



IGS Student Chapter Roorkee

September 25, 2023

Indian Geotechnical Society (IGS)

The Indian National Society of Soil Mechanics and Foundation Engineering traces its origins back to 1948, when it was founded following the Second International Conference on Soil Mechanics and Foundation Engineering held in Rotterdam. Since its inception, this society has effectively pursued and championed all the objectives laid out by the International Society. Today, it is widely recognized under the banner of the Indian Geotechnical Society (IGS). Since 1983, the IGS has played a pivotal role in coordinating numerous conferences, technical sessions, and symposiums. Among these gatherings, the annual regular Conferences have earned considerable acclaim and are commonly referred to as the Indian Geotechnical Conferences (IGCs). Over the years, multiple IGS chapters have been established, further strengthening its reach and impact. In addition to its national endeavours, the Society has earned distinction by hosting the Asian Regional Conference on three separate occasions, specifically in the years 1965, 1975, and 2007, marking a remarkable achievement in the field.

IGS Roorkee Chapter

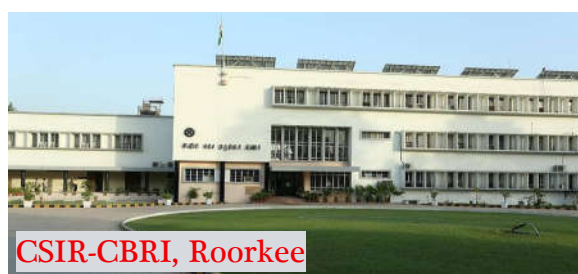
Indian Geotechnical Society, Roorkee Chapter was founded in 1972 with Prof. Dinesh Mohan, the then Director, Central Building Research Institute, as its founder Chairman. The primary objective of the IGS Roorkee Chapter is to establish a distinguished platform for engineers, scientists, industrialists, and other professionals actively engaged in geotechnical endeavours.



CED, IIT Roorkee



EQD, IIT Roorkee



CSIR-CBRI, Roorkee

Organizations

The Central Building Research Institute, in collaboration with the Department of Civil Engineering and the Department of Earthquake Engineering at IIT Roorkee, has showcased remarkable expertise across a wide spectrum of geotechnical engineering disciplines. Their areas of proficiency encompass soil and rock mechanics, analysis of slope stability, soil-structure interaction, foundation design, innovative ground improvement techniques, tunnel engineering, and extensive research into numerous other facets of geotechnical engineering.

IGS Roorkee Chapter**(Cont...)**

The Indian Geotechnical Society (IGS) Roorkee Chapter, in collaboration with IIT Roorkee and CSIR-CBRI Roorkee, hosted the Indian Geotechnical Conference in 1985, 2003 and 2013. The IGC 2013 centred around the topic “Geotechnical Advances and Novel Geotechnical Applications (GANGA)”. The IGS Roorkee Chapter successfully hosted a National Conference on “Numerical Methods in Geomechanics” in 2017, known as CONMIG-2017. The 17th meeting of the BIS subcommittee-CED 48 on “Rock Mechanics” was organized on March 19, 2018, by the IGS Roorkee Chapter in association with BIS, New Delhi and the Department of Civil Engineering, IIT Roorkee. Additionally, the 14th meeting of the BIS subcommittee-CED 56 on “Hill Area Development Engineering” took place on March 20, 2018. During the Covid-19 pandemic, the chapter has also facilitated several webinars. The LARAM (2020) international training course was organized by the IGS Roorkee chapter in partnership with IIT Roorkee, University of Salerno (UNISA), and Norwegian University of Science and Technology (NTNU) with the aim of enhancing understanding and expertise in the field of “Landslide Risk Assessment and Mitigation”. A two-day online mini symposium, known as Research Conclave 2021 in December 2021, was conducted in partnership with IIT Roorkee. The event aimed to bring together under-graduate and post-graduate students, research scholars, and young scientists from around the nation. This year IGC 2023 will be hosted by IGS Roorkee Chapter in association with Civil Engineering Department and Earthquake Engineering Department, IIT Roorkee, and CSIR-CBRI Roorkee on Dec. 14-16, 2023. The theme of the conference will mainly focus on “Geotechnical Advances in Sustainable Infrastructure Development and Risk Reduction”.

IGS Student Chapter Roorkee (IGS-SCR)

The IGS Student Chapter Roorkee was formed and inaugurated on 3rd December 2019 followed by the guest lecture of Prof. Lee Fook Hou, NUS Singapore and Prof. J.T. Shahu, IIT Delhi (Former Secretary IGS). The Student Chapter is one of the active Students’ Chapter under the aegis of IGS Roorkee Chapter. The IGS Student Chapter Roorkee recently established its new committee on August 22, 2023, and is set to introduce its members on September 25, 2023. This introduction will coincide with a lecture by Prof. G. R. Dodagoudar, a distinguished faculty member from the Indian Institute of Technology Madras, Chennai, on the topic “Soil-pile Structure Interaction”. The event will be graced by the presence of Prof. Mahendra Singh, Chairperson (IGS Roorkee Chapter), Prof. Kaustav Chatterjee (Faculty Coordinator, IGS-SCR), and Prof. Praveen Kumar, the esteemed Head of the Civil Engineering Department at IIT Roorkee. IGS Student Chapter Roorkee is dedicated to enhancing the technical acumen of young individuals and fostering their professional growth.



Newly Elected Members of IGS Student Chapter Roorkee with Prof. Mahendra Singh
(Annual meeting of IGS Roorkee Chapter organized on 22 August 2023)

SOIL-PILE STRUCTURE INTERACTION

by Prof. G. R. Dodagoudar



Prof. G. R. Dodagoudar
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Soil-pile structure interaction is a crucial aspect of geotechnical engineering that focuses on the dynamic relationship between deep foundation and the surrounding soil. It plays a vital role in the design and performance of various structures, including buildings, bridges, and offshore platforms. The primary goal is to ensure the safe transfer of loads from the superstructure to the underlying soil. Understanding how piles interact with the surrounding soil is essential for optimizing the design and preventing potential issues such as settlement, tilting, or structural damage. The lecture will discuss several factors that influence soil-pile structure interaction. These include soil properties (such as type, stiffness, and strength), pile characteristics (diameter, length, material), and structural loads (vertical loads, lateral loads, moments). Soil-pile structure interaction is especially critical in seismic regions, where dynamic forces can significantly impact the performance of structures. Engineers must consider not only the vertical load-bearing capacity of piles but also their ability to resist lateral forces and moments during earthquakes.



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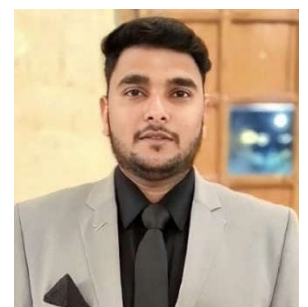
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Past Events

The IGS Student Chapter Roorkee has a rich history of organizing diverse and informative events. One of the earliest events was the “Inauguration Function” held on December 3, 2019, at the O. P. Jain Auditorium. This event featured two insightful lectures, the first delivered by Prof. Lee Fook Hou and the second by Prof. J. T. Shahu. In 2020, the chapter adapted to the online format with its “Webinar Series,” which spanned from May 13 to June 19. This series included seven lectures, covering various facets of geotechnical engineering, providing valuable knowledge to participants via Webex. Intriguing topics continued to be explored in the subsequent webinars. The “Emerging Opportunities in Bio-Geotechnics” webinar, held on December 30, 2020, aimed to cultivate an understanding of this field. Prof. Neelima Satyam from the Department of Civil Engineering, IIT Indore had shared her expertise. Geotechnical engineering enthusiasts had the opportunity to explore into “Geotechnical Seismic Isolation of Structures Using Rocking Shallow Foundations” in a webinar on July 14, 2021. Prof. Sivapalan Gajan, addressing from the State University of New York (SUNY) - Polytechnic Institute, USA, delivered this insightful lecture. The chapter continued its informative series with the “Retrofit of Existing Bridge Foundations” webinar on August 3, 2021, featuring Prof. Ioannis Anastasopoulos, Head and Professor of Civil Engineering at ETH Zurich, Switzerland. The highlight of the recent events was the “Research Conclave 2021” conducted on December 4-5, 2021. This two-day online mini symposium offered to undergraduate, postgraduate students, research scholars, and young scientists from all over the nation. With over 75 abstracts submitted, of which 40 were accepted and presented during this intellectually stimulating event.

Future Events

The IGS Student Chapter in Roorkee has ambitious plans to host a series of technical initiatives centered around the domain of geotechnical engineering. The primary objective is to encourage the interest of undergraduate and postgraduate students residing in the neighboring region. We are committed to conduct an array of technical events on an annual basis, encompassing lecture series, seminars, workshops, quiz, and field visits. A noteworthy highlight on our calendar is the annual mini conference, “Research Conclave”. This significant event will be meticulously organized through collaborative efforts, drawing upon the expertise of local chapters and nearby engineering universities. Research Conclave promises to be a platform for the exchange of knowledge and ideas, providing valuable insights into the ever-evolving field of geotechnical engineering.

The tentative program schedule for these initiatives includes (but is not restricted to):

S. No.	Events	Schedule
1.	IGC 2023 (Geotechnical Advances in Sustainable Infrastructure Development and Risk Reduction)	December 2023
2.	Lecture series on Recent developments in Numerical Geotechnics	Yet to be decided
3.	Lecture series on Recent developments in Experimental Geotechnics	Yet to be decided
4.	Research Conclave 2.0	Yet to be decided