



DEPARTMENT OF CIVIL ENGINEERING

INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

ROORKEE - 247 667 (UTTARAKHAND) INDIA

E-Newsletter

Jan-Jun 2024



FROM THE HoD's DESK



Dear All,

Welcome to the latest volume of our departmental newsletter, covering January to June 2024. This edition showcases the exceptional achievements and ongoing efforts of our community at the Department of Civil Engineering, IIT Roorkee. From groundbreaking research to student successes and faculty accolades, this newsletter reflects our commitment to excellence in education and innovation. I commend our faculty, students, and staff for their dedication and contributions. Together, let's continue advancing the frontiers of civil engineering.

Thanks

Prof. Praveen Kumar

ACHIEVEMENTS IN BRIEF

1. 18 numbers of Research Projects were sanctioned at a total cost of ₹ 1435.48 Lacs
2. A total of 24 students were awarded their Ph.D. degrees.
3. Faculties have published 76 Research Publications in peer-reviewed journals.
4. 376 numbers of Consultancy projects from various government agencies and private organizations were carried out at total value of ₹2542.39 Lacs
5. 1 new faculty member has joined the department as Assistant Professor.

AWARDS AND RECOGNITIONS (FACULTY)



Prof. S. K. Jain

- Delivered a lecture in Training Course on "Capacity Building of Minor Irrigation Organisation" on topic "Advanced techniques and tools for Hydrological analysis and Design" at Department of WRDM, IIT Roorkee on Feb 02, 2024.
- Participated in the Discussion meeting organized by IISc, Bangalore, on the theme "Hydrology in the Anthropocene" at Hoysala Village Resort, Hassan, Karnataka on Feb 13, 2024.
- Delivered presentation in Roorkee Water Conclave 2024 on "Advancing Water Footprint Analysis in India through Interactive Web Technology" at IIT Roorkee on Mar 6, 2024.
- Delivered keynote talk at 8th R&D International Conference on "Global Trends in Water Resources, Power and RE Technologies", organized by CBIP and IIT Roorkee on the topic "Climate resilient development for sustainable water, food and energy security for India" at IIT Roorkee on Mar 30, 2024.

Prof. Kamal Jain

Elected for the post of Second Vice President in the Executive Council (2024-26) of the Indian Society of Remote Sensing (ISRS). His tenure in the ISRS Executive Council was effective from Apr 1, 2024, to Mar 31, 2026.



Prof. C. S. P. Ojha

- Guest Editor for the special issue "Sustainable Water Resources Management and Water Supply- Extension", Sustainability Journal, 2024.
- Chairperson, Sectional Committee on Glacier Lake Outburst Floods (GLOFs) and Landslide Lake Outburst Floods (LLOFs), in Feb 2024.
- Delivered Key Note Lecture on the topic "Application of AI and ML in Water Resources Engineering" at NIT Silchar, in Feb 2024.
- Coordinator, Working Group for Draft for Specification for Plastic Underground Inspection Chambers and Manholes and ancillary structure, (CED24: WG06), in Mar 2024.
- Chief Guest and Keynote Speaker at International Water Conference for Sustainable Development Goals (IWCSGDG 2024) on the topic "Engineering Interventions for Sustainable Development" at MNIT Bhopal, on Mar 22, 2024.

Prof. Satyendra Mittal

- Delivered a Keynote lecture on "Soil can be dictated for sustainable development in the Himalaya region" at a seminar organized by BRIDCUL Dehradun on Feb 1, 2024. The honorable Chief Minister and PWD Minister of Uttarakhand inaugurated the seminar.
- Delivered a Keynote lecture on "Case Studies on Stone Column for supporting Heavy Structures" at the Technical Training Workshop on "Recent Advances in Pilling Engineering" for L&T in ONLINE MODE organized by SVNIT Surat during March 18 - 21, 2024.



Prof. Satish Chandra

- Delivered a lecture on Sustainable Road Construction in Hills – Issues and Challenges at Foundation Day of BRIDCUL, Uttarakhand at Dehradun on Feb 1, 2024.
- Attended the Outreach Program of the Government of Nepal as an expert advisor for their upcoming Project of Road Maintenance in Nepal on April 15, 2024, at Hotel Park, New Delhi.

Prof. R. D. Garg

Delivered talk on "Comparison of Current Urban Flooding Conditions and Management Techniques in Four Different Geographies" at the Civil Engineering Student Symposium (CESAFIESTA 2.0) at IIT Ropar on Mar 9-10, 2024.

**Prof. Priti Maheshwari**

Delivered Keynote Lecture on "Viscoelastic behaviour of excavations in laminated rocks" at the Women Indian Geotechnical Conference-2024 at College of Engineering Guindy, Anna University on Mar 8, 2024.

Prof. Indrajit Ghosh

Presented his research titled:

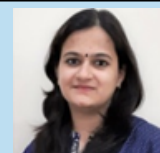
- Prediction of Vehicular Yielding Intention While Approaching a Pedestrian Crosswalk.
- A Copula-Based Approach for Modeling Pedestrian Crash Frequency.
- A Novel Approach Leveraging Augmented Data and State-of-the-Art Detection Models for Efficient Real-Time Road Surveillance.
- Understanding Heavy Braking in Vehicles While Approaching Pedestrian Crosswalks: A Survival Analysis Perspective.
- A Location Allocation Model for the Optimization of Emergency Medical Services in Dehradun. at 103rd Annual Meeting of the Transportation Research Board (TRB) at Washington D. C., USA on Jan 7-11, 2024.

**Prof. Amit Agarwal**

Karthik Krishnan O, Dhinesh Kumar R, K. V. Pranav and Dhish Kumar Saxena (2024). "AdaptiSync: AI-based Real-Time Adaptive Traffic Control using Edge-Computing". Showcased the product at InvenTiv, R&D fair, IIT Hyderabad on Jan 18, 2024.

Prof. Akanksha Tyagi

- Delivered Theme Lecture on "Equivalent Design Strength of Spatially Variable Cement-Treated Soils: Application to Jet Grouting/Deep Soil Mixing Projects" at the Women Indian Geotechnical Conference-2024 at College of Engineering Guindy, Anna University on Mar 8, 2024.
- Delivered Talk on "Stability of large underground openings in soft soils improved with jet grouting/deep soil mixing" in TunnelFem 2024: Celebrating the Rise of Women in Tunneling, 23 June 2024, Gurgaon.

**Prof. Aditya Singh**

Early Career Editorial Board in Journal Deep Underground Science and Engineering on Jan 23, 2024.

Prof. Saurabh Vijay

- Served in a review panel for the 44th Indian Scientific Expedition to Antarctica.
- Attended the European Geosciences Union General Assembly-2024 and presented a paper on "A multidisciplinary and multi-institutional fieldwork in the Indian Himalaya for glacio-hydro-climatological studies".

**Prof. Anjaneya Dixit**

- Participated in the 3rd International Workshop on Technologies for Low-Carbon and Lean Construction (TLC2) at IIT Madras on Jan 28-30, 2024.
- Co-Chair, at Recent Advances in Infrastructure Development (RAID) at NIT Calicut on Feb 12-13 2024.
- Invited for a lecture on "Sustainable building materials" in the Workshop on 'Innovative Solutions for Sustainable Construction using local materials' at VNIT Nagpur on Mar 13-14, 2024.

PATENTS

Dr. Kanwar Singh, **Prof. Satish Chandra**, Dr. Kishore Kumar and **Prof. Satyendra Mittal** have been granted a patent titled **"Process for construction of shallow multi-directional underpass intersection by box jacking and soil nailing without affecting existing traffic"** (Patent Number: 493870) on Jan 03, 2024.



Prof. Prakhar Misra has been granted 2 global patents for his industrial work titled **"GROUND MOVEMENT ANALYSIS DEVICE AND GROUND MOVEMENT ANALYSIS METHOD"** in Jan 2024. It proposes a ground deformation early warning system using an Interferometric SAR processing framework. [PCTJP2022026506] [PCTJP2022026508].

- Dr. Siksha Swaroopa Kar, Dr. M. N. Nagabhushana and **Prof. Satish Chandra** have been granted a patent titled **"Engineering of bitumen emulsion based pothole repair system"** (Patent Number: 510059) on dated Feb 13, 2024.
- **Prof. Satish Chandra**, Dr. Nasim Akhtar, Dr. Kirti Bhandari and Dr. D. Ravinder have been granted a patent titled **"Design of Noise Barrier Based on Different Frequencies"** (Patent Number: 523262) on Mar 11, 2024.



- **Prof. Amit Agarwal** and **Mr. Karthik Krishnan O.** have filed a patent for the title **"A Real-Time, Wireless Crowd Alert and Management System and a method thereof"**. Pat. 202411039695.
- **Prof. Amit Agarwal**, Mr. Manan Gupta, Mr. Hemanth Vasireddy, and Mr. Aditya Kora have filed a patent for the title **"Wireless edge computing-based real-time transit passenger counting system with cloud integration"**. Pat. 202411003605.

Prof. Sourav Das, Prof. Sumeet Mishra, **Prof. Rajib Chowdhury** and Mr. Shardendu Shukla have filed a patent for the title **"A portable system and method for in-situ tensile testing in high pressure gas environment including hydrogen"**. Pat. 202411008299.



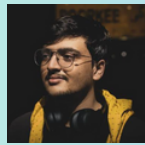
Prof. Praveen Kumar, **Prof. Nikhil Saboo** and **Mr. Soumyadeep Deb** have filed a patent for the title **"Apparatus and method for producing recycled waste plastic modified bitumen"**. Pat. 202411008363.

Prof. Nikhil Saboo and **Mr. Dheeraj Mehta** have filed a patent for the title **"Procedure for integrating sugarcane molasses into SBS modified bitumen"**. Pat. 202411016731.



Prof. Satish Chandra and **Mr. Bhavesh Bhambhani** have filed a patent for the title **"Method of producing bio-bitumen through modification of waste engine oil residue as bitumen extender for roads"**. Pat. 202411038015.

Prof. Sanjay Chikermane and **Mr. Survesh Chetiva** have filed a patent for the title **"An improved block masonry for enhancing earthquake-resisting features"**. Pat. 202411038575.



Prof. Pushpa Choudhary, **Prof. Manoranjan Parida**, **Mr. Akshay Gupta**, **Mr. Shreyansh** and **Mr. Priyanshu Pansari** have filed a patent for the title **"Method for developing a lane departure warning system for providing warnings based on severity levels"**. Pat. 202411039413.

AWARDS AND NOMINATIONS (STUDENTS)



Mr. Patel Dev and Mr. Manuvansh Rai, B.Tech. students were awarded the HoD's Letter of Appreciation for achieving the highest increase in SGPA in B.Tech (Civil Engineering) from the Autumn Semester (2022-2023) to the Spring Semester (2022-2023).

Mr. Vishnu Agrahari, Mr. Saksham Singh, and Mr. Udit Jain, B.Tech. Students have won the "BUILD VISION EXPO" competition on the topic "Designing a Coffee House on software and preparing a real model using Bamboos," held on April 5-7, 2024, organized by CES, IIT BHU.

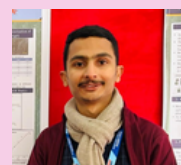


Mr. Prabhjot Singh, Ms. Vandana, and Mr. Mohd. Umar Javaid, B. Tech. students were awarded the Letter of Appreciation for achieving the Highest Improvement in Semester Grade Point Average in the B. Tech. (Civil Engineering) programme of the Department of Civil Engineering from Spring Semester (2022-23) to Autumn Semester (2023-24) in the Autumn Semester (2023-24).



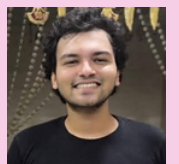
Mr. Aditya Anand, Mr. Abhinav Srivastava, Ms. Vaishnavi Anand, and Mr. Karan Kaurav, B.Tech. students have won the competition 'Samnivesha' on the topic "Radioactive Pollutants in Groundwater in Bihar " held from Mar 15-16, 2024, organized by IIT Patna.

Ms. Prerna Yadav, an M.Tech. student under the supervision of Prof. A. A. Kazmi from the Environmental Engineering Group, was awarded the Best Poster Award at the International Conference on "Futuristic Materials for Sustainable Development Goals-2024," held from Jan 9-10, 2024, at Chandigarh University, Mohali, Punjab, India.



Mr. Akash Jha, an M.Tech student under the supervision of Prof. Sudipta Sarkar from the Environmental Engineering Group, was awarded the Best Poster Award for his poster presentation titled "Nanoparticle loaded Hydrogels Prepared from Insect Derived Chitin for Phosphate Removal from Wastewater" at FMSDG-2024: International Conference on "Futuristic Materials for Sustainable Development Goals-2024" held from Jan 9-10, 2024 at Chandigarh University, Mohali, Punjab, India.

Mr. Ohm Soni, an M.Tech. student under the supervision of Prof. A. A. Kazmi from the Environmental Engineering Group, was awarded the OHSSAI PROMISING STUDENT OF THE YEAR AWARD at the OHSSAI 8th Annual HSE Excellence & ESG Global Awards 2023, held from Feb 22-23, 2024 based on his ongoing M. Tech. Thesis on "Treating high strength anaerobically digested wastewater".



Mr. Ebissa Gadissa Kedir, a research scholar under the supervision of Prof. C. S. P. Ojha from the Hydraulic Engineering Group, was awarded the ASCE StAR Fund Award of US \$500 to attend the 2024 World Environment and Water Resources Congress. He was selected as one of the three recipients of ASCE's Environmental and Water Resources Institute (EWRI) Visiting International Fellowship (VIF) of US \$2500 for the World Environmental and Water Resources Congress 2024 in Milwaukee, Wisconsin (May 19-22, 2024).

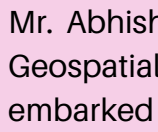


Ms. Pritipadmaja, a research scholar under the supervision of Prof. R. D. Garg from the Geospatial Engineering Group, was selected for a research project at RWTH Aachen University funded by the Advanced Research Opportunities Program (AROP). The project was planned to be conducted from Feb 15, 2024, to Aug 15, 2024.

Mr. Chintada Chandrasekhar, a research scholar under the supervision of Prof. G. D. Ransinchung R. N. from the Transportation Engineering Group, had his work selected as "STUDENT RESEARCH SPOTLIGHT" for Feb 2024 by the "International Society for Concrete Pavements".



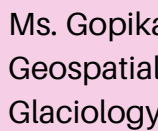
Ms. Ayana Ghosh and Mr. Abhitesh Sachdeva, research scholars under the supervision of Prof. G. D. Ransinchung R. N. and Prof. Praveen Kumar from the Transportation Engineering Group, were awarded the second prize for their poster titled "Celebrating eco-friendly infrastructure: Geopolymer and RAP integration in rigid pavement design for a sustainable future" at the IRF India Chapter Conference 2024, held from Mar 29 - Apr 1, 2024.



Mr. Abhishek Rai, a research scholar under the supervision of Prof. Kamal Jain from the Geospatial Engineering Group, was awarded the Mitacs Globalink Research Award. He embarked on a 12-week research journey at Queen's University in Canada, where he explored 'Visual SLAM for Navigation and Mapping' under the guidance of Prof. Aboelmagd Noureldin.



Mr. Dheeraj Mehta, a research scholar under the supervision of Prof. Nikhil Saboo from the Transportation Engineering Group, along with Prof. Nikhil Saboo, won the 2nd position in the start-up ideas presentation on "Use of Sugarcane Molasses for Production of Bio-Bitumen: Promoting Sustainability in Road Construction" at the IRF-IC conference on 'Revolutionizing Road Infrastructure with Modern Equipments, Technologies, Sustainable Materials and Policy Guidelines' held at New Delhi from Feb 29 - Mar 1, 2024.



Ms. Gopika Das K, a research scholar under the supervision of Prof. Saurabh Vijay, from the Geospatial Engineering Group participated in the 7th International Summer School in Glaciology, hosted by the University of Alaska Fairbanks (UAF). This prestigious summer school in glaciology selected 28 graduate students worldwide. She is the only Asian student selected in 2024 and received funding support from international societies such as IUGG, IGS, IASC, and IACS.



Ms. Vipasha Sharma, a research scholar under the supervision of Prof. S. K. Ghosh from the Geospatial Engineering Group, was awarded a Travel Grant for her accepted paper titled 'Assessment of the Impact of Changing Land Use on Incidences of Dengue in NCT Delhi, India.' She presented her research at the International Conference on 'Global Health Security 2024,' held in Sydney, Australia from Jun 18 - 21, 2024.






JOINING OF NEW FACULTY














Prof. Hemant Kumar joined the Hydraulic Engineering Group as an Assistant Professor on March 14, 2024. He completed his doctoral research at North Carolina State University, Raleigh, USA, in 2023. He earned his Master's degree in 2017 from the Indian Institute of Science (IISc), Bengaluru, and his Bachelor's degree in 2015 from the Indian Institute of Technology, Roorkee.

His areas of interest include the Food-Energy-Water nexus, sustainable water resources management, hydro-economical modeling, hydrological modeling, flow alteration and river regulation due to dams, meteorological and hydrological droughts, statistical analysis, machine learning in hydrological modeling, wavelet analysis, and crop yield modeling.

RESEARCH PROJECTS AWARDED

Name of the Principal Investigator/ Co- PI	Research Project	Sponsoring Agency	Amount (₹ Lacs)
 Prof. Abhishek (PI)	Disentangling anthropogenic impacts on global water storage derived from GRACE and SWOT missions.	Indian Space Research Organisation (ISRO)	25.00
 Prof. Aditya Singh (PI)	Mechanical Characterization of shallow landslide and development of early warning system using the large-scale direct shear test.	SERB, New Delhi	28.78
 Prof. Alok Bhardwaj (PI)	Remote Sensing and Rainfall Based Decision Support System for Landslides in Uttarakhand.	Defence Geoinformatics Research Establishment (DGRE), DRDO, Chandigarh under CARS Scheme	29.70
 Prof. Amit Agarwal (PI)	Wireless Real-Time Passenger Counting System.	DRISHTI CPS Foundation IIT Indore	23.15
 Prof. Anumita Mishra (PI)	Evaluating the Feasibility of Sustainable Landfill Cover Materials Derived from Industrial By-Products and Recycled Waste: Laboratory and Field Tests for Slope Stability and Long-Term Performance.	SERB under Core Research Grant	33.41
 Prof. B. P. Vellanki (PI)	Fate and Transport of emerging contaminants from NCR surface waters into the subsurface field laboratory and modelling studies.	SERB, New Delhi	36.84
 Prof. C. S. P. Ojha (Co-PI)			
 Prof. C. S. P. Ojha (PI)	Development of Innovative Sewage treatment technology with minimum energy requirement.	THDC India Ltd.	29.42
	Innovative approach towards enhancements of bio-hydrogen & Bi-methanation in two-stage Anaerobic co-digestion of Municipal Solid Waste (MSW) and Sewage Sludge by hydro-thermal pre-treatment.		27.48

	Modelling Micro-plastic movement through soil matrix: A step towards plastic waste management.		25.85
 Prof. Indrajit Ghosh (PI)	Data-driven Resilient Transportation Analytics accounting for Climate Change Impacts.	Scheme for Promotion of Academic and Research Collaboration (SPARC), MoE	73.20
	Large Scale Evacuation Modeling in Urban Floods: A Demand-Supply Integration with Multiple Data Sources.		74.04
	Machine learning framework for the development of an interactive pedestrian crossing to enhance pedestrian safety.	Core Research Grant (CRG), SERB	33.61
 Prof. Satish Chandra (Co-PI)	Assessment and Improvement of Road Safety in School Zones.	3M India Pvt. Ltd., Bangalore	9.26
 Prof. N. K. Samadhiya (PI)	Guidelines for the Assessment of Hillslope Instability using Instrumentation & Real-Time Monitoring.	Ministry of Road Transport & Highways (MoRTH)	433.00
 Prof. Akanksha Tyagi (Co-PI)			
 Prof. Alok Bhardwaj (Co-PI)			
 Prof. Nikhil Saboo (PI)	Performance Evaluation of PMGSY Roads Constructed Using New Technology, Full Depth Reclamation (FDR) with cement and Additives.	National Rural Infrastructure Development Agency, New Delhi	47.74
 Prof. Praveen Kumar (Co-PI)			
 Prof. Siddhartha Khare (Co-PI)	Restructuring and Enhancing Strategies with a Transformative Approach for InTegrated Water Disaster Management in India and the Netherlands—RESTARTIN.	DST and NWO	425.00

 Prof. Sonalisa Ray (PI)	From Cradle to Commercialization: Scaling-up and Validation of AgWACH in the Construction Industry.	NBCC (India) Ltd.	70.00
 Prof. Rakesh Ranjan (PI)  Prof. Anjaneya Dixit (Co-PI)	Evaluation of Mechanical and Thermal Properties of Sun-dried Local Mud Brick of Ladakh.	Defence Institute of High Altitude Research (DIHAR) - DRDO	10.00

EVENTS:

WORKSHOPS/CONFERENCES/SHORT TERM COURSES

45th Training Course under Pradhan Mantri Gram Sadak Yojana on "Capacity Building for FDR Roads in Uttar Pradesh": February 19 - 21, 2024



Prof. Praveen Kumar, MoRTH Chair Professor and Head of Civil Engineering Department, IIT Roorkee conducted his 45th course under PMGSY on "Capacity Building for FDR Roads in Uttar Pradesh" from Feb 19-21, 2024. The attendees included Superintending Engineers, Executive Engineers, and Assistant Engineers from different parts of Uttar Pradesh. It was fully sponsored by the Rural Engineering Department of Uttar Pradesh. The study material included basics of material testing, Rheology, FDR Roads, Modern Survey Equipments, Small Bridges, Intelligent Transport Systems, Road Safety, etc. Prof. K. K. Pant, Director, of IIT Roorkee, was the Chief Guest at the Valedictory Function. He emphasized the quality of road construction and honesty in all respects. The participants expressed their gratitude to IIT Roorkee, which is the Principal Technical Agency for PMGSY for its continuous support to PMGSY works in planning, execution, and maintenance. The event received strong support from Prof. G. D. Ransinchung R. N. and Prof. Nikhil Saboo along with Ph.D. Scholars.

Industrial Trip to Chopta and Singoli-Bhatwari Hydel Plant: Lead by Prof. Rakesh Ranjan and Prof. Prakhar Misra: February 25 - 27, 2024



Industrial Visit to Sawra Kuddu Hydro Electric Project, Shimla Himachal: Lead by Prof. Aditya Singh: February 28, 2024



International Conference on Geospatial and Civil Engineering (ICGCE 2024): March 11-12, 2024



The Department of Civil Engineering organized the ICGCE-2024: International Conference on Geomatics in Civil Engineering in March 2024. It was a dream project of the late Prof. Jayanta Kumar Ghosh. Not only his sudden demise deeply saddened the IIT Roorkee fraternity, but ICGCE-2024 was also left unfinished. Prof. Saurabh Vijay and Prof. Prakhar Misra convened the ICGCE-2024 as planned by the late Prof. JK Ghosh. ICGCE 2024 brought together the community working in the applications of Geomatics Engineering in Structural, Geotechnical, Hydraulics and Water Resources, Environmental, and Transportation Engineering Disciplines. The conference includes plenary speakers from national and international institutes and industries working in the geospatial domain. It was an exciting opportunity for networking and scientific exchange.

Student Trip to Jim Corbett National Park: March 28-31, 2024



A group of 163 students of B. Tech. III Year and IV Year of the Department of Civil Engineering participated in a student trip to Jim Corbett National Park and Nainital Area from March 28-31, 2024. The trip included trekking to Naina Peak (2700 m asl) and learning about the contributing sources of Nainital Lake and the differences between true carbon sink embodied by the diverse jungle and monoculture plantation in Jim Corbett's Hathi Dagar region.

Prof. Saurabh Vijay, Prof. Bhanu Prakash Vellanki, Prof. Siddhartha Khare, Prof. Pushpa Choudhary, and Prof. Pramod Kumar Sharma were also involved in this trip.

Short Term Course on Mix Design and Quality Control Practices in Pavement Construction: April 4-7, 2024



IIT Roorkee, Department of Civil Engineering, successfully completed a 4-day Short Term Course during April 4-7, 2024 on "Mix Design and Quality Control Practices in Pavement Construction". The event was attended by more than 99 participants from NHAI, Indian Air-Force, RNB Gujarat, Himachal PWD, contractors, consultants, quality control engineers, research scholars, and faculty members. The short-term course offered insights into fundamentals and practical approaches to ensure the construction of long-lasting flexible and concrete pavements. This great event was organized by Prof. Nikhil Saboo.

IITR-MoRTH Stakeholders' Meet on Instrumentation & Real-Time Monitoring of Hill Slopes & Special brainstorming session on " Cost-Effective Long-Term Remedial Measures of Landslides Prone Areas in Hilly Regions": April 20-21, 2024



Civil Engineering Department, IIT Roorkee successfully organized the first ever "IITR-MoRTH STAKEHOLDERS' MEET ON INSTRUMENTATION & REAL-TIME MONITORING OF HILL SLOPES" on Apr 20-21, 2024. The meet was presided over by Chief Guest Shri D. Sarangi, DG (Road Development) & Special Secretary, MoRTH, Guest of Honour Shri O.P. Shrivastava, Chief Engineer, MoRTH, and Head of the Civil Engineering Department & MoRTH Chair Professor Prof. Praveen Kumar.

The meet was organised under the MoRTH sponsored research project "Development of Guidelines on Instrumentation & Real-Time Monitoring of Hill Slopes" by Prof. N. K. Samadhiya [PI], Prof. Akanksha Tyagi [co-PI] and Prof. Alok Bhardwaj [co-PI].



A special brainstorming session on " Cost-Effective Long-Term Remedial Measures of Landslides Prone Areas in Hilly Regions" was also organized. More than 50 delegates including senior officials from MoRTH, Uttarakhand Landslide Mitigation & Management Center, NHIDCL, BRO, state PWD, THDC, academic experts from IIT Kharagpur, IIT Delhi, IIT Chennai, CRRI, industry experts from M/S. Lea Associates South Asia Pvt. Ltd., Maccaferri, Terre Armee, TechFab India, GCube Consulting, etc., actively participated in presentations and discussions.

Short Term Course on Advanced Concrete Design: May 8-10, 2024



A short-term course on Advanced Concrete Technology for RITES Ltd. from May 8-10, 2024 is associated with the Continuing Education Centre, IIT Roorkee. The course was organized for 15 mid (DGM) to senior-level (GM) officers from RITES Ltd. by Prof. Anjaneya Dixit. The course consisted of 12 sessions delivered by 6 expert speakers from IIT Roorkee and CSRI-CBRI, Roorkee.

The course covered a wide range of subjects around concrete such as quality control, durability, premature aging, mix design, non-destructive testing, and sustainability. The course was well-received by the participants with strong positive feedback. The department looks forward to an even wider engagement with the various industry players in the future.

UAV for Landslides: Learn Application of UAV in Monitoring Landslides: May 13-15, 2024



The Department of Civil Engineering and Continuing Education Center, IIT Roorkee, successfully organized a 3-day workshop on "UAV For Landslides: Learn Application of UAV in Monitoring Landslides" from May 13-15, 2024. The workshop was inaugurated by Chief Guest Prof. K. K. Pant, Director, IIT Roorkee, Prof. Praveen Kumar, Head CED, and Prof. Kaushik Ghosh Coordinator, CEC, IIT Roorkee. The course coordinator was Prof. Alok Bhardwaj, Department of Civil Engineering, IIT Roorkee. In total 20 participants, including research scholars from IIT Bombay, IIT Kharagpur, NIT Calicut, Delhi Technological University, Aligarh Muslim University, Amity University, and scientists and working professionals from NIT Calicut, Water Resources Department Mizoram, and CSIR CBRI Roorkee, participated.

Lectures were delivered by Prof. P.K. Garg, Prof. Kamal Jain, Prof. R.D. Garg, Prof. Saurabh Vijay, Prof. Prakhar Misra of IIT Roorkee, Mr. Akshay Jaiswal and Mr. Ankesh Shekher from IdeaForge.

46th Training Course under Pradhan Mantri Gram Sadak Yojana on "Capacity Building for FDR Roads in Uttar Pradesh": June 17 - 19, 2024

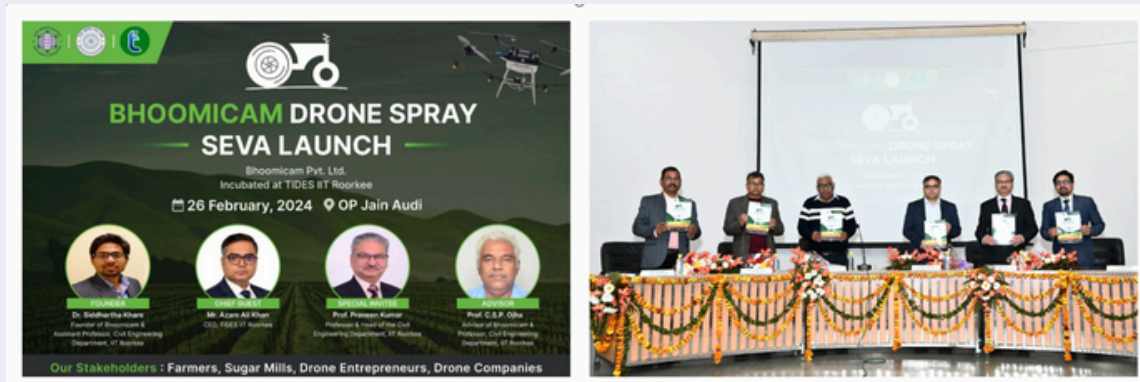
Prof. Praveen Kumar, Head of Civil Engg. Department, IIT Roorkee organized the 46th Training Program for Engineers of Rural Engineering Department. 37 Engineers ranging from Superintending Engineers to Assistant Engineers from different districts of Uttar Pradesh took part in the training program from June 17 -19, 2024. Various sessions included Geotechnical Testing, Aggregate Testing, Bitumen Testing, Mix Design, Concrete Roads, New Survey techniques, FDR Roads, Small Bridges, Rheological Testing, Driver Simulation lab, Road Construction by Waste Materials, Data Collection techniques, Intelligent Transport System.

Prof. Praveen Kumar, Prof. G. D. Ransinchung R. N., Prof. Nikhil Saboo, Prof. N. K. Samadhiya, Prof. R. D. Garg, Prof. Akhil Upadhyay, Prof. Pushpa Chaudhary, Prof. Sanhita Das, and Prof. Amit Agarwal gave lectures in different sessions. Presently road construction through FDR technology is going on in a big way in PMGSY Roads of UP. This course will be a big support for this construction especially.



NEW INITIATIVES

Bhoomicam Drone Seva Launch Event



Prof. Siddhartha Khare, the founder of Bhoomicam Pvt. Ltd., conducted a highly successful stakeholder meeting at IIT Roorkee for the "Bhoomicam Drone Seva Launch Event" on Feb 26, 2024.

This Agritech startup, incubated at TIDES IIT Roorkee, is at the forefront of transforming agriculture through innovative technology, with a steadfast commitment to improving the lives of farmers. The event was graced by Mr. Azam Ali Khan, CEO of TIDES IIT Roorkee, who joined as the Chief Guest, Prof. Praveen Kumar, Head of Civil Engineering Dept., Prof. C. S. P. Ojha, as distinguished advisor and Dr. Purshottam Kumar, officer Incharge Krishi Vigyan Kendra (KVK), Haridwar and Mr. Umesh Saxena, Scientist at KVK Haridwar.

"Know Our Labs" Drive by HoD



Prof. Praveen Kumar, Head of the Civil Engineering Department embarked on an enriching journey through the various labs that constitute the backbone of our department's research endeavors. Each lab visit offered a unique glimpse into the cutting-edge projects our dedicated research scholars are tirelessly pursuing. During his visits all the research scholars and M. Tech. students enthusiastically presented their research work, detailing the instruments they are utilizing to explore new frontiers in civil engineering. Accompanied by various esteemed faculty members, insightful discussions with the research scholars took place. We look forward to witnessing the continued growth and success of our department as we strive to make impactful contributions to the field of civil engineering.

GUEST LECTURES/AWARD CEREMONIES

Prof. Bhawani Singh Memorial Lecture by Dr. Manoj Verman, Tunneling and Rock Engineering Expert: March 21, 2024



Dr. Manoj Verman, an expert in Tunnelling and Rock Engineering, visited the Department of Civil Engineering at IIT Roorkee on Thursday, March 21, 2024, to deliver the prestigious Prof. Bhawani Singh Memorial Lecture. He spoke on the topic 'Transforming Tunnel Construction in India: Advances, Obstacles, and Future Directions.' The event was graced by the presence of Prof. K. S. Hari Prasad, Acting Head, Dr. A. P. Singh, Director of Explore Engineering Consultants Pvt. Ltd., Prof. Mahendra Singh, and Prof. N. K. Samadhiya. The entire event was organized jointly by the Indian Geotechnical Society Roorkee Chapter and the Department of Civil Engineering, IIT Roorkee.

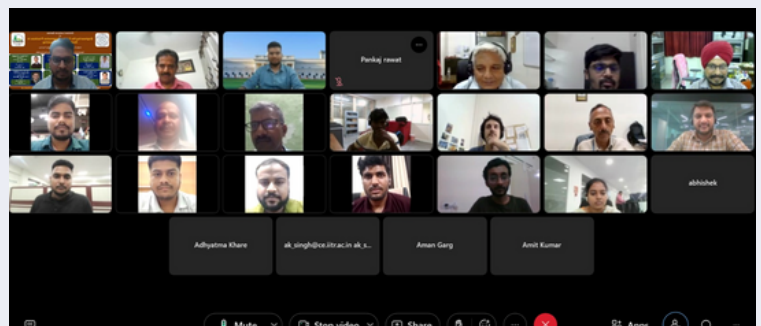
Online Technical Talk by Dr. Pranjal Mandhaniya Postdoc fellow, NTNU : April 17, 2024

Dr. Pranjal Mandhaniya, a Postdoctoral fellow at the Norwegian University of Science and Technology, delivered a technical talk on 'FEM Analysis of Slope Stability Problems in ABAQUS.' The lecture was conducted online via Webex link, organized jointly by the Department of Civil Engineering, IIT Roorkee, and the IGS Student Chapter Roorkee.

Online Lecture Series on Engineering the Future: Progressive Practices in Geotechnical Engineering: June 3 - October 21 2024

Lecture1: In-Situ Stress Measurements and its Applications for Pumped Storage Projects by Prof. G.V. Ramana: June 3, 2024

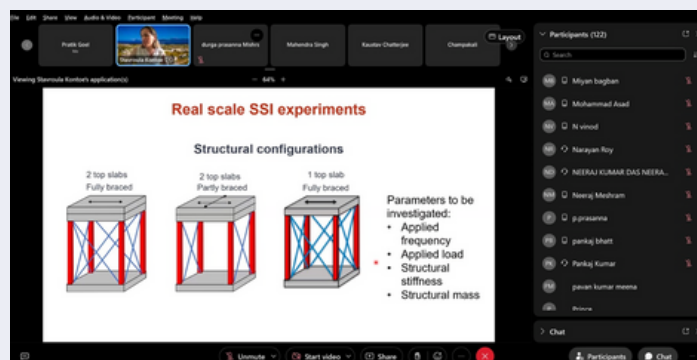
IGS-SCR is delighted to announce the successful launch of its lecture series, which is themed "Engineering the Future: Progressive Practices in Geotechnical Engineering." This significant event was made possible through the collaborative efforts of IGS-SCR and the Department of Civil Engineering at IIT Roorkee.



The series commenced with an online lecture titled "In-Situ Stress Measurements and its Applications for Pumped Storage Projects" on Jun 3, 2024. This inaugural lecture featured Dr. G.V. Ramana, an Assistant Prof. in the Department of Civil Engineering at NIT Warangal, who generously shared his expertise and delivered a highly informative lecture. Dr. Ramana's lecture provided an in-depth exploration of the hydraulic fracturing technique in rock mechanics, offering valuable insights into its practical applications for pumped storage projects.

Lecture2: Computational Modeling of Seismic Soil Structure Interaction Problems by Prof. Stavroula Kontoe: June 26, 2024

The second lecture was presented by Prof. Stavroula Kontoe, an Associate Professor at the University of Patras and a Visiting Reader at Imperial College London. Prof. Kontoe's lecture provided an in-depth exploration of the seismic soil-structure interaction (SSI) with real-scale SSI experiments and numerical modeling. She offered valuable insights into the practical applications and challenges involved in this domain.



FORTHCOMING EVENTS

14th International Symposium on Plasticity and Impact Mechanics (IMPLAST 2025): October 05-09, 2025

14th International Symposium on Plasticity and Impact Mechanics

IMPLAST 2025

October 05 - 09, 2025

The Department of Civil Engineering is going to organize the 14th International Symposium on Plasticity and Impact Mechanics (IMPLAST 2025) in October 2025. The symposium welcomes the latest research findings from across the globe on fundamental and applied aspects of large deformation and failure of thin-walled structures resulting from quasi-static, dynamic, earthquake, impact or blast loading.

The aim is to foster fruitful interactions between scientists from academia, industries, and research laboratories to share the latest developments in plasticity and impact mechanics. The Chairman of the organising committee is Prof. M. A. Iqbal. For more information please [click here](#).

VISITORS

Prof. Bryan Mark from **Ohio State University** and the **Byrd Polar Climate Research Center** visited the Geospatial Group in the Department of Civil Engineering in March 2024.



Mr. Mahendra Kumar Gupta Joint Secretary (Admin), CSIR visited the Department of Civil Engineering, IIT Roorkee on Sunday dated June 23, 2024.

ALUMNI CONNECT

Civil Engineering Alumni Of 2013 Visited The Department And Shared Their Memories And Experiences with The Faculty Members of The Department: January 05, 2024



INFRASTRUCTURE (NEW FACILITIES/ INSTRUMENTS)

Q6 UAV (₹ 22.24 Lac)



Q6 Mapping UAV is ideaForge's small category survey-grade drone with unmatched flexibility & ease of operation, even when compared to Hybrids. It is Quadcopter design & high area coverage ensure you can stay on the field longer and finish your large-scale mapping projects quicker. It includes BlueFire Ground Control Station makes flight planning quick and simple, and helps you focus on your survey grade outputs while minimizing piloting workload.



RO Test Skid (₹ 11.17 Lac)



MBR Lab Test Skid (₹ 3.29 Lac)



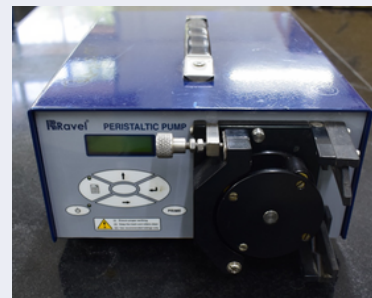
Autoclavable Vacuum
Filtration Assembly
(₹ 0.89 Lac)



Digital Data Logging Multi-Parameter
(₹ 3.61 Lac)



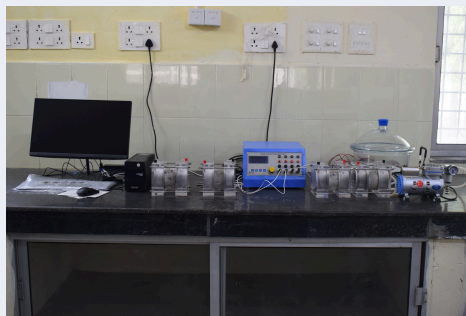
Multi-channel Electrochemical Device MultiEmStat4HR
(₹ 7.45 Lac)



Digital Rotary Peristaltic Pump
(₹ 3.27 Lac) (04 Nos)



Cyberone Lite Drone
(₹ 13.50 Lac)



Four Cell Rapid Chloride Permeability Test Apparatus
(₹ 4.93 Lac)



Concrete Rock and Masonry Saw
(₹ 3.06 Lac)



Digital Burette (₹ 1.99 Lac) (02 Nos)



Autoclave
(₹ 1.49 Lac)



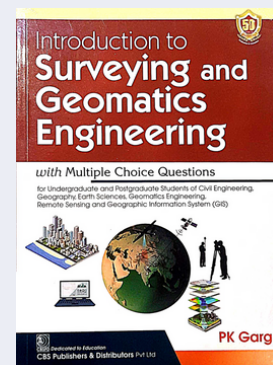
Ultrasonic Pulse Velocity Tester
(₹ 8.96 Lac)

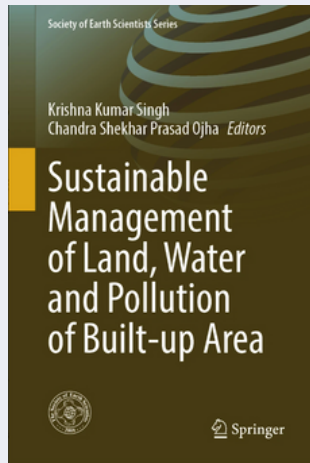


Laboratory Pilot Colloid Mill Application
(₹ 4.50 Lac)

BOOK PUBLISHED

The book **Introduction to Surveying and Geomatics Engineering with Multiple Choice Questions, 2024 Edition** has been authored by **Prof. P. K. Garg**. It follows a cohesive approach in explaining the recent research development, theory, and practical aspects of Surveying and Geomatics Engineering. It comprises 23 chapters, followed by examples and their solutions, analogies to simplify the concept, and MCQs.





A Book on **Sustainable Management of Land Water and Pollution of Built-up Area** has been authored by Prof. Krishna Kumar Singh and **Prof. C. S. P. Ojha**. This book is a comprehensive and forward-thinking exploration of the challenges and opportunities in building environmentally resilient and thriving cities. In a rapidly urbanizing world, the management of land, water, and pollution within built-up areas is a critical issue, and this book presents a wealth of knowledge to address it. It showcases a range of case studies and real-world applications that illustrate successful strategies and innovative solutions for urban sustainability. These practical examples offer valuable insights for urban planners, policymakers, and environmental practitioners.

FAREWELL

Farewell: B.Tech. Class of Year "2020"



Mr. Chander Pal MTS (S.G.) in Central Facilities has been retired on June 28, 2024. The Department wishes him a joyous retirement filled with gratitude for his years of invaluable service.

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