



# IGS NEWS

A Bulletin of the Indian Geotechnical Society

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## EDITOR



Dr. A.P. Singh

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## Message from President



Dear Distinguished Members,

I hope you all are doing well with your families. As you are aware, the prestigious annual Conference of our society, IGC 2023, on the theme "Geotechnical Advances in Sustainable Infrastructure Development and Risk Reduction", is scheduled to be held from 14th to 16th December 2023 at IIT Roorkee by IGS Roorkee chapter. I request all your support and active participation in all events of IGC 2023 and make it a grand success.

I am happy to inform you that our dynamic website has been launched by the hard work and dedication of the SC1 team led by Ms Aarti Bhargava on September 30, 2023 and I congratulate the team for the same. The IGS membership development committee SC2 team, under Prof. S.K. Prasad, is working hard to improve the memberships by providing a 25% discount on the fees as part of the 75th year celebrations. I am delighted to inform that during this trimester, 133 members enrolled as life members in our society. The professional forum SC3 team led by Dr. Jaykumar Shukla is planning various activities jointly with other organizations. As part of the same, we had meeting with Er. Partha Gangopadhyay,

National President of Indian Concrete Institute, on August 4, 2023, to organize a national event in collaboration with IGS and ICI in 2024. I appreciate the efforts of the finance committee SC4 team led by Er. Ravi Kiran for the financial budget planning of the society and guidance in fund management.

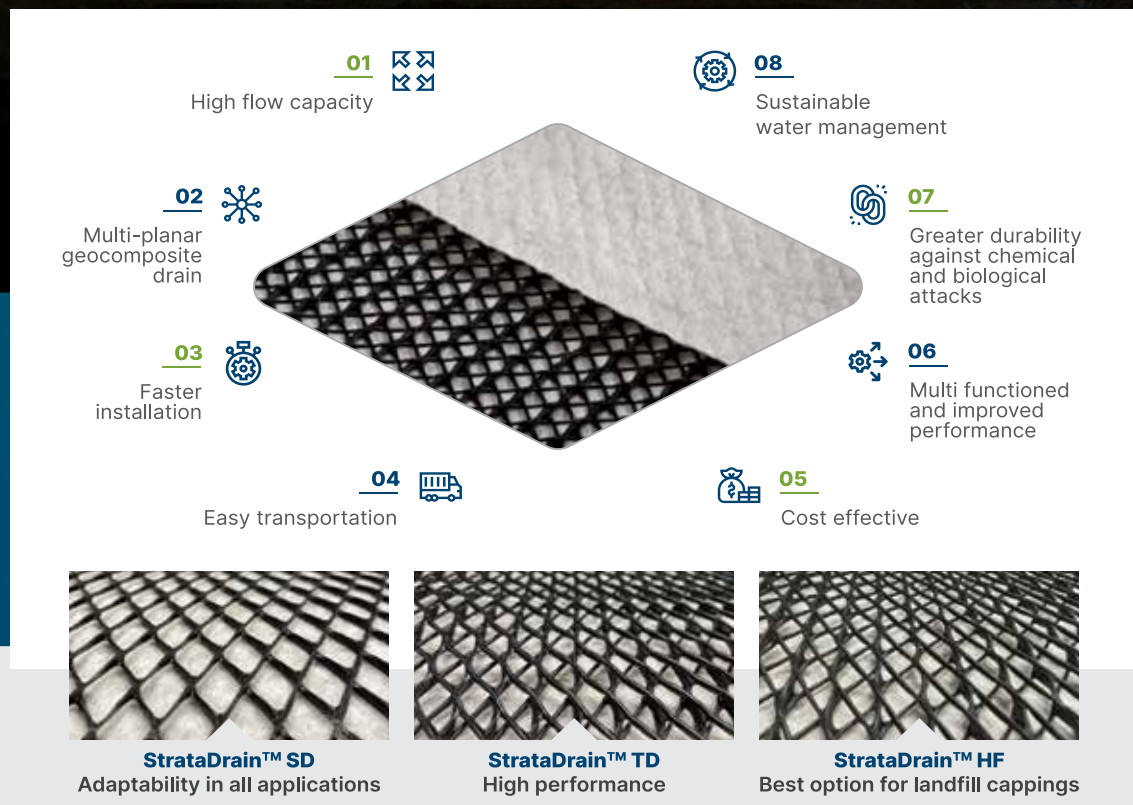
The ISSMGE TC – 220 monthly lecture series was inaugurated on August 25, 2023, and Dr. Anil Yunatci, an esteemed expert from GeoDestek Ltd, Turkey, delivered the inaugural session. Dr. Lin Wang, Chuo Kaihatsu Corporation, Japan, was the speaker for the second session. I sincerely appreciate the SC5 team led by Dr. D Neelima Satyam for coordinating the webinar series. I was privileged to lead the Indian Geotechnical Society team to attend the 17th Asian Regional Conference organized by Kazakhstan Geotechnical Society (KGS) at Hotel Hilton, Astana, from 14th to 18th August 2023. The theme of the Conference was "Smart Geotechnics for Smart Societies". About 600 delegates from various geotechnical societies under ISSMGE attended the Conference. From India, 43 papers were submitted, and 28 delegates participated in the Conference. I am happy to inform you all that India has won the bid for hosting the 1st Geotech Asia to be held in 2025 during the Asian Council Meeting held at Astana, Kazakhstan. The idea of starting Geotech Asia was proposed and won with 18-3 voting of the member countries present. After India's presentation for 1st Geotech Asia, all the other three contestants, Thailand, Iran and Pakistan, agreed not to challenge India for 1st Geotech Asia. After the 1st Geotech Asia was awarded to India, India withdrew from the 18th

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# Presenting Strata's Latest Offering: **Another World-Class Quality Product – StrataDrain™**

## StrataDrain™, a new-age drainage composite.

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ARC contest, and the voting was carried out. For the 18th ARC, Thailand got thirteen votes, Iran got eight votes and Pakistan got three votes. 1st Geotech Asia will be held in Mumbai, India in 2025, and 18th ARC will be held in Thailand in 2027. I request all your support to host the mega event in Mumbai in 2025. Based on the invitation from the Moscow State University of Civil Engineering, I had the opportunity to participate in the "International Scientific and Practical Symposium: The Future of the Construction Industry: Challenges and Development Prospects" organized from 18th to 22nd September 2023 in Moscow, Russia. Congratulations to the SC6 team led by Dr. A. Murali Krishna for networking among the various International Geotechnical societies.

Development plans for revitalizing existing chapters are progressing well with the SC7 team under the convenorship of Prof. Ashish Juneja. IGS Srinagar chapter organized a five-day ISSMGE TC -216 Workshop on "Advancements in Geotechnical and Foundation Engineering for difficult ground conditions" at NIT Srinagar held from 26th to 30th July 2023. IGS-Kolkata Chapter has organized a National Seminar titled "Geotechnics-Recent Advancement in Research and Practice" from August 4-5, 2023, at Jadavpur University. Local chapters of Maharashtra organized "MAHAFFEST", from September 12-13, 2023. A one-day workshop on Sustainable Geotechnical infrastructure was organized by the IGS Jalandhar chapter at NIT Jalandhar on September 29, 2023. I had the opportunity to attend the above programs and I congratulate the organizers for the excellent events and their sincere efforts. The 52nd chapter of our society, the IGS Ujjain Chapter, was inaugurated at Ujjain Engineering College on September 5, 2023, and I would like to appreciate the efforts taken by Dr D Neelima Satyam for the formation of the new chapter at Ujjain. Planning for opening new chapters in Dehradun, Lucknow, Palghat, Madurai, Gorakhpur, and Aligarh are in progress, and I congratulate the efforts of SC8 team led by Prof. Dasaka Murthy. During this period, numerous student chapters were opened, and various activities were conducted by Students' chapters across the Country. I was able to attend the sessions organized by the IGS students chapter at Jamia Millia Islamia Central University, Delhi, on September 1, 2023, under the leadership of Ms. Aarti Bhargava and Dr. Manna. The 10th Students chapter of IGS Thiruvananthapuram was inaugurated at TKMCE Kollam on September 14, 2023. I appreciate the efforts put forward by the office bearers of the IGS Thiruvananthapuram chapter, and Congratulations to the new student's chapter at TKMCE, Kollam. Thanks to the SC9 team led by Prof. G. Sridevi for guiding the establishment of new student chapters and coming up with Geovislesha 2023 for unleashing the skills in Geotechnical Engineering for Undergraduate Civil Engineering Students.

Bright Spark Lecture session is introduced in IGC 2023 to promote young members of IGS and ISSMGE below 36 years as per the guidelines of ISSMGE, and the nominations are invited for the same. I appreciate the efforts of the SC10 team, led by Prof. T. Thyagaraj, for promoting the young geotechnical engineering fraternity. Documentation and guidance for the IGS virtual university are underway under the direction of Prof. B.K. Maheshwari and the SC11 team. I appreciate the efforts of the SC12 team under the leadership of Prof. Deepankar Choudhury

for the timely review and publication of the Journal papers. I am grateful to Prof. Ravi Jakka and the SC13 team for their efforts in publishing the IGS newsletter with insightful information. On September 1, 2023, I, along with Dr. A.P Singh, Hon. Secretary, attended the meeting at the office of the Bureau of Indian Standards with Shri Sanjay Pant, Dy Director General and team to ensure active representation from IGS in the revision and formulation of IS Codes connected with Geotechnical Engineering and also ensuring adequate representation of IGS in the committee for revision of National Building Code. I want to express my gratitude to the team SC14 led by Prof. H.N. Ramesh for their tireless efforts in assisting with BIS activities.

I appreciate the efforts of the SC15 team led by Prof. G. Madhavi Latha for planning a special issue of the book on 75 Influential Indian Women in Geotechnical Engineering and for planning the "Women Indian Geotechnical Conference-Geotechnics Towards Sustainable and Resilient Infrastructure" to be held during March 8-9, 2024 at the College of Engineering Guindy Campus, Chennai. SC16 team, under the leadership of Dr. A.P Singh, Hon. Secretary IGS and Dr. Abhay Gupta, is trying to select plots in Delhi for the proposed IGS House. I congratulate the efforts of the team. SC17 team led by Prof. R. Ayothiraman is putting efforts into forming the Indian Geotechnical Institute and the Skill Development Committee, led by Prof. K. Balan, and the team of SC18 is planning to come up with a training programme for laboratory personnel and the field investigation crew. A meeting with NABL is planned to be conducted in November to improve the quality of Geotechnical laboratory tests and to standardize the process. I am thankful for the efforts of the SC19 team under the direction of Prof. K. Muthukkumaran. To improve the visibility of society's activities, the Social Media Development team SC20, led by Prof. Anitha G. Pillai, is making an excellent effort. Under the direction of Prof. N. Unnikrishnan and team SC21, discussions are underway to create a data bank of soil profiles across the country from reliable sources. It is encouraging to see that the SC 22 software operations committee, under the direction of Prof. Ravi Shankar Jakka, is working to assist the student body with their academic needs.

As part of the 75th year Celebration of our society, many chapters have organized at least one major event. I appreciate the efforts of the 75th year Celebration Committee SC23 under the leadership of Prof. N.K. Samadhiya. The local chapters in Karnataka are planning to conduct Karnataka Geotechnical Fusion KGF 2023 at Mysuru on November 4, 2023, and the local chapters in Kerala are planning to conduct GeoKeralam on 17 and 18 November 2023 at Kochi. I wish all success for the events. The 236th National Executive committee meeting was held at NIT Jalandhar and thanks to the team of IGS Jalandhar chapter led by Prof. A.K Agnihotri, Chairman and Dr. H.S. Chore, convenor and NIT Jalandhar for hosting the meeting.

As the prestigious annual Conference IGC 2023 at IIT Roorkee is approaching, I request the wholehearted support of our members to make the Conference a grand success. I conclude with the quote of Napoleon Hill, "A Goal is a dream with a deadline". With the new team, we will try to make the dream goal a reality, and I believe that "Together We Can and We Will".

**Dr. Anil Joseph**



# (Mis) Practice of Geotechnical Engineering – An Example

Madhira R. Madhav

AICTE-INAE Fellow, Professor Emeritus, and Visiting Professor, IIT Hyderabad and JNTUH, India

The following plots (Figure 1 (a) and (b)) were submitted by a leading geotechnical investigations agency for a site in Kerala. Maximum past consolidation stress of 50 kPa was recommended improperly without drawing the tangent to the virgin part of the void ratio – log effective stress curve. It is obvious the proper method (Casagrande, as shown in Figure 2) was ignored, or the person/agency unaware of it.

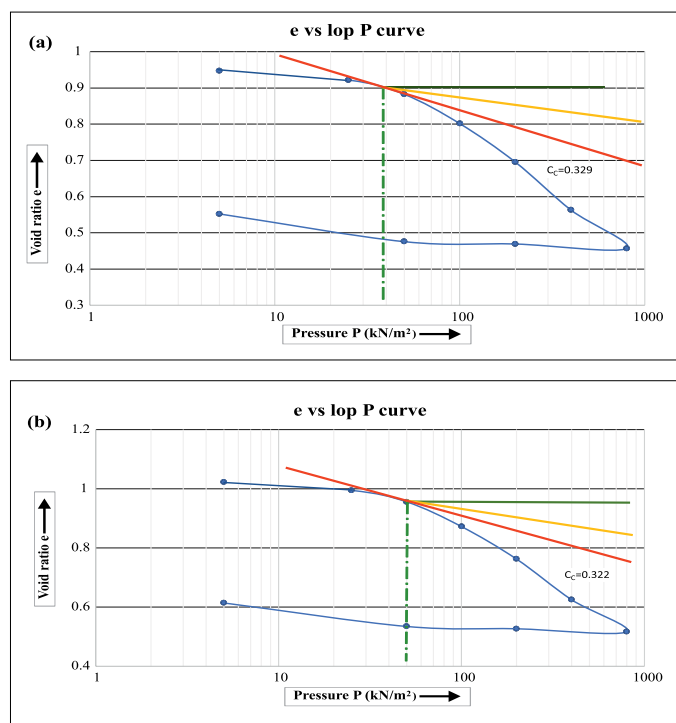


Fig. 1: e – log  $p'$  plots and estimation of maximum past stress

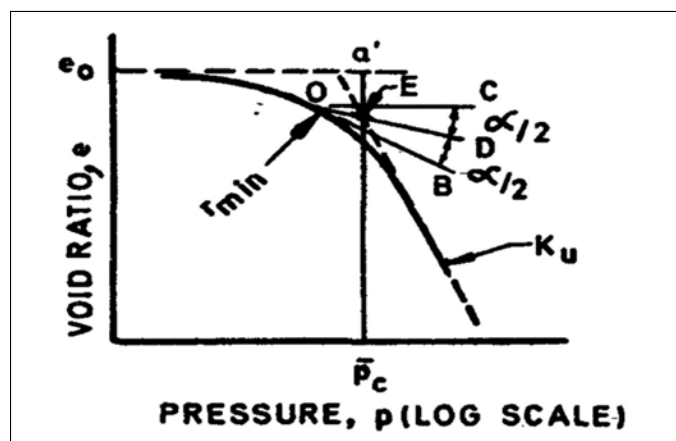


Fig. 2: Graphical construction for determining past maximum pressure  $\bar{P}_c$  from e-log  $p$  curve

In Casagrande method the straight line fitted to the virgin part (away from the point of maximum curvature) of the plot (Figure 2) is extended and the point of intersection with bisector identifies the stress corresponding to the maximum past stress.

The maximum past consolidation stress of 70 to 72 kPa is obtained (Figures 3 (a) to (b)) based on the Casagrande method. The sad part is, if the client is unaware of this mistake, it would make a big difference to the practice

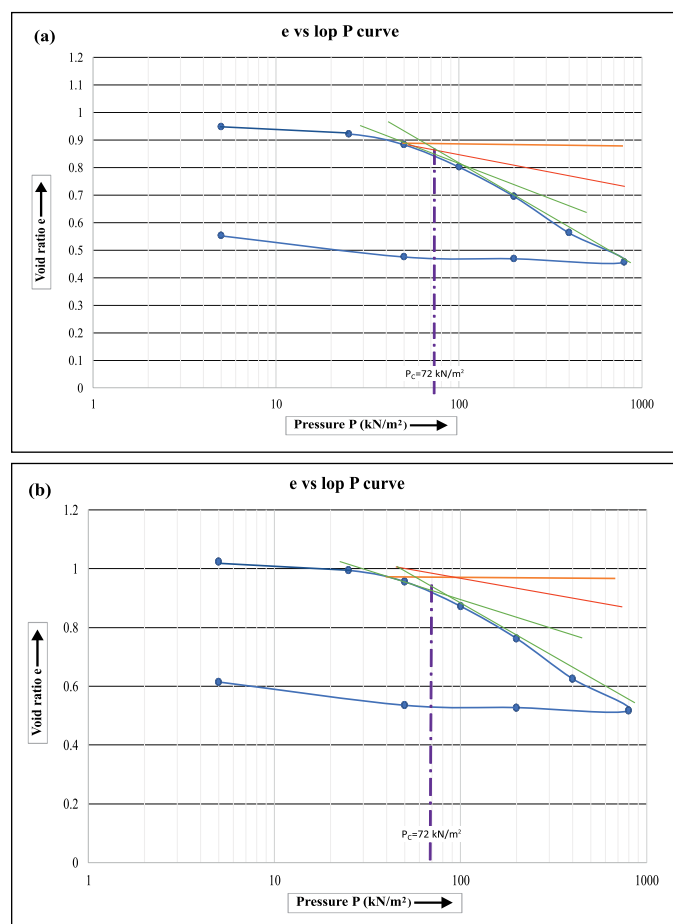


Fig. 3 (a and b): Proper estimation of maximum past stress

IGS is doing a good professional job with fifty Local chapters and several more Student chapters. It would be nice if one can audit the Geotechnical Investigations agencies for better Geotechnical practice!!!!

**Acknowledgment:** The help of Dr. Baadiga Ramu of IIT, Patna, in formatting this note is gratefully acknowledged.

\* Corresponding author: Professor Emeritus, and Visiting Professor, JNTUH & IIT Hyderabad, India, Email: madhavmr@gmail.com

# SUMMARY OF Ph.D THESES

## Title of Thesis:

**Shear Behaviour of GCL-Sand Interfaces under Static and Dynamic Conditions**

**Name of the Student:** Dr. Anjali G. Pillai

**Supervisor:** Prof. Gali Madhavi Latha

**Department & Institute:** Department of Civil Engineering, Indian Institute of Science, Bengaluru, Karnataka



**SUMMARY:** This thesis examines the GCL-sand interfacial shear response under dry and hydrated conditions applied to landfill subgrades and covers. Through modified direct shear tests, inclined plane tests, repeated shear tests and shaking table tests on GCL-sand interfaces with a natural sand and a manufactured sand and image analyses to quantify the particle shape and surface changes to GCL, the study proposes the use of manufactured sand as a suitable replacement to river sand in landfill construction. The microscopic interactions including sand particle entrapment, bentonite extrusion and fibre elongation and rupture are analyzed and related to the macroscopic shear response.

## Title of Thesis:

**Experimental and Numerical Investigations on Finned Pile Foundations Subjected to Lateral Loads**

**Name of the Student:** Dr. Pankaj Bariker

**Supervisor:** Dr. Sreevalsa Kolathayar

**Department & Institute:** National Institute of Technology Karnataka, Surathkal, Karnataka



**SUMMARY:** This innovative thesis introduces a novel finned pile foundation system as an eco-friendly alternative to conventional pile foundations, designed to enhance lateral load resistance and optimize pile group efficiency. Aligned with Sustainable Development Goals (SDGs), particularly SDG9 and SDG11, it aims to reduce carbon emissions by minimizing carbon-intensive materials in infrastructure. Modifying regular piles addresses infrastructure demands with reduced concrete and steel consumption. The research evaluates the lateral load resistance of finned piles in onshore applications, comparing their performance against traditional pile mats for high-rise buildings and wind turbines under seismic conditions. Combining physical experiments and numerical analyses, it identifies optimal fin parameters, highlighting finned piles' superior performance and cost-efficiency, utilizing only 55% of materials compared to regular piles.

## Title of Thesis:

**Study on the Behavior of Helical Pile in Soft Clay under Combined Uplift and Lateral Loading**

**Name of Student:** Dr. V. Vignesh

**Supervisor:** Dr. M. Muthukumar

**Department & Institute:** Department of Structural and Geotechnical Engineering, School of Civil Engineering, Vellore Institute of Technology, Vellore



**SUMMARY:** This study focused on analyzing the performance of single and group helical piles (SHP and GHP) in soft clayey soil under various loading conditions. A FE model in Plaxis 3D was developed and verified through laboratory testing. For SHPs, increasing the embedment depth ratio and the number of helical plates improved their capacities under individual loading. In combined loading, lateral load had minimal impact on uplift capacity, but uplift load significantly affected lateral response. For GHPs, group performance decreased as pile spacing ratio increased, with a critical spacing ratio of 3D for most configurations. Beyond that, the lateral capacity decreased.

**Title of Thesis:****Constitutive Modeling of Underground Mines for Dynamic Loads using Disturbed State Concept****Name of Student:** Dr. Ilyas Ahmad Bhat**Supervisor:** Dr. S. Rupali and Prof. Arvind Kumar Agnihotri**Department & Institute:** Dr. B. R. Ambedkar National Institute of Technology Jalandhar, Punjab

**SUMMARY:** The study investigates coal microstructure using various techniques and evaluates its properties, including compressive and shear strength. It employs numerical models like Mohr Columb and Holmquist Johnson Cook for large-scale underground coal mine analysis. Experiments involve swinging pendulum and head drop impact tests, revealing increased brittleness with higher impact velocity. Finite element analysis in Abaqus with the Holmquist Johnson Cook model aligns well with experimental results. The study focuses on developing 1D, 2D, and 3D numerical models using element-free Galerkin and Disturbed State Concept in MATLAB. These models show excellent agreement with experimental results and assess shotcreting's positive impact on coal mine strength, concluding a 30% average increase in fracture strength.

**Title of Thesis:****Development of Optimal Operating Policies for Reservoirs using Evolutionary Algorithms****Name of Student:** Dr. Mugdha Trivedi**Supervisor:** Dr. R.K. Shrivastava**Department & Institute:** Department of Civil Engineering, Rajiv Gandhi Prodyogiki Vishwavidyalaya, Bhopal, Madhya Pradesh

**SUMMARY:** In the present study, strategies are designed to check the deficit in the availability of water for an existing reservoir, using a novel approach of standard PSO combining two variants i.e., elitism and variational parameters, namely Time-Variant Elitist Mutation Multi-Objective Particle Swarm Optimization algorithm, Cuckoo Search Algorithm and Weed Optimization Algorithm. The proposed approach is applied to the Indira Sagar Reservoir situated in the Khandwa district, Madhya Pradesh, India. The performance of the models is compared critically based on the results. The results obtained can help the managers of the Indira Sagar Reservoir plan better strategies in the future.

**Title of Thesis:****Behavior of Dual Layered Encased Stone Columns in Loose Sand under Shear Load****Name of Student:** Dr. Akash Jaiswal**Supervisor:** Dr. Rakesh Kumar**Department & Institute:** Civil Engineering Department, Maulana Azad National Institute of Technology (MANIT), Bhopal

**SUMMARY:** This thesis investigates the need for effective ground improvement techniques in response to rapid urbanization. It focuses on stone columns as a method to enhance weak soil stability. The study explores the potential of dual-layered encasement to improve shear resistance in stone columns under various pressures. Experimental tests and numerical modeling using Plaxis-3D software were conducted for validation. Findings reveal that dual-layered encased stone columns exhibit superior lateral load capacity and enhanced shear strength parameters compared to conventional methods. The study suggests that this approach is beneficial for areas prone to lateral load-induced failures, such as beneath embankments or at column corners in construction projects, offering valuable insights for geotechnical engineering applications.

**Title of Thesis:****Analysis of Buried Pipelines Subjected to Ground Deformation, Seismic Landslide, Underground Explosion and Traffic Loads****Name of Student:** Dr. Chaidul Haque Chaudhuri**Supervisor:** Prof. Deepankar Choudhury**Department & Institute:** Department of Civil Engineering, Indian Institute of Technology Bombay (IITB), Maharashtra

**SUMMARY:** The present study proposed various semi-analytical and analytical closed-form solutions for buried pipelines subjected to geo-hazards such as earthquake-induced permanent ground deformation, seismic landslide, and man-made induced loading scenarios such as pipe bursting induced ground deformation, blast loads and traffic loads. The possible mitigation techniques are also studied through an analytical approach for protecting the underground pipelines from explosion and traffic loads using the concepts of double-beam and triple-beam models, respectively. The proposed simplified closed-form solutions can be useful in industrial applications or the preliminary design stage of buried pipelines to get quick and reliable results.

**Title of Thesis:**

**Numerical Study on Embankments Resting on Liquefiable Soil with Mitigation Measures**

**Name of Student:** Dr. Abhijit Chakraborty

**Supervisor:** Prof. Vishwas A. Sawant

**Department & Institute:** Department of Civil Engineering, Indian Institute of Technology Roorkee, Uttarakhand



**SUMMARY:** Highway infrastructures when built on liquefiable soil layer can be a cause of disruption when underlying foundation soil liquefies during earthquake. Finite element modeling of embankment resting on liquefiable soil with different mitigation methods (stone column, densification of foundation soil, hybrid pile-stone column, gravel berms along the embankment slopes) are developed to investigate the efficacy of mitigation methods under various earthquake loading conditions. For simulating liquefaction behaviour the UBC3D-PLM constitutive model has been adopted. Emphasis has been given to effect of re-liquefaction under sequential ground motions and fragility behaviour of embankment for different embankment geometry and foundation soil properties.

**Title of Thesis:**

**Parametric Study on Dynamic Characterization of Homogeneous and Stratified Soil-Ash Deposit Under Low-Strain and High-Strain Conditions**

**Name of Student:** Dr. Amit Kumar Ram

**Supervisor:** Dr. Supriya Mohanty

**Department & Institute:** Department of Civil Engineering, Indian Institute of Technology (Banaras Hindu University), Varanasi, Uttar Pradesh.



**SUMMARY:** The production of large amounts of coal ash and its land requirements for disposal is an alarming situation for the present scenario. Its bulk utilization is the major point of concern and that can only be possible by broadening its application area such as; embankment fill material, subgrade/sub-base material, foundation material for construction etc. In the present study, an attempt has been made to examine the insight behavior of the fly ash, local soil and its combination. In order to simulate the realistic field condition, the interaction between the fly ash and local soil has also been investigated in the stratified form. Furthermore, along with the comprehensive physical, geotechnical, and chemical assessment, the dynamic behavior and liquefaction susceptibility of the homogeneous and stratified soil-ash deposits have been examined under large and small-strain conditions.

**Title of Thesis:**

**Assessment of Environmental Impact of Un-engineered Aquaculture Ponds in the Delta Region of Andhra Pradesh**

**Name of Student:** Dr. T. Vamsi Nagaraju

**Supervisor:** Dr. Sunil B.M. and Dr. Babloo Chaudhary

**Department & Institute:** Department of Civil Engineering, National Institute of Technology Karnataka, Surathkal, Karnataka



**SUMMARY:** In the delta regions of Andhra Pradesh, aquaculture has experienced substantial growth since 2014, contributing to positive economic development. However, this expansion has increased effluents, potentially harming the ecosystem. This study investigates un-engineered aquaculture in the western delta region. The research identifies intensive, semi-intensive, and traditional aquaculture zones, showing a significant increase in aquaculture areas at the expense of agricultural land. Water analysis reveals elevated levels of pollutants, particularly concerning ammonia. The study introduces effective prediction models for ammonia levels, crucial for stakeholders and policymakers, offering accurate and real-time insights to manage inland aquaculture effectively.

**Title of Thesis:**

**Soil-Structure Interactions for Piled-Raft System Supporting Nuclear Power Plant Structures under Static and Seismic Conditions**



**Name of Student:** Dr. Girish Patil

**Supervisor:** Prof. Deepankar Choudhury and Dr. Apurba Mondal

**Department & Institute:** Department of Civil Engineering, Indian Institute of Technology Bombay, Powai, Mumbai, Maharashtra

**SUMMARY:** There has been a rapid development of the nuclear industry in India due to today's concerns for climatic changes due to global warming. The most favorable rocky sites for nuclear power plants (NPP) are exhausted in India and worldwide. Controlling the overall and differential settlement for NPP buildings supported on soil site is a challenging task. Under such a situation, the combined piled raft foundation system (CPRF) can provide the required level of serviceability for NPPs. However, the design framework for the CPRF supporting NPPs subjected to both static and seismic conditions are not yet formulated. In this thesis, analysis and design approach under static and seismic condition has been proposed for a total of eight studies covering behavior of CPRF of NPP. The approach proposed can be used to determine the seismic margin for NPP under a beyond-design basis earthquake scenario. The present thesis can also help to formulate the design guidelines for CPRF-supported nuclear reactors on soil site in India and worldwide.

**Title of Thesis:**

**Data Driven Spatio-Temporal Prediction of Landslide Susceptibility for the Himalayan Region**



**Name of Student:** Dr. Ankit Tyagi

**Supervisor:** Dr. Naveen James and Dr. Reet Kamal Tiwari

**Department & Institute:** Department of Civil Engineering, Indian Institute of Technology Ropar, Punjab

**SUMMARY:** The current study focuses on accurate prediction of future landslide hotspot zones. Here, we have identified the key landslide causing factors and used them for predicting future landslide events. The susceptibility maps generated in this study predict future landslide hotspot zones. The study region of Tehri, Uttarakhand state of India, was chosen for the research. Further, the Himachal Pradesh state of India and its two prominent landslide prone sites of Chamba and Bhuntar were used to validate the results. The results conclude that unplanned rapid urbanization will lead to an increase in landslide susceptibility in the future. The study also concludes that the change in climate scenarios will increase the intensity of the dynamic variables like rainfall and temperature, ultimately increasing the very high landslide susceptibility zone by 8%. As the forcing scenarios increase, the climate variables and landslide hotspot zones also increase for the year 2050. These accurate prediction of landslide zones and their future projections can help land use policymakers restrict the urbanization growth in high landslide risk zones and ensure sustainable development. Further, these results can be used to revise current land use policies and develop mitigation measures for Landslide Risk Reduction (LRR).

## ISSMGE BULLETIN

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## CONFERENCE REPORTS AND CHAPTER NEWS

### IGS Agartala Chapter

A Technical Talk on “Sustainability and its Assessment in Geotechnical Engineering” was delivered by Prof. Dipanjan Basu, Professor, University of Waterloo, Canada on 21/07/2023 in Hybrid mode. The program was organized by Civil Engineering



Delivery of Technical Talk

Department, NIT Agartala in association with IGS Agartala Chapter. More than 75 delegates actively participated in the Program. Prof. Sujit Kumar Pal, Professor, Department of Civil Engineering, National Institute of Technology was the organizing Chairman of the program.

### IGS Aurangabad Chapter

One week STTP on Advances in Rock Engineering is organized by IGS Aurangabad Chapter and Civil Engineering Department, MIT on 21-25 August 2023.

The online STTP started with a formal inauguration session on 21st August 2023. This included a welcome speech by the Convener; Dr. M.S. Dixit (Associate Professor, MIT Aurangabad & Secretary IGS Aurangabad chapter) followed by introductory speech by Dr. A.P. Singh, Hon. Secretary, IGS-Delhi and Dr. Santosh Bhosle-Director, MIT. Dr. P.R. Awsarmal HCED briefed about the Department. Dr. Uttam Kalwane-Chairman, IGS Aurangabad Chapter briefed about the activities of IGS Aurangabad Chapter. Dr. Saurav Rukhaiyar, Sr. Scientist, CSIR-CIMFR, Nagpur was the chief guest and addressed the participants and highlighted the importance of Rock Engineering in the field of research and innovation.

Expert talks included: Dr. Saurav

Rukhaiyar, Sr. Scientist, CSIR-CIMFR, Nagpur presented on the topic True Triaxial Strength Behaviour of Rock, Dr. Aditya Singh, IIT Roorkee gave the talk on the topic Engineering Behaviour of Rocks and Rock Masses, Dr. K. S. Rao, Professor, IIT, Delhi presented on the topic Role of Geomechanical Classification Systems in Rock Engineering Practice, Dr. Swapnil Mishra, IIT, Dhanbad explained on Static and Dynamic Failure of Underground Structures in Fragile Rock Masses, Mr. Saurabh Chaurasia, TechFab India, Delhi detailed on the topic Current Techniques of Rockfall and Slope Mitigation works, Dr. Ashish Juneja, IIT, Bombay dealt on Characterization of Vesicular Basalts of Western Maharashtra, Dr. Madhavi Latha Gali, IISc, Bangalore presented Challenging Experiences of Making Chenab Bridge, Er. Annapoorni Iyer, Engosym Consultants, Pune discussed on Rock Fall Mitigation Measures and Codal Guidelines, Dr. Ashwini Indulkar, Pune detailed on the topic Stress Management, Dr. Jay Aglawe,

RockMech IT Solutions, Pvt. Ltd., Nagpur provided Introduction to Itasca Software for Advanced Geotechnical Analysis, Dr. N. Kumar Pitchumani, AECOM India Pvt. Ltd., Chennai presented Challenges in Underground Metro Construction, and Dr. Vinay Bhushan Chauhan, MMMUT, Gorakhpur dealt on the topic Understanding the Interaction of Shallow Foundations with Circular Cavities in Rocks: Observations and Recommendations.

The course ‘Rock Engineering’ gave an overall idea to the participants about the rock mechanics and its applications. 69 participants registered for this STTP from 19 states out of which 54% were faculty members, 32% Industry person/Consultants, 7% Research Scholars and 7% PG Students.

Huge efforts were taken for successfully organizing this STTP by Prof. Yogesh Shermale, Prof. Archana Pathak, Prof. Alka Wevhal, Prof. S. T. Patil, Prof. S.N. Pawar, Prof. A.P. Jaiswal, Prof. A.A. Ratnaparkhi and Prof. Sagar Deshmukh.

### IGS Dhanbad Chapter

On 28/07/2023, IIT (ISM) Dhanbad conducted a thought-provoking lecture on "Sustainability and its Assessment in Geotechnical Engineering" by Professor Dipanjan Basu of the University of Waterloo, Canada. In his talk Prof. Basu emphasized the critical role that sustainability plays in geotechnical infrastructure. In relation to geotechnical engineering projects, he discussed in depth about the 4Es of sustainability: Engineering, economy, environment, and equity. The IIT (ISM) Dhanbad

students had a stimulating conversation with Prof. Basu during which they learned insightful tips for implementing sustainable practices into their next engineering endeavours. The talk had

a long-lasting effect on the students, motivating them to put sustainability first when pursuing careers. This lecture was organized under the aegis of Indian Geotechnical Society Dhanbad Chapter.



## IGS Guntur Chapter

Two-day National Workshop on “Geosynthetics for Infrastructure Sustainability and Resilience (GEOINSURE 2023)” was designed and conducted by the Dept. of Civil Engineering, Sasi Institute of Technology and Engineering, Tadepalligudem in association with IGS Guntur chapter on 4th August and 5th August 2023 to impart field knowledge to the young students, faculty and engineers, on applications of geosynthetics, fostering the development of sustainable and resilient infrastructure. The workshop covered various topics on Geosynthetics and their applications in various fields such as the construction of airport and runway embankments, eco-friendly and sustainable solutions using geosynthetics in River Bank Protection, Drainage and Reinforced Soil Walls & Slopes and the use of geosynthetics with natural fibres.

Around 133 students, young engineers, research scholars and professionals attended this two-day workshop. All



the lectures were supported by real field scenarios, and data analyses were discussed from the field studies. The participating students in this workshop immensely benefitted from the interaction with the experts.

IGS Student Chapter at Sasi Institute of Technology & Engineering with around 83 student members was inaugurated by Dr. M. Rama Rao, Secretary, IGS Guntur Chapter & Professor & HoD, Civil Engg, SITE, on 23rd August, 2023.

Mr. P. Thrimurti Raju, Managing Partner, Sreecoir Industries, Tadepalligudem delivered a lecture on “Application of geosynthetics and Natural fibres in reinforced soil walls and slopes”. The speaker explained the installation scheme, sequence of filling and cell assembly of Geocell Mattresses, Reinforced soil Slopes using Geocomposite, and Erosion control by coir. Students also undertook a field visit to Sreecoir Industries, Tadepalligudem.

## IGS Hyderabad Chapter

The Civil Engineering Department of Vidya Jyothi Institute of Technology (VJIT) organized Two Week Internship on Software applications in Geotechnical and structural Engineering from September 19th to October 3rd 2023 under VJIT IGS student chapter.

In this 2 week internship focus was given on Geotechnical software and Building Information Modeling (BIM) using Revit. Dr. Pallavi Badry (H.O.D), Department of Civil Engineering, explained modelling of Retaining

wall, pile group settlement analysis, Embankment analysis etc. using GEO5 Software tool. Mr. Suraj from Gryphon Academy Pune introduced BIM through Revit Architecture and Revit Structures. He also executed few case studies models through BIM. The 2-week skill development program organized by the department was found to be way very beneficial to the students’ considering their placement and projects tasks.

Construction site visits are the most powerful learning aid in the civil Engineering to explain the concept practically. A site visit was carried

out to understand the construction of Foundation and foundation design for the 3rd year students as part of their chapter activity. Students actively interacted with site Supervisors to clarify their doubts and gained knowledge.



Foundation stage site of VJIT Hostel Aziz Nagar Hyderabad

Department of Civil Engineering - IGS student chapter organized the one-day webinar on Introduction to Geotechnical Engineering and Digitization of Investigation Data to celebrate Terzaghi Day on the eve of the Birth Anniversary of Karl von Terzaghi, Father of Soil Mechanics. (October 2, 2023). The





resource person for the webinar is Mr. C. Prasanth Kumar, Deputy Geotechnical Engineer, JACOBS, Hyderabad.

Mr. Prashanth has contributed more than 7 years of expertise to a multitude of noteworthy projects, both nationally and internationally. His lecture focused on various case studies of Geotechnical failures, practical importance of soil investigation, the methods implemented for exploration, and software used to digitize investigation data. Participants from various institutes including faculty and students attended the webinar and a got a good grasp of Geotechnical perspective for development of infrastructure.



Photograph of the event

## IGS Indore Chapter

International conference on “Numerical and Experimental Techniques on Sustainable and Disaster Resilient Infrastructure” was organized by Civil Engineering Department of IPS academy, Institute of Engineering and Science in association with Indian Geotechnical Society from 8th to 9th September 2023.

Eminent keynote speakers from Russia, (Dr. Vasily Golubev, Dr. Ekaterina Beklemeyseva, Moscow Institute of Physics and Technology Russia and Dr. Sergey Kuznetsov, Institute of Problems in Mechanics Moscow), New Zealand (Dr. Rajesh Dhakal, University of Canterbury and Dr. S. R. Uma, GNS Science Newzeland), Germany (Dr. Minu Tresea Abraham RWTH, Aachen University, Germany), China (Dr. Ankit



Garg, Shantou University China) and India (Dr. Neelima Satyam, IIT Indore, Dr. Hemant Kaushik, IIT Guwahati, Dr. A. P. Singh, Explore Engineering Consultants Pvt. Ltd, New Delhi and Dr. Rakesh Khare, Shri G.S.I.T.S, Indore)

shared their knowledge, experience and research in developing sustainable infrastructure that can withstand natural disasters.

Six technical sessions which included twelve keynote speeches and thirty research papers were conducted. The sessions covered wide range of topics such as Advanced numerical methods for predicting the behaviour of infrastructure under extreme loading conditions, experimental techniques for evaluating the performance of infrastructure materials and systems and case studies of successful infrastructure resilience projects from around the world.

The convener and co-convener of conference were Dr. Amit Sharma and Professor Vijay Baradiya. More than 250 Participants had attended the conference.



## IGS Jabalpur Chapter

Sanrachana-2K23, a Two-day event was conducted by the students' chapter of Takshshila Institute of Engineering and Technology Jabalpur on 14th - 15th September 2023. Various technical activities were organized by Civil Engineering students like Technical quiz, Model making, Portrait & Posters making, Sketching, Plantation, Exhibition display, etc. . Chief Guest of the valedictory function Dr. Rajeev Chandak, Vice Chairman of IGS Jabalpur Chapter and Head of Jabalpur Engineering College distributed certificates to the participants. Dr. Chandak also explained the career opportunities to the students in the field of Geotechnical Engineering. Takshshila College Management, Departments



IGS Jabalpur TIET Students' Chapter activities in Sanrachna 2K23

HoDs, and faculty members were present for the two-day event.

In memory of Bharat Ratna Dr. Mokshgundam Vishvesharaia, the 56th Engineer's Day on 15th September 2023 was celebrated jointly by IGS Jabalpur Chapter, ICI Jabalpur Center

and Practicing Engineers Association Jabalpur M.P. In a very glorious function IGS Jabalpur Chapter's Chairman Er. Sanjiv Verma Salil, Vice Chairman Er. R.K. Shrivastava along with the chairpersons of the other two forums Dr. Manish Dubey, Dr. Praveen Beohar, Er. Rakesh Rathore were present. Er. Satish Suryavanshi was the guest of the event. Dr. Sanjay Verma Honorary Secretary IGS Jabalpur Chapter explained the celebration of the 75th year of IGS Installation. Dr. Verma also informed upcoming events of IGS in 2023 and various activities conducted by the IGS nationwide. More than 100 technocrats in the field of Geotechnical Engineering, Concrete Industry and Practicing Engineers were honored by the mementos during the event. ACC Ltd. sponsored the event.



56th Engineer's Day Celebration by IGS Jabalpur Chapter

## IGS Kochi Chapter

IGS Kochi Chapter have been conducting a series of webinars, named Rendezvous since July 2021 and 17 lectures were organized on zoom platform till November 2022 as a curtain raiser for the prestigious IGC 2022 conducted at Kochi.

With the success of this series, the same was resumed as Rendezvous 2.0 and

the first Technical lecture, 18th in the series was delivered by Dr. Durgadevagi Shanmugavel, Asst. Professor, Dept. of Civil Engg., SRM Institute of Science and Technology, Chennai on 3rd July 2023. Her lecture was on Revamping the Traditional Heritage.

The next webinar, 19th of the series was delivered by Dr. Jayamohan. J., Vice Professor and Principal (In-charge),

LBS Institute of Technology for Women, Thiruvananthapuram. His topic was Reinforced Soil Structures – Some case Studies and this is delivered on 7th August 2023.

20th Webinar in the Rendezvous 2.0 series was delivered by Dr. N. Kumar Pitchumani on 4th September 2023. His topic was Ground Improvement of Soft Clays using PVD.





## IGS Kolkata Chapter

Kolkata Chapter of IGS proudly hosted the National Seminar on Geotechnics – Recent Advancement in Research and Practice (Geo – RAPP 2023) on 4th and 5th August, 2023 at Dr. H. L. Roy Building, Jadavpur University, Jadavpur, Kolkata, West Bengal, India.

Eminent personality from Industry, Mr. Amitava Ghosal, one of key member related to Kolkata Metro, was the Chief Guest along with the honourable President of IGS Dr. Anil Joseph and IGS Honorary Secretary Dr. A. P. Singh.

More than 150 distinguished personalities from industries and institutes, related to the Geotechnical Engineering, graced the seminar with their valuable presence. The seminar was divided into five technical sessions where more than thirty participants got chance to present their papers on different relevant topics related to recent advancement and researches in this field. There were three key note deliberations and six corporate presentations.

At the conclusion of the seminar, a high level panel of experts on Geotechnical Engineering, after a thorough review,

selected top five best papers.

The expert panel overwhelmingly recognized the authors and acknowledged all sources and contributors included in their works. The panel of experts is of the opinion that papers presented will enhance the discipline and take it to new heights. While announcing the best five papers, the expert panel said that it was very difficult to choose five best papers as all the papers presented in the seminar was rich with knowledge. The authors were highly appreciated for their tireless effort to make their research paper's idea more believable and interesting.

The authors were presented with Certificates and memento in recognition of the work.

The local chapter expressed gratitude towards the practicing engineers, academicians, geologists, geoscientists, Government and public authorities and private organisations for extending their valuable supports and making worthy contribution to the seminar.



## IGS Pune Chapter

IGS Pune Chapter in association with ICI Pune Centre organized an interactive session with veteran and highly respected, Prof. M.S. Shetty. More than 100 practicing professionals and academicians gathered for the memorable evening and participated actively. It was a nice congregation of Geotechnical Engineers and Engineers from Concrete industry.



IGS Pune Chapter team with Prof M S Shetty

Under the leadership of Shri Vikas Patil, Pune Chapter organized a site visit for the students of NICMAR University, Pune to the well-known Chandani Chowk Interchange Project, NH 4, Mumbai-



Site visit with students of NICMAR University, Pune

Bangalore Highway. The visit was aimed to witness the girder launching. As the site is located on a heavy traffic zone area, the launching was scheduled at mid night and so was the site visit! Yes, the students, faculty and IGS Pune Chapter team was at site on midnight of 13th August 2023. Passion to give back to the society!

Dynamic IGS Student Chapter of D.Y. Patil COE, Akurdi, Pune, organized an expert talk on the topic 'Near Surface geophysics applications' and

was delivered by Vice Chairman of IGS Pune Chapter, Dr. Krishnaiah.



Expert session at D.Y. Patil, COE, Akurdi

The event was held on 31st August 2023. The talk emphasized the use of geophysical methods in geotechnical investigations to deliver better and higher resolution subsurface images and provide representative locations for direct measurements.

IGS Pune Chapter proudly opened its 29th student chapter on 1st September 2023 at JSPM'S Narhe Technical campus, Pune. Guest lecture was delivered on the topic 'Landslides and mitigation measures' by Er. Suman Jain. The students were enthusiastic on the opening of the chapter in their premises and assured the EC team to keep the chapter live and dynamic.

IGS Local Chapters of Maharashtra, namely Mumbai, Pune, Sambaji Nagar, Nagpur and Amaravati joined together and organized a grand 2-day event 'Mahafest' to mark the 75 years celebration of establishment of Indian Geotechnical Society. The event was held on 12th and 13th September and was organized by IGS Pune Chapter in lead, supported by other local chapters., Venue was MIT WPU, Kothrud, Pune. Focus of the event was on 'Tunnelling and

Underground Structures' with experts delivering interesting and informative lectures. More than 400 students from various parts of Maharashtra attended and it is noteworthy to mention that more than 50 female students of Pune participated in the event. Competitions for students were held which included Pick and Speak, Poster competition, Quiz. Prizes worth Rs 75,000/- were distributed, winner certificates, participation and volunteer certificates were given to encourage the students and to recognize their participation. The hosts were glad to welcome IGS President, IGS Secretary, Past President IGS, Chairman and Secretary of IGS Mumbai Chapter and Sambaji Nagar Chapter and other eminent guests for the event. The Chief Guest for inaugural session was Mr Sanjay Gupta, MD of KRCL, Guest of Honour for the day, Shri Atul Gadgil, Director Works-Mahametro.

Concrete day and Engineers' Day were celebrated in association with ICI Pune centre on 14th-15th Sept. 2023 at Main Building, SPPU. Concrete day celebrations included project and poster competition for students with exhibition

inauguration showcasing latest technologies and materials related to construction. The event was inaugurated by Dr. Gosavi, VC, SPPU and Dr. Karmalkar, Former VC, SPPU. More than 300 students, academicians and professionals participated in the event.

Engineers' day was celebrated in the memory of Late Shri S.D. Limaye for his remarkable contribution towards KRCL and Pune Metro. The event started with felicitation of 8 Senior Engineering Professionals for their outstanding achievements in the profession by Dr. Karmalkar, Former VC, SPPU and Dr. Aditya Abhyankar, Director, Technology Dept., SPPU. Student competition related to display of innovative start up ideas was conducted. Prizes for all events worth Rs. 65000/- was distributed. The event was well organised by Student Chapter of Anantrao Pawar College of Engineering, Pune.



29th Student Chapter Inauguration



Mahafest-Grand event by IGS Local Chapters of Maharashtra

Engineer's Day Celebration continued for IGS Pune Chapter with an event organized in association with IIBE (Indian Institute of Bridge Engineers) on 16th September 2023. Chief Guest for the Day was Shri Vikas Ramgude, Chief Engineer, PWD Maharashtra who delivered an expert talk on 'Case Study on Flood Damaged Bridges of Maharashtra'. The interesting lecture was well received by the audience which was further take up with intense Q and A session.





## IGS Raipur Chapter

An executive and general body meeting of all the members of IGS Raipur Chapter was held on 03.07.2023 at 3:30 PM in the conference hall of Civil Engineering Dept NIT Raipur. Nomination/Election of office bearers and executive body for the term 2023-2025 was done on the meeting. Opening of 5th IGS Student chapter at BIT Durg was also confirmed in the meeting

Two week hands-on training program was organized by IGS Raipur Chapter in association with Civil Engineering Department, NIT Raipur from 26th June to 7th July, 2023. National Institute of Technology (NIT) Raipur's Department of Civil Engineering in association with Indian Geotechnical Society (IGS) Raipur Chapter had coordinated a two-week training program titled "Testing of Geomaterials for Geotechnical and Transportation Engineering Applications". A valedictory session was organized to conclude the training program on 7th July 2023. Dr. A.P. Singh, Honorary Secretary, IGS and Director Explore Engineering Consultants Pvt. Ltd. New Delhi was the Chief Guest for the function. Prof. (Dr.) Arun Goel, Professor & Head Civil Engineering Department, NIT Kurukshetra was the Guest of Honor. Dr. N.V. Ramana Rao, Director NIT Raipur presided over the function along with gracious presence of Dr. G.D. Ramtekkar, Head of Department, Civil Engineering, Dr. Samir Bajpai, Chairman IGS Raipur Chapter and Dr. R.K. Tripathi, Chairman (Elect) IGS Raipur Chapter. The session began with Dr. S. Bajpai welcoming all the dignitaries and participants.

Dr. L.K. Yadu, Program Coordinator presented the report of the two weeks hands-on training program giving an overview of the program and summarized it. Certificates were distributed by the Chief Guest Dr. A.P. Singh, Dr. N.V. Ramana Rao and Prof. Arun Goel to the participants. Mr. Atul and Mr. Anil presented their feedback about the training program to the audience. They expressed their gratitude to the organizers for organizing such a training program where they have learnt basic and advanced tests of soil



and their importance in the field. Prof. Arun Goel stated that such a type of training program should be organized frequently so that laboratory staff may be updated academically from time to time because of the vital role they play during the laboratory classes in B. Tech and M. Tech courses. Dr. N.V. Ramana Rao emphasized the need to bridge the gap between theory & practice and congratulated the organizers for organizing the training program and not only limiting participation to the academicians, but for field engineers and laboratory staff also. Dr. S.V. Deo, Associate Professor, Civil Engineering introduced the Chief Guest Dr. A.P. Singh to the audience and invited him for his speech. Dr. A.P. Singh, Honorary Secretary IGS, New Delhi talked about the working and administration of society. He requested all the participants to become members of IGS so that they can get directly involved in the different activities of the IGS body. The program concluded with a vote of thanks proposed by Dr. Sandeep Chouksey, Co-coordinator of the program.

IGS student chapter at BIT Durg was inaugurated on 7th July 2023 during the valedictory function of two weeks hands on training program. This is the 5th IGS student chapter associated with IGS Raipur chapter. On this auspicious occasion Dr. A.P. Singh, Honorary Secretary, IGS and Director Explore Engineering Consultants Pvt. Ltd. New Delhi was the Chief Guest for the function. Prof. (Dr.) Arun Goel, Professor & Head Civil Engineering Department, NIT Kurukshetra was the Guest of Honor. Dr. N.V. Ramana Rao, Director NIT Raipur presided over the function with gracious presence of Dr. G.D. Ramtekkar, Head of Department,

Civil Engineering, Dr. Samir Bajpai, Chairman IGS Raipur Chapter and Dr. R. K. Tripathi, Chairman (Elect) IGS Raipur Chapter. The session began with Dr. S. Bajpai welcoming all the dignitaries and participants. Chief Guest Dr. A.P. Singh declared the IGS Student chapter at BIT Durg open.



Foundation day of IGS Raipur chapter was celebrated on 7th July 2023 during the valedictory function of two weeks hands on training program. On this auspicious occasion Dr. A.P. Singh, Honorary Secretary, IGS and Director Explore Engineering Consultants Pvt. Ltd. New Delhi was the Chief Guest for the function. Prof. (Dr.) Arun Goel, Professor & Head Civil Engineering Department, NIT Kurukshetra was the Guest of Honor. Dr. N.V. Ramana Rao, Director NIT Raipur presided over the function with gracious presence of Dr. G.D. Ramtekkar, Head of Department, Civil Engineering, Dr. Samir Bajpai, Chairman IGS Raipur Chapter and Dr. R.K. Tripathi, Chairman (Elect) IGS Raipur Chapter. The session began with welcoming address by Dr. S. Bajpai chairman of IGS Raipur chapter.

On the foundation day the new office bearers of IGS Raipur Chapter also took the charge for the next term 2023-2025. Dr. R.K. Tripathi took the charge of Chairman, Dr. R.N. Khare as Vice Chairman, Dr. L.K. Yadu as Honorary Secretary, Dr. Tarun Rajak as Organizing

Secretary, Er. Arun T. Bhawe as Joint Secretary and Dr. Sandeep Chouksey as Treasurer have taken charge of IGS Raipur chapter.



National Institute of Technology (NIT) Raipur's Department of Civil Engineering and IGS Raipur Chapter organized an interaction session with Prof. Vikas Thakur, Vice-Dean (Sustainability) & Faculty of Engineering, Norwegian University of Science and Technology (NTNU), Norway on 3rd August 2023. Prior, Prof. V. Thakur was the Professor and Head, Civil & Environmental Engineering Department, NTNU Norway. He is also

an alumnus of (2001/Civil Engineering), NIT Raipur.

Prof. V. Thakur conferred with Dr. N.V. Ramana Rao, Director, NIT Raipur with a healthy discussion on areas of possible research and academic collaboration between the institutes. He also engaged in a meeting with Member of IGS Raipur chapter and Dr. Shirish V. Deo, Head of Department, Civil Engineering, and

the faculty members of the department. He was welcomed with a sapling by Dr. Samir Bajpai, Head, Career Development Centre and member of IGS Raipur chapter. The agenda of the meeting was to cover several research-specific topics like Waste Management, Use of Geomatics, Zero Carbon Road Construction, Geotechnical Engineering, and Sustainability in Civil Engineering, etc.



## IGS Srinagar Chapter

On the occasion of Diamond Jubilee Celebrations of Indian Geotechnical Society (2023), the Department of Civil Engineering, National Institute of Technology Srinagar, J&K organized Five Day ISSMGE-TC216 Workshop on Advancements in Geotechnical and Foundation Engineering for Difficult Ground Conditions (AGFEDGC-2023) in hybrid mode from July 26–30, 2023. The workshop was inaugurated by Honorable President of IGS, Dr. Anil Joseph in the presence of Dean R&C, Head CED and Workshop Convener, Prof. B.A. Mir. Honourable President IGS Dr. Anil Joseph was the Guest of honour and inaugural keynote speaker. The workshop was sponsored by NIT Srinagar, M/S HEICO New Delhi (gold sponsor), M/S Aimil Ltd., New Delhi, M/S Maccaferri and IGS New Delhi. Dr. Anil Joseph said, "Indeed, geotechnical engineering is a fascinating and vital subject within the field of civil engineering. It deals with the behavior of earth materials, such as soil and rock, and their interactions with structures and the natural environment." "Geotechnical

engineering plays a crucial role in the successful design, construction, and maintenance of various infrastructure projects, ensuring their stability, safety, and longevity," he added.

On the occasion, Prof. (Dr) A Q Dar, Head, CED, NIT Srinagar said the workshop is aimed to provide numerous benefits to participants, ranging from enhancing technical knowledge to fostering professional growth and networking opportunities. Various Eminent speakers delivered lectures in this 5-day ISSMGE TC216 workshop and shared their knowledge and experience in research on sustainable development related to Geotechnical applications in Difficult Ground Conditions.

The summary of lectures delivered in this 5day workshop is briefly given below:

- 1st day, Dr. Anil Joseph delivered the first lecture on sustainable Geotechnic with a strong focus case studies involving stabilization of soils in bridge works. Prof K.S. Rao delivered the 2nd lecture wherein he discussed in detail the engineering behaviour of rocks and

rock masses. He also discusses the various considerations for design and construction of tunnels. Dr. Seethalakshmi delivered 3rd lecture on the engineering behaviour of soils under dynamic loading. She presented a vigorous review of various governing factors parameters.

- 2nd day, Dr. Anil Joseph delivered his second lecture on forensic geotechnics with a strong focus on failures and success particularly including demolition in his second lecture. Dr. Sahil Wani delivered second lecture on the consideration of seismic coefficient for design of GRs walls. The lecture was of immense importance given the rapidly growing geosynthetic industry and use of G.T. Dr. Abdullah Ansari delivered the last lecture of 2nd day and discussed in detail the study of seismic microzonation of Jammu Region (JR), which is located in the northwestern part of the Himalayas. To accomplish this, seismic hazard analysis is carried out with a primary focus on site characterization using geophysical field testing. Further, the seismic risk of the 345 km long



Udhampur Srinagar Baramulla Rail Link (USBRL) Project is assessed for serviceability in post-seismic conditions.

- 3rd day, Dr. Saloni Panday delivered the first lecture and discussed in detail the “Liquefaction susceptibility and characterization of rebound response of micaceous sand”. Prof. Ravi Jakka discussed fundamental aspects of laterally loaded piles subjected to seismic loading. Dr. Rufaida delivered lecture on frost geotechnics, discussed case studies involving the challenges faced by frozen soil were discussed.
- 4th day, Dr. Prajakta Jadhav presented lecture on “Deformation basis seismic design of cantilever retaining walls”. A wonderful lecture discussing in detail the limitation of conventional force base methods. Er. Ravi Sundaram, Director CENGRS, delivered lecture on “Geotechnical Investigation in Difficult Ground Conditions - Indian Experiences”. Dr. Chaidul Chaudhary, presented analytical methods for studying the response of buried pipeline under seismic/dynamic loading, a fundamental study covering the behaviour of buried structure.
- 5th day, Dr. Altaf Usmani Deputy GM, Engineering India limited, presented on the topic “Advances



in underground space utilization for energy security and sustainability. A new developing, research/applied underground storage facilities with enhanced security and sustainability were discussed. Dr. Lateef A. Dar delivered lecture on the topic “Enhancing embankment stability through granular pile reinforcement of soft foundation soils”. He discussed mathematical and machine learning models for prediction of FOS. He also discussed the seismic response analysis of stone column supported embankment.

Further, the representative of various

sponsored agencies also delivered lectures in this workshop, who highlighted their role in the development of latest State-of-the-Art equipments to be used in field of Geotechnical Engineering.

Overall, “Advancements in ground investigation technologies, soil testing methods, ground improvement techniques, geosynthetics, and innovative foundation systems have empowered engineers to undertake projects in challenging environments with confidence,”



President IGS Dr. Anil Joseph, delivering lecture during 5 day ISSMGE Workshop, NIT Srinagar, J&K



Group Photo with the President, IGS

## IGS Vellore Chapter

Industry expert lecture on “Overview of Deep Foundation Testing” was organised on 5th July 2023. The lecture was delivered by Mr. Sujan Kulkarni, General Manager – Technical, Geo Dynamics Pvt Ltd, Gujarat, India. Mr. Sujan Kulkarni delivered a lecture on various QA/QC methods of Pile Foundations. The lecture was organised in hybrid mode. Nearly 70 participants, including faculty, research scholars and



students attended the expert lecture. Dr. M. Muthukumar, Professor, School of Civil Engineering and Prof. J. Malathy, Assistant Professor, School of Civil Engineering organised the event.

The Indian Geotechnical society - Vellore student chapter organised one day poster presentation event on 13th July 2023. The poster presentation was organised to explore some of the most pressing infrastructure challenges and propose innovative solutions. Participants have given the opportunity to create their own

posters on a topic of their choice. Nearly 100 students were participated in the event.

The IGS - Vellore student chapter has also organised another two day technical event on Introduction to Advanced Study of Soil-Water Interaction during 3rd and 4th Oct 2023. The event was conducted online. 50 under graduate civil engineering students have participated in the event. The event was organised to explore the fascinating world of soil and water dynamics.





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## Pile Foundation (Land, Bridge & Waterfront structures)

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- Axial load settlement analysis
- Lateral load analysis – Defl, BM and SF
- Driven, Bored, Driven cast-insitu, CFA piles
- Piles of various cross-sections
- IS-2911, API-2011, API-2000 and other methods for analysis

## Offshore Pile Foundation

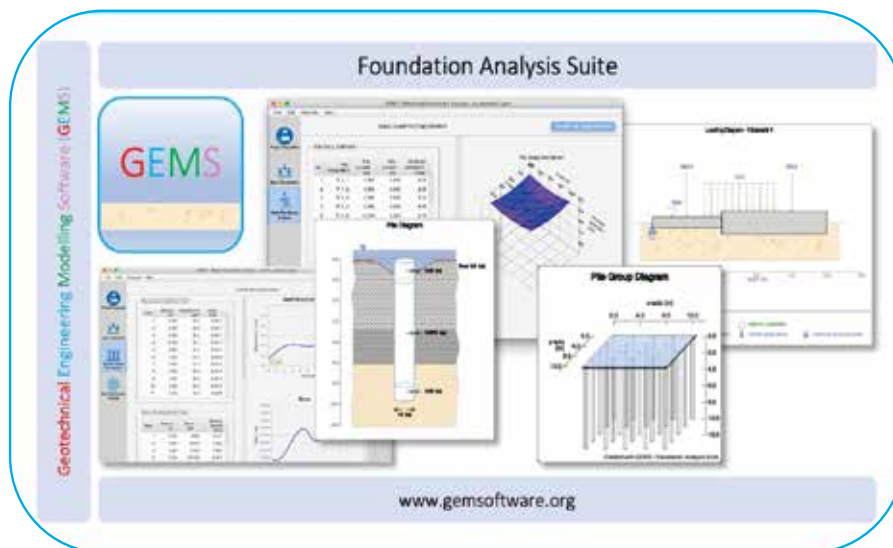
- Pile capacity estimation
- Axial load settlement analysis
- Lateral load analysis – Defl, BM and SF
- API-2011, API-2000, REESE and other methods for analysis
- p-y, t-z and Q-z curves based on soil properties
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- Design load estimate
- Facility to use load test results
- Analysis of rigid and flexible cap piles
- Driven, Bored, Driven cast-insitu, CFA Piles
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- Stimulate hydrological, time-dependent variations of water levels or, flow functions

### PLAXIS 2D

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- Analyse the effects of vibrations
- Stimulate hydrological, time-dependent variations of water levels, or flow functions
- Assess the effects of transient heat flow

**Application form link:** <https://forms.gle/5EjKb8PwEYFBVPhK7>

**Usage Charge: Rs 1500/- (additional 18% GST applicable) per application (2D or 3D) for a maximum duration of 3 months**

Licenses will be allocated to students and research scholars after receipt of the relevant application form and documents, and upon approval of the operational committee.

**Note:** The licenses are exclusively for Academic Research, and cannot be used for any Consultancy/Commercial Projects as well as Sponsored Research

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## MEMBERS' NEWS



**Dr. C.R. Parthasarathy**  
(LF-0551)

Dr. C.R. Parthasarathy, Chairman and Managing Director of Sarathy Geotech and Engineering Services Pvt. Ltd., has achieved the Rank of 'EXPERT' in the recent Dynamic Measurement and Analysis Proficiency Test conducted by PDI, USA, and PDCA. Only 7 Individuals have achieved the Rank of 'Expert' outside USA and this is the First in India and the Middle East Region.



**Prof. Deepankar Choudhury**  
(LF-0509)

Prof. Gopal Ranjan Technology Award – 2022 is awarded to Prof. Deepankar Choudhury, Professor (HAG) and Head of Civil Engineering Department of IIT Bombay, on 4th September 2023 at IIT Roorkee.

## GEOTECHNICAL EVENTS CALENDAR

### ABROAD

#### 2023

**November 20-22**  
**Fukuoka, Japan**

2nd International Conference on Construction Resources for Environmentally Sustainable Technologies (CREST 2023).

For Details:

Website: [www.ic-crest.com](http://www.ic-crest.com)

Email: [info@ic-crest.com](mailto:info@ic-crest.com)

#### 2024

**May 7-10**  
**Osaka, Japan**

8th International Conference on Earthquake Geotechnical Engineering (8ICEGE).

For Details:

Website: <https://confit.atlas.jp/icege8?lang=en>

**August 26-30**  
**Lisbon (Portugal)**

XVIII European Conference on Soil

Mechanics and Geotechnical Engineering (ECSMGE 2024).

For Details:

Email: [spg@lnec.pt](mailto:spg@lnec.pt)

**November 18-20**  
**Sydney, Australia**

5th International Conference on Transportation Geotechnics, Ground Improvement and Evolving Technologies for Sustainable Transport Infrastructure.

For Details:

Website: <https://ictg2024-c10000.eorganiser.com.au/>

### INDIA

#### 2023

**October 20-21**  
**PMI, Noida**

International Conference on “Sustainable Development of Pumped Storage Hydro Power Project – Geotechnical Challenges”.

For Details:

Email: [india.seg@gmail.com](mailto:india.seg@gmail.com)

**December 14-16**  
**IIT Roorkee**

Indian Geotechnical Conference (IGC-2023) on ‘Geotechnical Advances in Sustainable Infrastructure Development and Risk Reduction’ organized by Indian Geotechnical Society, Roorkee Chapter, Indian Institute of Technology, Roorkee and CSIR-Central Building Research Institute, Roorkee.

For More Details Visit:

Website: <https://igc2023.com/>

Address for Correspondence:

Organizing Secretaries

IGC-2023

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+91-7669038736

Ph: 01332-285892; 283438

E-mail: [igc2023roorkee@gmail.com](mailto:igc2023roorkee@gmail.com)

## IGC - 2024

IGC-2024 would be hosted by

**IGS-Aurangabad Chapter**

The Venue, Theme, scheduled dates etc. are being worked out and shall be announced soon.

## 45<sup>th</sup> IGS ANNUAL LECTURE 2023



The prestigious

### 45<sup>th</sup> IGS Annual Lecture 2023

will be delivered by Prof. G.L. Sivakumar Babu, Professor, Civil Engineering Department, Indian Institute of Science, Bangalore, during IGC-2023, Roorkee.

The topic of his lecture is

**“Reliability and Risk analysis in Geotechnical and Geoenvironmental Practice”**



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The system also performs traditional triaxial tests such as UU, CU, and CD as well as more advanced tests such as stress paths, K<sub>0</sub> and anisotropic conditions

### Technical Specification of the Primary System :

Load Frame – 01 Number

Robust, high-strength and compact two column reaction frame load frame with beam mounted electro-mechanical dynamic actuator of the following specification :

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**Conference : IGC, 2023**

**Stall No : S-13**

**Venue : IIT Roorkee, Civil Engineering Department**

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# IGC - 2023

## INDIAN GEOTECHNICAL CONFERENCE



### GEOTECHNICAL ADVANCES IN SUSTAINABLE INFRASTRUCTURE DEVELOPMENT AND RISK REDUCTION



**Dec. 14 - 16, 2023 | Website: <https://igc2023.com/>**

#### VENUE:

IIT Roorkee

#### ORGANIZED BY :

Indian Geotechnical Society, Roorkee Chapter  
Indian Institute of Technology, Roorkee  
CSIR-Central Building Research Institute, Roorkee

#### INVITATION

Indian Geotechnical Society, Roorkee Chapter, Indian Institute of Technology Roorkee and, CSIR-Central Building Research Institute, Roorkee extends you a warm invitation to the IGC-2023 to be held at Roorkee.

#### CONFERENCE THEMES

The main theme of the conference is “Geotechnical Advances in Sustainable Infrastructure Development and Risk Reduction”.

#### CONFERENCE SUB-THEMES

- Geomaterial Characterization, Site Investigation and Exploration.
- Foundation Engineering
- Geo-Environmental Engineering
- Geotechnical Earthquake Engineering
- Dams, Embankments and Retaining Structures
- Landslides and Slope Stability
- Rock Mechanics and Rock Engineering
- Tunneling and Underground Construction.
- Ground Improvement.
- Geosynthetic Engineering.
- Analytical, Physical and Numerical Modeling in Geotechnical Engineering.
- Unsaturated Soil Mechanics
- Sustainability in Geotechnical Engineering.
- Geohazards, Risk Reduction and Probabilistic Analysis.
- Offshore Geotechnical Engineering.
- AI/ML application in Geotechnical Engineering.
- Application of Geoinformatics in Geo-infrastructures.
- Case Studies.

#### KEY DATES

Last date for Abstract Submission (Extended)	15.05.2023
Intimation of Abstract Acceptance	15.06.2023
Last date for Full Paper Submission	30.08.2023
Intimation of Paper Acceptance	15.10.2023
Submission of Camera Ready Paper	31.10.2023
Last date for Registration of Accepted Papers	31.10.2023

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Bronze	Rs. 50,000/-	1	Half page : B&W
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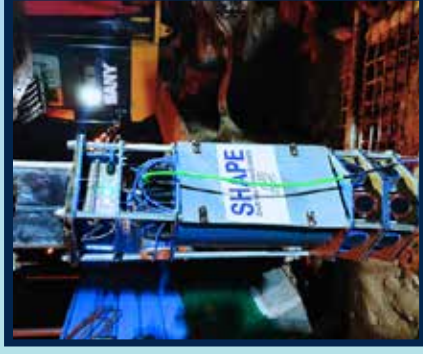
Delegate Category	Up to 31st Oct 2023 (INR)	After 31st Oct 2023 (INR)	Foreign Delegates (USD)
IGS Member	6000	7000	400
Non-IGS Member	6500	7500	450
Student	3000	3500	250
Senior Citizen (Retired)	2000	2500	250
Accompanying Person	2000	2000	200

#### Address for Correspondence :-

##### Organizing Secretaries

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- Excellent communication and teamwork abilities.
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# Welcome to New Members

*The Executive Committee of IGS extends hearty welcome to the following members who have been admitted to the Society recently/ elevated to Fellowship.*

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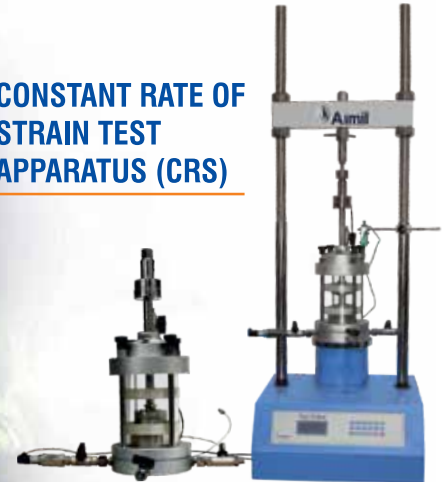
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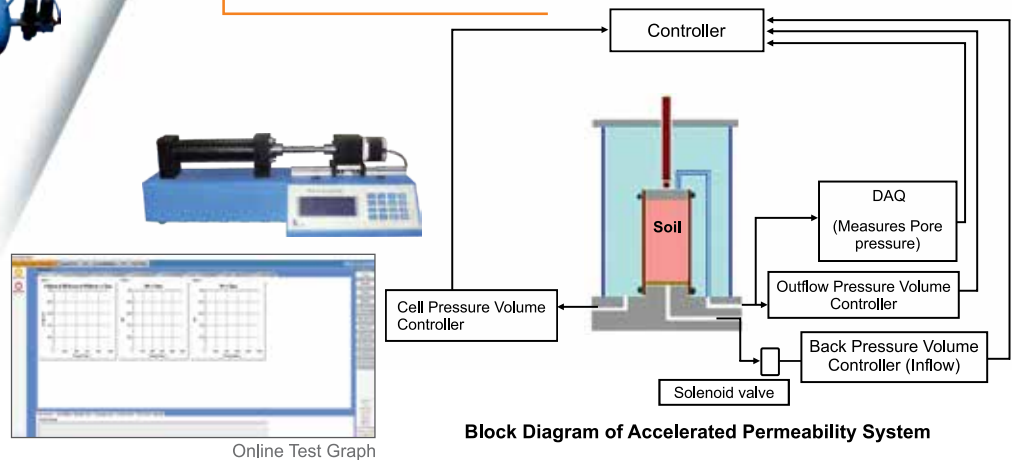
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