects.





On November 21, 2024, a Norwegian delegation, led by HE Ms. May-Elin Stener, Ambassador of Norway to India, visited the Department of Civil Engineering at IIT Roorkee. The delegation, which included Ms. Linn Siri Benjaminsen, Mr. Espen Aasen, Mr. Vivek Kumar, and Dr. Rajinder Kumar Bhasin from the Norwegian Geotechnical Institute, participated in a laboratory tour showcasing advanced research in geotechnical engineering. Following the tour, they interacted with Prof. Praveen Kumar, Head of the Department.

ALUMNI CONNECT

Diamond Jubilee Civil Engineering Alumni of 1964 Batch visited the Department and shared their memories and experiences with the faculty members of the Department: September 26, 2024



Ruby Jubilee Civil Engineering Alumni of 1984 Batch visited the Department and shared their memories and experiences with the faculty members of the Department: October 16, 2024



Silver Jubilee Civil Engineering Alumni of 1999 Batch visited the Department and shared their memories and experiences with the faculty members of the Department: November 16, 2024



Golden Jubilee Civil Engineering Alumni of 1974 Batch visited the Department and shared their memories and experiences with the faculty members of the Department: December 3, 2024



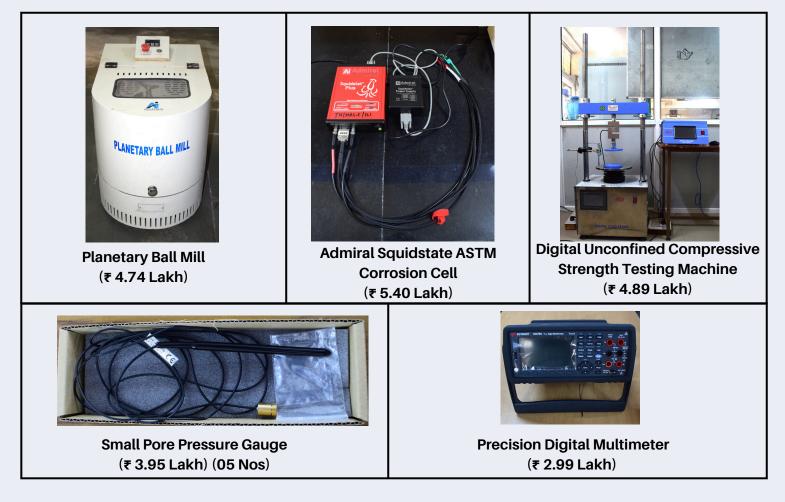
INFRASTRUCTURE (NEW FACILITIES/ INSTRUMENTS)

Single Point Laser Doppler Vibrometer (₹ 20.72 Lakh)



The OMS LaserPoint LP01 Laser Doppler Vibrometer is an easy-to-use precision instrument for non-contact vibration measurement of any surface. The system can be instantly used by aiming the laser beam at a target at any distance up to five meters, without the need for any optical or mechanical adjustments.

The system output is an analog voltage that is directly proportional to the target velocity, and can be easily viewed with an oscilloscope, spectrum analyzer, or data acquisition system. The LaserPoint Laser Vibrometer includes two velocity ranges and an array of low pass filter options to optimize the quality of the output signal. The standard LP01 system can measure vibration frequencies up to 20 khz.



BOOK PUBLISHED



Sharma, L. **Garg, P. K.** (2024), Deep Learning in Internet of Things for Next Generation Healthcare, Taylor and Francis.





Gupta, S., **Ojha, C. S. P.** and Thakur, P. K. (2024), Flood modelling in a changing climate scenario: A case study of Upper Ganga Basin, Cambridge Scholars Publishing.

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29th Inter IIT Staff Sports Meet 2024



"The 29th Inter IIT Staff Sports Meet 2024 was hosted by IIT Kanpur, Uttar Pradesh, from December 18 - 24, 2024. IIT Roorkee secured eight medals and claimed the prestigious first runner-up trophy in the men's category of the General Championship. The Department of Civil Engineering contributed significantly to this stellar performance. Dr. Nikhil Saboo won a silver medal with his exceptional throw in the Javelin Throw competition and Mr. Prashant Singh & Mr. Ankit Saini brought glory to the department by winning the gold medal in the Cricket event.

The Department of Civil Engineering congratulates the medal winners and extends best wishes for their future endeavors in sports and beyond."

FAREWELL



The Department bid a heartfelt farewell to **Prof. Satyendra Mittal** from Geotechnical Engineering Group as he retires on July 31, 2024. His exceptional contributions and dedication will be greatly missed. The Department wishes him a joyful and fulfilling retirement.



The Department wishes a happy and healthy retirement life to **Mr. Afzal Khan** (Senior Attendant) from Geospatial Engineering Lab as he retires on August 31, 2024.

Prof. Kamal Jain from Geospatial Engineering Group got retired on September 30, 2024. His invaluable contributions to Geospatial Engineering have left an indelible mark on our department. The Department wishes him a joyful and fulfilling retirement.





The Department wishes a happy and healthy retirement life to **Mr. Bhairav Singh Bohra** (MTS) from CAD Lab as he retires on December 31, 2024.

Editor Prof. Praveen Kumar *Editorial Team* Prof. Akanksha Tyagi Mr. Nitin Kumaar , Mr. Saanidhya Chaturvedi Prepared and Designed by: Data Information Centre (DIC) CED, IIT Roorkee (+91-1332-286259