

# ANNUAL REPORT 2023 - 2024

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**THE ACTIVITY SUMMARY OF IGS CET STUDENT CHAPTER  
DURING THE ACADEMIC YEAR 2023 - 2024**

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### INTRODUCTION

The Indian National Society of Soil Mechanics and Foundation Engineering was established in 1948. In 1970 the name Indian Geotechnical Society (IGS) was adopted. The society is affiliated to International Society from its inception. The First chapter in Kerala was formed in the year 2009. To promote closer interaction amongst geotechnical engineers spread all over the country, local chapters of the Society were introduced in 1968. IGS Thiruvananthapuram chapter is functioning under the leadership of chairman Dr. N. Unnikrishnan and Hon. Secretary Dr. Jayamohan J. The IGS Student Chapter are established to motivate students and to give exposure to careers and opportunities in the area of Geotechnical Engineering and also develop leadership skills among students which will help them in their career. Student chapters provide an opportunity for bachelor's degree students of 2nd, 3rd and 4th year in Civil Engineering and Master's Degree students of Geotechnical Engineering program. Activities such as seminars/workshops/lectures conducted by student chapters under the guidance of faculty coordinators from the Institutions/colleges and the members of local chapters will significantly help the student community. The IGS CET Student Chapter was inaugurated on 17th February 2018 by Prof. (Dr.) G. L. Sivakumar Babu.

Dr. Manju G S (Mentor)

Ms. Nisna Nizar (President)

Ms. Donna Thomas (Vice President)

Ms. Jumana Yasir (Secretary)

Ms. Agrima V (Joint Secretary)

Ms. Meenakshi S (Treasurer)

## EVENT ORGANISED

### OVERVIEW

Event No.	Name of Event	Date	Venue	No. of Student Attendees
1	Visit to Akkulam Pile Load Test Site	07/08/23	Rajiv Gandhi Center for Biotechnology, Akkulam	8
2	Annual General Body Meeting 2023	14/08/23	Seminar Hall 1, Dept. of Civil Engineering, CET	48
3	Technical Talk on ‘Applications of Flexible Systems in Geotechnical Engineering’	19/09/23	Seminar Hall 1, Dept. of Civil Engineering, CET	55
4	Technical Talk on ‘Geo-Disaster Mitigation Techniques’	26/10/23	Seminar Hall 1, Dept. of Civil Engineering, CET	85
5	Visit to Meenamkulam Spt Site	10/11/23	Meenamkulam	27
6	Impedia – Reinforced Earth Wall Making Competition	24/11/23	Seminar Hall 4, Dept. of Civil Engineering, CET & CE3 Block Parking lot	35
7	Interactive Session with Dr. Jayasree P K	12/12/23	Seminar Hall 1, Dept. of Civil Engineering, CET	30
8	Technical Talk on ‘Geotechnical Research at Uow:An Overview’	18/12/23	CTSE Hall, CET	27

### EVENT 1: VISIT TO AKKULAM PILE LOAD TEST SITE

#### ABOUT THE EVENT

Static pile load test was being carried out at Akkulam for the construction of the Modern Animal Research Facility for Rajiv Gandhi Centre for Biotechnology. Nine PG Students along with Dr. Jaya V, Professor, Department of Civil Engineering, CET visited the site on 7<sup>th</sup> August 2023. The work was being done by M S Piling and Foundations, Palarivattam, Kochi under the supervision of CPWD.

A cast in situ RCC pile of 900mm diameter and 20.5m length made of M30 mix was bored into the ground by a crawler mounted hydraulic rotary drilling by Telescopic Kelly Bar Method. There was hardrock at the pile tip. A test load of 550MT was being applied which 2.5 times of the design load (220 MT). The kentledge consists of 4 main girder of 4.41 MT each, 21 secondary girder of 8.694MT and 271 concrete blocks of 2.56MT each. The load was applied through a hydraulic jack resting on the reaction girder. The test was being carried out by applying a series of vertical downward incremental load and each increment being of about 20% of the design load applied at a 30 min interval. The visit provided practical exposure apart from the theoretical knowledge acquired from the theory classes.



Figure 1 Poster



Figure 2 Panaromic view of the site



Figure 3 Site Visit Photographs

## EVENT 2: ANNUAL GENERAL BODY MEETING 2023

### ABOUT THE EVENT

The Annual General Body Meeting of the academic year was conducted on 14<sup>th</sup> August 2023 at 12.00pm at the Seminar hall 1 of the Dept. of Civil Engineering, College of Engineering Trivandrum. Faculty Incharge of IGS CET Students Chapter Dr. Manju G S welcomed the gathering after one-minute silent prayer by all the members. The Head of the Civil Engineering Department Dr. Anil R delivered the Presidential Address. The office bearers of the year 2022-23 Mr. Sishan Sharafudeen, Secretary IGS CET Student Chapter, Ms. Krishna J S, Treasurer IGS CET Students Chapter, Ms. Anju Ratheesh and Mr. Vimal V S, Executive Committee Member IGS CET Students Chapter were honored with certificates and Memento to appreciate the stupendous service rendered by them. Dr. N Unnikrishnan, Chairman IGS Thiruvananthapuram Chapter, Dr. Bindu J, UG Professor, Dept. of Civil Engineering, CET and Dr. Jaya V, PG Professor, Dept. of Civil Engineering, CET addressed the gathering.

The new student committee members were elected unanimously and the following were selected.

Designation	Name	Email ID	Contact Number
<b>President</b>	Nisna Nizar	nisnanizar97@gmail.com	8086382189
<b>Vice President</b>	Donna Thomas	donna.thomas4039@gmail.com	8547114539
<b>Secretary</b>	To be elected from M1 GE		
<b>Joint Secretary</b>	Agrima V	agrimav02@gmail.com	9995977101
<b>Treasurer</b>	Meenakshi S	meenakshisreeja@gmail.com	8606573264
<b>Executive committee members</b>	Sarath S	ssarathsivan500@gmail.com	8593021339
	Devi Krishna B	devikrishnas2002@gmail.com	7994203346
	Theerdha Udayakumar	saitheerdha1@gmail.com	8078534778
	To be elected from M1 GE		

Krishna J S, Treasurer IGS CET Students Chapter of the year 2022-23 conducted a presentation about the activities of the Chapter during the year 2022-23. The meeting was attended by a total of 48 students and 8 faculties from Department of Civil Engineering, CET. The student attendees consists of 32 UG students (S5 CE and S7 CE) and 16 PG (M2 GE and M4 GE) Students.

**COLLEGE OF ENGINEERING TRIVANDRUM**  
**DEPARTMENT OF CIVIL ENGINEERING**  
**IGS CET STUDENT CHAPTER**

**ANNUAL GENERAL BODY MEETING**  
**2023 -24**

**MONDAY**  
14 AUGUST 2023

**TIME**  
12:00 - 01:00pm

**VENUE**  
Seminar Hall 1  
Dept. of CE, CET

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- To facilitate quality transformative education in Engineering and Management.
- To foster innovations in Technology and its application for meeting global challenges.
- To pursue and disseminate Quality Research.
- To equip, enrich and transform students to be Responsible Professionals for better service to humanity.

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- To equip students with technical expertise so as to take up challenges in the field of Civil Engineering.
- To encourage students for pursuing higher education and research.
- To create competent professionals who are capable of upholding ethical values and principles of sustainable development.

Figure 4 Poster



Figure 5 Elected office bearers for the academic year 2023 – 24



Figure 6 Participants of the event

### EVENT 3: TECHNICAL TALK ON 'APPLICATIONS OF FLEXIBLE SYSTEMS IN GEOTECHNICAL ENGINEERING'

#### ABOUT THE EVENT

A technical talk was organized at Seminar Hall 1 of Department of Civil Engineering, CET on 19<sup>th</sup> September 2023. The talk on Applications of Flexible Systems in Geotechnical Engineering was delivered by Er. Minimol Korulla, Head – Strategic Projects and Initiatives, ISEAP Region, Maccaferri Environmental Solutions Pvt. Ltd. There were a total of 55 student attendees i.e., 23 UG students and 32 PG Students.

The talk highlighted the importance of Reinforced Soil Structures, its components, principle and applications in the field. The talk also emphasized on the relevance of sub-surface drainage and methods to achieve it. The speaker also shared some of her experiences in handling real life projects in the area of Geotechnical Engineering, the problems encountered and the proposed solution. The session was concluded after Dr. Jayasree P K, Division Head, Geotechnical Engineering acknowledged the speaker for her valuable presence and her insightful words.



Figure 7 Poster



Figure 8 Participants of the event



Figure 9 Er. Minimol Korulla handling the session



Figure 10 Photograph of the session

## **EVENT 4: TECHNICAL TALK ON ‘GEO-DISASTER MITIGATION TECHNIQUES’**

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### **ABOUT THE EVENT**

A technical talk on the topic Geo – disasters mitigation technique was organized by Department of Civil Engineering, College of Engineering Trivandrum and Indian Geotechnical Society CET Student Chapter on 26th October 2023. The session was handled by Mr. Manu K Sajan whose is a Research Scholar in the Department of Civil Engineering at NIT Suratkal, Karnataka, India. His research activities include Geo-disaster prevention and mitigation, dynamic soil-structure interaction, coastal geotechnics, renewable energy and ground improvement.

The session was attended by a total of 85 students which consists of 21 UG students, 62 PG Students and 2 Research Scholars of Department of Civil Engineering, CET. The fifth semester UG students that attended the session include 10 boys and 11 girls. Among the PG students 28 students (3 boys and 25 girls) were from Geotechnical Engineering Division, 15 students (2 boys and 13 girls) were from Environmental Engineering Division, 8 students (girls) from Geoinformatics and 11 students (4 boys and 7 girls) from Hydraulics Engineering Division. The two research scholars that attended the session were from Geotechnical Engineering Division.

The speaker started the session with introducing the topic Geo-disasters which includes slope and foundation failure due to earthquake and tsunami. He highlighted the importance of replicating the actual conditions at site into the experimental models and numerical simulations. The different methods for determination of magnitude and direction of propagation of the vibrations on the earth’s surface during an earthquake and how this can be replicated in a laboratory was discussed. The concept of earthquake resilient building and its relevance was discussed. He also highlighted the scope of research in this area and application of Internet of Things (IoT) in developing early warning system for earthquakes and tsunamis.

The session was concluded with Vote of Thanks delivered by Ms. Aiswarya, MTech Student and Member IGS CET Student Chapter.

**GEOTECHNICAL ENGINEERING DIVISION  
DEPARTMENT OF CIVIL ENGINEERING  
COLLEGE OF ENGINEERING TRIVANDRUM**

A TECHNICAL TALK ON  
**GEO-DISASTER  
MITIGATION  
TECHNIQUES**

**26 OCTOBER 2023**  
**2PM TO 3PM**  
**VENUE SEMINAR HALL I**




**RESOURCE PERSON**  
**MANU K SAJJAN**  
PhD Scholar  
NIT Suratkal

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For any queries contact  
Nisna Nizar : 9447387460  
Meenakshi S : 8606573264

Figure 11 Poster



Figure 12 Participants of the event



Figure 13 Speaker delivering the talk

## **EVENT 5: VISIT TO MEENAMKULAM SPT SITE**

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### **ABOUT THE EVENT**

The Standard Penetration Test (SPT) is a commonly used in-situ test for determining the relative density and the angle of shearing resistance. A SPT test was being carried out at Meenamkulam at a proposed site for a 18 storeyed building of Shanoor Homes. The test was being done under the supervision of Dr. Arvee Sujil Johnson, Professor, Dept. of Civil Engineering, CET under Centre for Industrial Training, Consultancy & Sponsored Research, CET. The visit to the site was conducted on 10<sup>th</sup> November 2023. The participants include First year and Second year PG Students in Geotechnical Engineering along with Dr. Manju G S, Associate Professor and Prof. Thushara V T, Assistant Professor, Dept. of Civil Engineering, CET.

The condition of the particular site and the procedure of the test was explained to us by the site supervisor. They have roughly estimated the presence of hard rock at a depth of 50m from ground level as location of the site, therefore the drilling and sampling was being done upto that depth. The total area where the tests were being carried out consist of three plots. In plot 1 the SPT tests were done for 5 boreholes in which one collapsed due to high water table. During the time of visit the SPT values and sampling at a depth of 15m from ground level of Borehole 1 of plot 2 was being carried out. The sampling was done using split spoon sampler. The collected soil was stored in plastic bags and later it would be sent to the laboratory for further testing.

The visit provided practical exposure to one of the commonly used tests for determining the nature of underlying soil layers beneath the ground surface.



Figure 14 Poster



Figure 15 Participants of the site visit



Figure 16 SPT being carried out at the site

### **EVENT 6: IMPEDIA – REINFORCED EARTH WALL MAKING COMPETITION**

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#### **ABOUT THE EVENT**

Mechanically stabilized earth or reinforced soil is a technique used to retain soil at a slope steeper than its natural slope using artificial reinforcing elements such as steel and geosynthetics. It can be used to build retaining walls, bridge abutments and seawalls and dikes.

Impedia is a reinforced earth wall making competition conducted as part of Pantheon 9.0. The program was organized by IGS CET Student Chapter in association with ICI CET Student Chapter and Department of Civil Engineering, CET on 24<sup>th</sup> November 2023. The main coordinators of the event were Meenakshi S (M3 GE) and Donna Thomas (S7 CE). The sub-coordinators were Athulya Ramesh (M1 GE) and Agrima V (S5 CE).

Participants were students pursuing BTech in Civil Engineering and MTech in Geotechnical Engineering. The event had a total of 12 registrations including spot registration which consisted of 2 teams of PG students and 10 teams of UG students. Each team had 3 members. There was one team from Mar Baselious College of Engineering, one from Muthoot Institute of Technology and Science, one from Muslim Association College of Engineering and the remaining teams were from College of Engineering Trivandrum.

Impedia was conducted in two stages – preliminary round for 30min and a final round for 45min. The preliminary round was a quiz which consisted of questions from all the Civil Engineering disciplines. A 20 minutes Introductory session on RE Wall and its construction was conducted prior to the final round by Dr. Unnikrishnan N, IGS Chairman Thiruvananthapuram Chapter and Professor, Dept. of Civil Engineering CET. Five teams were selected for final round which is the reinforced earth wall making in which participants could showcase their skills in constructing an earth wall using the given soil and reinforcing elements in the allotted space. The constructed RE Wall is judged based on the height, load carrying capacity, economics and aesthetics. The final round was judged by Dr. Jaya V and Dr. Unnikrishnan N, Professors, Department of Civil Engineering, CET. The preliminary quiz was

## IGS CET STUDENT CHAPTER

conducted at Seminar Hall 4 and the final round at the parking lot, CE3 Block, Dept. of Civil Engineering, CET

The winners were given a cash prize of Rs.2500 and Rs.1000 worth voucher and the first runner up where given Rs.2000 and Rs.1000 worth voucher.

The details of finalists and winning teams are listed below.

Team No	Team Members	Course	College	Remarks
<b>IM02</b>	Mohammed Shafi B M Nandana P M Nevin P Joseph	S2	Muthoot Institute of Technology and Science	Finalist
<b>IM04</b>	Joe Thomas Cheriyan Sangeetha B Manju M	S7	CET	Finalist
<b>IM05</b>	Akshay V Nair Govind R	S7	CET	II Prize
<b>IM07</b>	Liya Henry Akhila Chand C.L Anaswara Simon	M1 GE	CET	Finalist
<b>IM09</b>	Alessandro Anil Mathew Krishnapriya N S Shilpa S	M1 GE	CET	I Prize



Figure 17 Poster



Figure 18 Participants and Judges of Impedia



Figure 19 Conduct of quiz



Figure 20 Testing of reinforced earth wall model



Figure 21 Judgement




Figure 22 Winners and runner ups receiving certificates and cash prize

## EVENT 7: INTERACTIVE SESSION WITH DR. JAYASREE P K


### ABOUT THE EVENT

Dr. Jayasree P K presented a technical paper on ‘Construction of reinforced soil structure in lateritic soil – A case study of the expansion of the runway at Mangalore (India) International Airport’ in collaboration with Maccaferri Environmental Solutions Pvt. Ltd in the 2<sup>nd</sup> International Conference on Construction Resources for Environmentally Sustainable Technologies 2023 (CREST 2023) hosted by Kyushu University at Fukuoka International Congress Centre, Japan from November 20 – 22, 2023. An interactive session was arranged at the CPGU Hall, CET where she discusses about her paper presentation and experiences during the conference in Japan.

The session was attended by first year and second year PG Students in Geotechnical Engineering. The speaker explained about her experiences about the conference, the people they met, the lifestyle they followed and a lot more. She also describes about the challenges she faced while trying to communicate with the natives and while using various facilities. Altogether the session was very interesting and informative.



**College of Engineering Trivandrum**  
Department of Civil Engineering  
Geotechnical Engineering Division  
IGS CET Student Chapter




### INTERACTIVE SESSION

with Dr. Jayasree P K

11 December 2023 | Venue : CGPU Hall | Time: 2.00 pm - 4.00 pm


**About the session**

Dr. Jayasree P K presented a technical paper on ‘Construction of reinforced soil structure in lateritic soil- A case study of the expansion of the runway at Mangalore (India) International Airport’ in collaboration with Maccaferri Environmental Solutions Pvt. Ltd in the 2<sup>nd</sup> International Conference on Construction Resources for Environmentally Sustainable Technologies 2023 (CREST 2023) hosted by Kyushu University at Fukuoka International Congress Centre, Japan. In this session she discusses about her paper presentation and experiences during the Conference in Japan.



**Faculty coordinator**  
Dr. Manju G S - 828343171

**Student coordinators**  
Nina Nino - 9447392460  
Jumana Yousif - 9027754585



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**CREST 2023**

Figure 23 Poster

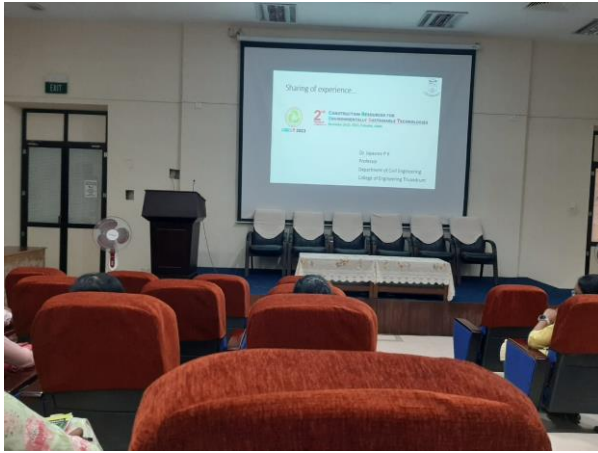


Figure 24 Photographs of the session

## **EVENT 7: TECHNICAL TALK ON ‘GEOTECHNICAL RESEARCH AT UOW: AN OVERVIEW’**

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### **ABOUT THE EVENT**

A technical talk on the geotechnical research that is being done at UOW was handled by Dr. J S Vinod, Faculty of Engineering and Information Sciences, School of Civil, Mining, Environmental and Architectural Engineering, Wollongong, Australia. His key research areas include discrete element modelling of geomaterials, soil dynamics, and transport geomechanics. His current research focuses on the application of waste materials for various infrastructure construction. He is the recipient of the Australia-India EMCR Fellowship from the Australian Academy of sciences. He is an associate editor for the Journal of Materials in Civil Engineering (ASCE); Ground Improvement Journal (ICE) and also editor-in-chief for the International Journal of Geotechnical Earthquake Engineering (IGI Global). He has a strong relationship with industries through many competitive research grant funding. He has published over 115 refereed publications and delivered numerous invited and keynote lectures in his research area. He is currently the Head of students (HoST) for the ME program in Engineering (EIS) and the Academic Program Director (APD) for the ME program in the school of CMEA.

The talk was attended by 24 PG Students and 3 PhD Scholars at CTSE hall, CET along with faculty members of Geotechnical Division. The session provided a different view on the theory of Consolidation and also discussed about the different research work going on in this area. He also explains about the relevance of Geothermal Energy in near future. The technical talk was followed by an interactive session with the speaker regarding the higher studies and career opportunities in the area of Geotechnical Engineering.

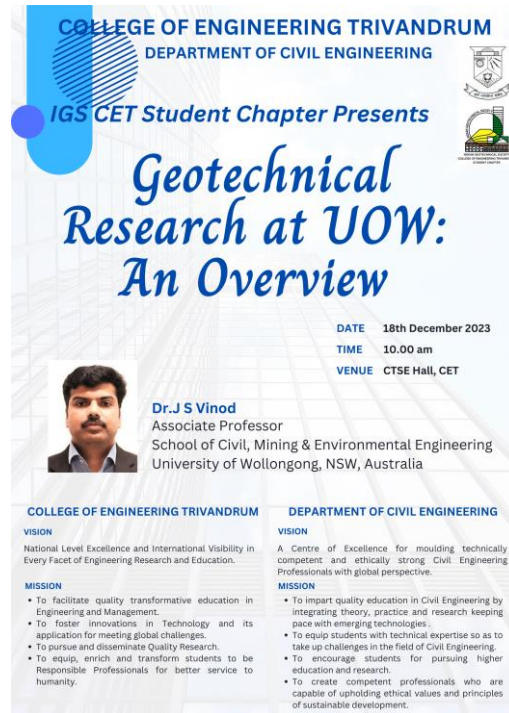


Figure 25 Poster



Figure 26 Dr. J S Vinod delivering the talk

### CONCLUSION

The activities conducted by IGS-CET Students Chapter during the academic year of 2023-2024 has been included in this report. The chapter took initiative in order to focus to address the challenges and opportunities that come forth in organizing on various activities to facilitate wider reach for the objectives of IGS. As part of IGS CET Student chapter we were able to reach wider audience and facilitate a larger audience and provide informative sessions.