

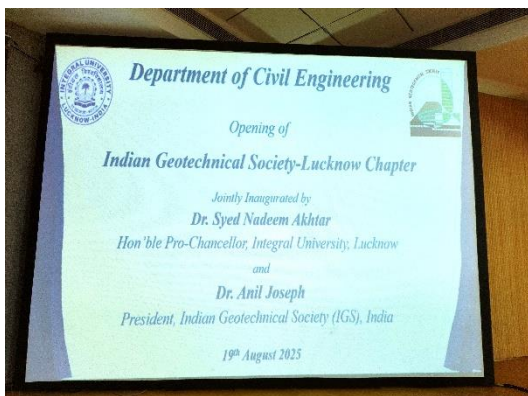
Report on
Inauguration of IGS Local Chapter at Integral University and National Seminar on
“Geotechnics for Tomorrow: Challenges, Innovations, and Opportunities”
Organised by Department of Civil Engineering, Integral University, 19th – 20th August 2025,
Central Auditorium, Lucknow

The Department of Civil Engineering, Faculty of Engineering and Information Technology, Integral University, Lucknow, organized a National Seminar on **“Geotechnics for Tomorrow: Challenges, Innovations, and Opportunities”** on 19th – 20th August 2025. On this occasion, the Indian Geotechnical Society (IGS) Local Chapter at Integral University was formally inaugurated in the gracious presence of eminent dignitaries and experts from academia, research, and industry. The event, hosted at the Central Auditorium, Integral University, witnessed enthusiastic participation of faculty members, researchers, industry professionals, and students from Integral University as well as other institutions from India.



The programme commenced with the presentation of bouquets to the dignitaries, followed by a welcome address by Prof. Syed Aqeel Ahmad, Head, Department of Civil Engineering and Chairman, IGS Local Chapter, Integral University. Prof. Ahmad introduced the vision and mission of IGS in bridging academia and industry, elaborating on the seminar’s objectives of addressing

future challenges and opportunities in geotechnics. He also presented an overview of the Department of Civil Engineering at Integral University, highlighting its academic excellence, advanced laboratories, industry linkages, and contributions to civil engineering education and research. He extended heartfelt gratitude to all members of IGS, distinguished guests, and student participants for making the inauguration of the Local Chapter possible.



The formal inauguration ceremony was then conducted, where Prof. Nadeem Akhtar, Pro Chancellor, Integral University, and Dr. Anil Joseph, Chairman, IGS, jointly pressed the button to mark the official opening of the IGS Local Chapter.



Subsequently, Dr. A. P. Singh, Secretary, IGS, in his address, elaborated on the society's contributions in academics, research, and consultancy, highlighting its commitment through workshops, training programmes, and publications such as the *Indian Geotechnical Journal*. He further underlined the importance of professional networking, knowledge dissemination, and standard-setting in geotechnical practice.

Dr. Vinay Bhushan Singh, Secretary, IGS Local Chapter and Assistant Professor at Madan Mohan Malaviya University of Technology, Gorakhpur, emphasizing the importance of the newly formed chapter in fostering sustainable infrastructure and providing geotechnical solutions for societal safety.

Dr. Sunil Kumar Singh, Dean, Faculty of Engineering and Information Technology, highlighted the importance of structural, geotechnical, and sub-structural safety, stressing that the IGS Local Chapter would serve as a platform to promote practical approaches in design and maintenance of safe and sustainable structures.



Dr. Manojit Samanta, Senior Principal Scientist, CSIR-CBRI Roorkee, inspired the audience by underlining the role of geotechnical engineers in nation-building and disaster mitigation, connecting geotechnical safety not only to modern infrastructure like smart cities and high-rises but also to conservation of historical monuments in and

around Lucknow and stabilization of hilly areas.

Dr. Anil Joseph, President of IGS and Managing Director of GeoStructurals Pvt. Ltd., emphasized bridging theoretical knowledge with field practices through continuous learning and sustainable applications.





Prof. Nadeem Akhtar, Hon'ble Pro Chancellor, Integral University, in his presidential address, appreciated the establishment of the Local Chapter and linked it with national initiatives such as the PM GatiShakti Programme, which emphasizes synchronizing and integrating infrastructure development through a comprehensive,

technology-driven approach. He encouraged students to actively participate in live projects and industry collaborations. The inaugural session concluded with memento presentations to the dignitaries as a token of appreciation and thanks.



Following the inauguration, the two-day seminar began with the first mind stimulating and engaging technical lecture delivered by Dr. Anil Joseph on ***“Forensic Geotechnics & Vibration Monitoring – Shaping Tomorrow’s Innovation.”*** He introduced forensic geotechnical engineering as a critical field for investigating structural failures and preventing potential

disasters. Through detailed case studies, he explained the collapse of a touch pile system at Kochi, highlighting progressive failure mechanisms, immediate responses, and corrective measures.

He also discussed the rectification of a tilted pier of the Kochi Metro, stressing the importance of geotechnical investigations, pile integrity tests, and additional piling in restoring structural stability. His presentation further explored vibration monitoring in high-risk construction activities such as high-rise demolitions, illustrated by the controlled demolition of the Supertech Twin Towers at Noida. Here, advanced instrumentation and ground vibration monitoring ensured the safety of surrounding buildings and utilities, with analytical studies confirming negligible structural impacts. His talk strongly demonstrated how innovations in forensic geotechnics and vibration monitoring are shaping safer, more resilient infrastructure.

Subsequently, Dr. Manojit Samanta delivered a comprehensive lecture on ***“Research Opportunities at CSIR-CBRI in Geotechnical Engineering and Recent Contribution to Different Important Projects.”*** He elaborated on the diverse research domains of CSIR-CBRI, including soil–foundation–structure interactions, piled-raft



behaviour, tunnel–building interactions, and geosynthetic reinforced soil (GRS) walls. He also highlighted advanced research facilities such as the Geotechnical Lab, Shake Table, and 3D Concrete Printing Facility, which enable pioneering experimental and numerical investigations.

Dr. Samanta showcased CSIR-CBRI’s significant contributions to major projects like the Pragati Maidan Tunnel in New Delhi, slope stabilization at the historic Tungnath Temple in Uttarakhand, and raft foundation strengthening at the Rajiv Gandhi Thermal Power Plant in Hisar. His address underlined the integration of field data, laboratory research, and numerical modelling to solve critical geotechnical challenges, while also highlighting promising research opportunities for students and young engineers.



The final lecture of Day 1 was delivered by Dr. Vinay Bhushan Chauhan, Assistant Professor, Madan Mohan Malaviya University of Technology, Gorakhpur, on the theme ***“The Hidden Risk Beneath: Simulation-Based Proof of Soil Investigation Significance.”*** He emphasized the importance of soil

stratification and its impact on bearing capacity, settlement, and overall foundation behavior. Using simulation studies, D. Chauhan evaluated the ultimate bearing capacity of layered soils with weak clay interbeds, consider rring factors such as clay depth ratio (H/B), sand friction angle (ϕ), and clay shear strength (S_u).

His findings demonstrated how shallow weak clay layers could drastically reduce foundation capacity and induce progressive failure, whereas deeper clay layers had lesser influence due to sand dominance. The study also showed that variations in clay strength and sand density significantly affect BCR trends, underlining the importance of rigorous soil investigation. With simulation results supported by case visuals from different sites in Uttar Pradesh, Dr. Chauhan effectively demonstrated how inadequate subsurface exploration can lead to structural vulnerabilities, reinforcing the need for comprehensive soil testing in geotechnical design.

The second day of the seminar commenced with the second address of Dr. Vinay Bhushan Chauhan. Dr. Chauhan, delivered an insightful presentation on the topic ***“Wraparound-End Geogrid Technology: Advancing Foundation Performance under Seismic Loading.”*** He highlighted the principle of wraparound-end geogrid reinforcement, where geogrid sheets are wrapped or folded at their ends to provide enhanced anchorage and confinement to the soil mass beneath foundations. This configuration mobilizes additional passive resistance and strengthens the soil–geogrid interface, leading to substantial improvements in bearing capacity and load–settlement performance. Drawing from experimental and numerical studies, the speaker explained how wraparound-end geogrid layers beneath shallow foundations outperform conventional planar reinforcement by mitigating excessive settlement and distributing loads more effectively.

The presentation further emphasized the role of this technology in enhancing seismic resilience of foundations. Shaking table experiments and finite-element analyses have demonstrated that wraparound-end reinforcement reduces lateral displacements, delays progressive failure, and shifts collapse mechanisms from brittle sliding to more ductile modes. The speaker also discussed design parameters such as wrap length, normalized width, layer spacing, and embedment depth, which govern performance optimization. By integrating laboratory findings with practical field applications, the lecture showcased how wraparound-end geogrid systems offer a cost-effective and sustainable solution for improving foundation safety in earthquake-prone regions. The talk strongly reinforced the potential of advanced geosynthetic reinforcement technologies in shaping resilient infrastructure for the future.



The seminar concluded with a vote of thanks delivered by Dr. Zishan Raza Khan, Associate Professor, Integral University. He expressed his gratitude to the Hon'ble Founder and Chancellor of Integral University for establishing a vibrant platform for organizing such intellectually enriching events, and to the Hon'ble Pro Chancellor, Prof. Nadeem Akhtar, for his continuous

guidance, support, and motivation. He extended heartfelt thanks to all the eminent speakers for sharing their valuable insights and stimulating technical knowledge.

Dr. Khan also acknowledged the contributions of the organizing committee, professionals from the field, faculty members, and students from Integral University as well as from various parts of the country for their active participation. He urged the participants to utilize the opportunities provided by such initiatives for nation building and contributing to society.

The event witnessed the participation of academia, industry, and research organizations. The seminar was a resounding success, once again reaffirming Integral University's commitment to academic excellence, innovation, and societal responsibility.

