

SCE e-NEWSLETTER

SCHOOL OF CIVIL ENGINEERING (SCE)

VIT - A Place to Learn; A Chance to Grow



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VISION

- To be internationally recognized in Civil Engineering through ground breaking contributions and exceptional leadership for sustainable development of the society.

MISSION

- To pioneer the emerging technology in Civil Engineering.
- To address the complex societal scale challenges in areas of resilient infrastructure, smart and sustainable cities, water and energy security, climate change, mobility of goods and people & environmental protection.
- To inspire and nurture innovative leaders and entrepreneurs.

DEAN'S MESSAGE

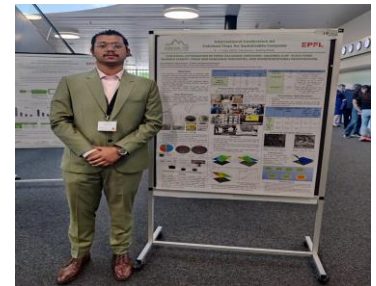
It is my immense pleasure to welcome you all to view the twelfth issue of the SCE e-Newsletter by the School of Civil Engineering (SCE), Vellore Institute of Technology (VIT), Vellore, Tamil Nadu, India. This issue brings out the accomplishment of VITians which includes the students and faculty of SCE that has transpired between July - Sep 2022. This issue highlights the active participation and contribution in various outreach activities by faculty members and the achievements of undergraduate, postgraduate students and Ph.D. research scholars.

I hope you all enjoy reading the updates and achievements of students and faculty members of SCE and extend your cooperation and support for all our future accomplishments.

- Dr. A. S. Santhi

STUDENT ACHEIVEMENTS

Mr. Ishan Bhandari (20MST0048), M.Tech Structural Engineering guided by Dr. A. Sofi, Associate Professor, VIT, Vellore & Dr. Rajesh Kumar presented his final master thesis work at International Conference on “Calcined Clays for Sustainable Concrete” held during 5th to 7th July, 2022, Lausanne, EPFL, Switzerland.



Mr. Godson M D (20MST0042), M.Tech Structural Engineering guided by Dr. J. Visuvasam, Assistant Professor, VIT, Vellore and Dr. S. Ganesh Kumar, Scientist - Geotechnical Engineering Group, CSIR-CBRI, Roorkee was awarded best Master's Project award 2022 during the 11th Conference on “Deep Foundation Technologies for Infrastructure Development in India” held during 15th to 17th September 2022.



Mr. Riyaz Khan (20PHD0800), research scholar guided by Dr. S. Vasantha Kumar, Professor, VIT, Vellore presented a paper titled “Use of Advanced Techniques for Functional Evaluation of Pavements: A Review and a Pilot Study” in the 2nd International Conference on “Transportation Infrastructure Projects: Conception to Execution (TIPCE 2022)” during 14th to 17th September, 2022 organized by Transportation Engineering Group, Department of Civil Engineering, IIT Roorkee.



IN - HOUSE PROJECT

Dr. S. Vasantha Kumar, Professor, SCE has done an in-house study on “Total Station Survey for Preparation of Parking Plan, Pavement Marking and Traffic Sign Plan for Pearl Research Park Block, VIT Vellore” on 10th August 2022.



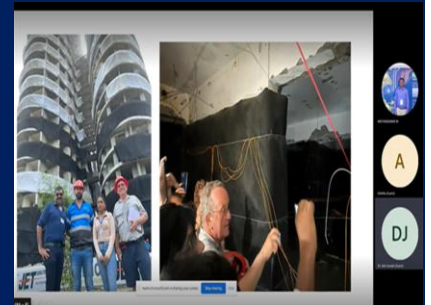
FACULTY OUTREACH

Dr. P. Sasanka Bhushan was involved in a Field investigation study of road sites with high accident risk in Vellore district and developing accident risk reduction strategies from 21st to 23rd September 2022. The Superintendent of Police, Vellore District was the client and he entrusted Dr. Pulipati Sasanka Bhushan to investigate the conditions of road accident hotspots in Vellore District and furnish the recommendations on short term improvements at each location. Dr. Pulipati and his student team which included four B.Tech Students (Mr. Ankit Ashish, Mr. Pratham Sinha, Mr. Singareddy Om Prakash and Mr. Suravarapu Abhiram) and two PhD Scholars (Mr. Biswajit Mohanty and Mr. V.S. Meganathan) investigated nearly 50 locations across Vellore district and presented their observations and recommended the measures for reducing accident risk.



EVENTS OF IGS CHAPTER

IGS-Vellore Chapter organized a guest lecture on “Engineering Challenges behind Demolition of Supertech Twin Tower at Noida” on 28th September 2022. The speaker of the event is Dr. Anil Joseph, Director, Geo Structural Pvt. Ltd, Cochin. The interactive session was conducted online in MS Teams platform. Nearly 50 students including student’s office bearers of IGS-Vellore Chapter have attended the event. Dr. M. Muthukumar, Associate Professor, School of Civil Engineering, VIT and Chairman, IGS-Vellore chapter, welcomed the participants and Dr. B. Divya Priya, Assistant Professor, School of Civil Engineering, VIT and Secretary, IGS-Vellore chapter proposed the vote of thanks.



EVENTS OF IGS CHAPTER

A Two-Day Workshop on “Transportation Geotechnics” was organized by the Indian Geotechnical Society, Vellore Chapter in association with the School of Civil Engineering, VIT Vellore on 15th and 16th of July, 2022 via online through Zoom platform. This workshop was aimed to provide a valuable resource for pavement and railroad track engineers, professionals and all engineers to keep up-to-date with the latest advances in this field. The webinar started with the inauguration speech by the co-ordinators followed by a welcome address from Dr. A.S. Santhi, Dean (SCE), VIT and Dr. M. Muthukumar, Head of the Department, SCE, VIT to the participants. A total of 147 participants from international institutions, NIT, IITs, reputed Universities and academic institutions, and also from Government/Non-Government organizations have attended the program. On the first day in session 1, a lecture on “How to use geosynthetics in Unpaved Roads” was delivered by Dr. Sanjay Kumar Shukla, Founding Research Group Leader, Geotechnical & Geoenvironmental Engineering, School of Engineering, Edith Cowan University, Perth, Australia where the overview of various geosynthetics, application, and challenges concerning pavements were focused in detail. In session 2, a lecture on “Recycling of Construction and Demolition Wastes for Sustainable Transportation Infrastructures” was delivered by Dr. Jose Neves, Assistant Professor, Department of Civil Engineering, Architecture and Geo-resources, University of Lisbon, Portugal. Use and recycling of Construction and Demolition Wastes, its application in Transportation Infrastructures; Case studies in support of sustainability were discussed in detail.

On the second day in the first session, Dr. Sreevalsa Kolathayar, Assistant Professor, Department of Civil Engineering, National Institute of Technology, Surathkal, Karnataka discussed on “Soil Reinforcement Techniques for Sustainable Transportation”. Various projects about the application of geosynthetics for soil stabilization/improvement concerning sustainable transportation infrastructure were presented. Advantages, composition, and soil reinforcement techniques using several combinations of natural fibers with case studies were discussed in detail. In session 2, a lecture on “Alternative Materials for Pavement Applications: Geotechnical Characterization and Stabilization Procedures” was delivered by Dr. Lini Dev K, Assistant Professor, Department of Civil Engineering, National Institute of Technology, Patna. Various materials, their parameters, and laboratory testing procedures were explained in detail for Pavement Applications. Finally, the participants and the speakers of all the sessions had a technical discussion from 04.00 to 04.30 pm. The session ended with a valedictory function and participants gave a positive feedback about the webinar.



NATIONAL AND INTERNATIONAL LECTURES

Dr. Vikas Garg, Professor and Head, Department of Civil Engineering, Central University of Haryana, Haryana, India delivered a lecture on “Watershed Management” on 12th September 2022 organized by Dr. B. Srimuruganandam, Professor and Dr. S. Mahenthiran, Assistant Professor, SCE, VIT.



Dr. K. Krishnamurthi, Chief Scientist and Head, Health and Toxicity Cell, CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur, India delivered a lecture on “Air pollution induced health impact using exposure, effect and susceptibility biomarkers” on 28th September 2022 organized by Dr. B. Srimuruganandam, Professor, SCE, VIT.



Dr. Flora Falsechini, Department of Civil, Environmental and Architectural Engineering, University of Padova, Italy delivered a lecture on “Green concrete: How to promote Sustainability in the construction industry through the use of Recycled Materials” on 22nd August 2022 organized by Dr. A. Sofi Associate Professor, SCE, VIT.



Mr. K. Rajendhiren, Dy. Manager, Master Builders Solutions Pvt. Ltd, Chennai delivered a lecture on “The world of construction Chemicals” on 29th September 2022 organized by Dr. A. Sofi Associate Professor, SCE, VIT.



Er. Annapoorni Iyer, Proprietor and Founder, Engosym Consultants, Pune delivered an Industry expert lecture on “Landslides and stability of retaining structures” on 24th August 2022 organized by Dr. L. Vignesh Rajkumar and Prof. J. Malathy Assistant Professor, SCE, VIT.



INDUSTRIAL VISITS

S R Bricks, Brammapuram was visited by 40 Civil Engineering students of Strength of Materials class as their industrial Visit on 28th September 2022. S R Bricks is a manufacturer of fly ash brick, solid block and paver block. The visit was organized by Dr. T S Viswanathan, Dr. A. Abdul Rahim, and Dr. T. Meena, Associate Professor, SCE, VIT.



RANITEC CETP, Ranipet was visited by 51 Civil Engineering students of Environmental Engineering class as their industrial Visit on 22nd September 2022. RANITEC CETP is an Integrated Common Effluent Treatment Plant treating the tannery wastewater of nearly 91 tanneries. The visit was organized by Dr. S. Parimala Renganayaki, Associate Professor and Dr. L. Vignesh Rajkumar, Assistant Professor, SCE, VIT.



PUBLICATIONS

Jithin Jose and B. Srimuruganandam (2022) Health risk of potentially toxic elements from diverse sources in urban road dust – An application of receptor modelling, *Journal of The Institution of Engineers (India): Series A*, (Available Online). <https://doi.org/10.1007/s40030-022-00667-9>

N. Manojkumar and B. Srimuruganandam (2022) Size-segregated particulate matter characteristics in indoor and outdoor environments of urban traffic and residential sites, *Urban Climate* 44 (Available Online). <https://doi.org/10.1016/j.uclim.2022.101232>

Madeena Imam Shah, S., and Mohan Ganesh, G. (2022) Impact of diameter to thickness (D/t) on axial capacity of circular CFST columns: Experimental, parametric and numerical analysis, *International Journal of Applied Science and Engineering*, Published, ISSN 1727-2394, Vol. 19, No. 2. [https://doi.org/10.6703/IJASE.202206_19\(2\).005](https://doi.org/10.6703/IJASE.202206_19(2).005)

Hoby PM., Santhi, A.S., and Mohan Ganesh, G.(2022) An experimental study on the strength and corrosion of blended cement concrete exposed to seawater in an arid region, *Journal of Applied Science and Engineering*, ISSN 1560-6686, Vol. 25, No. 6, pp. 1075-1085. [https://doi.org/10.6180/jase.202212_25\(6\).0018](https://doi.org/10.6180/jase.202212_25(6).0018)

Madeena Imam Shah, S., and Mohan Ganesh, G. (2022) Influence of parameters on the strength and behavior of concrete filled steel tube specimens subjected to axial compression and cyclic loading, *Materials Today: Proceedings*, Volume 65, No. 2, pp 629-635. <https://doi.org/10.1016/j.matpr.2022.03.198>

Shaik Madeen, Shehnaza Shaik Madeena Imam Shah, and Mohan Ganesh, G. (2022) Experimental and theoretical study on rectangular concrete filled steel tube columns subjected to axial compression, *Materials Today: Proceedings*, 2022, Volume 65, No. 2, pp 771-776. <https://doi.org/10.1016/j.matpr.2022.03.287>

Madeena Imam Shah, S., and Mohan Ganesh, G. (2022) Experimental and numerical study on the effect of parameters in axial capacity of CFST columns with various L/D ratios, *International Journal of Advanced Technology and Engineering Exploration (IJATEE)*, Volume 9, No. 93, pp 1209-1221. DOI:10.19101/IJATEE.2021.875190.

Venkatesan, V. and Mayakrishnan, M. (2022) Behavior of Mono Helical Pile Foundation in Clays under Combined Uplift and Lateral Loading Conditions. *Appl. Sciences*. 2022, 12, 6827. <https://doi.org/10.3390/app12146827>

Shivakumar, M., Singh, A., Selvaraj, T., & Thangaraj, S. (2022) Production of the Traditional Organic Mortars of Padmanabhapuram Palace—A Characterization Study on the Simulated Mortars for Their Compatibility. *Buildings*, 12(9), 1466. <https://doi.org/10.3390/buildings12091466>

Ramani P.V., Arun Kumar T.R. (2022) Developing a schedule integrated automated safety planning tool for residential construction projects. *International Journal of Occupational Safety and Ergonomics*.

Renuka S.M., Mervin Sanjith I.P. (2022) Strengthening of Damaged Masonry Walls using engineered cementitious composites: Experimental and Numerical Analysis. *Advances in Civil Engineering*.

Ricky R., Shanthakumar S., Ganapathy G.P., Chiampo F. (2022) Zero Liquid Discharge System for the Tannery Industry—an Overview of Sustainable Approaches. *Recycling*.

PUBLICATIONS

Manjula Unni, Kishor S Kulkarni, Mukesh Kumar., & Shanmugapriya T. (2022) Thermal Comfort Monitoring and BIM based Simulation of a Prefabricated Building in Composite Climate Zone of India, 2nd International Conference on I – Coverage: Changing Dimensions of the Built Environment, I – Coverage 2022, DIT University, Dehradun , India.

Raneri S., Botto A., Campanella B., Momčilović M., Palleschi V., Poggialini F., Sciuto C., Gattiglia G., Volpintesta F., Selvaraj T., Živković S., Lorenzetti G., Legnaioli S. (2022) Increasing resolution in chemical mapping of geomaterials: From X-ray fluorescence to laser-induced breakdown spectroscopy. *Spectrochimica Acta - Part B Atomic Spectroscopy*.

Srikanth S., Kjn S.N., Rama Krishna C.B., Vasugi K., Teja C.P., Sesha Rao Y., Kumar S., Lemu D.G. (2022) Analysis of the Thermal Effects on the Behaviour of Steel Connection Beam Section. *Advances in Materials Science and Engineering*.

Yeswanth Sai T., Jagadeesh P. (2022) Effect of graphene oxide on the microstructure and hydration characteristics of ultrafine slag cement composites. *Fullerenes Nanotubes and Carbon Nanostructures*.

Abinandan S., Shanthakumar S., Panneerselvan L., Venkateswarlu K., Megharaj M. (2022) Algalization of Acid Soils with *Desmodesmus* sp. MAS1 and *Heterochlorella* sp. MAS3 Enriches Bacteria of Ecological Importance. *ACS Agricultural Science and Technology*.

Ramani P.V., Selvaraj P., Shanmugapriya T., Gupta A. (2022) Application of Linear Scheduling in Water Canal Construction with a Comparison of Critical Path Method. *Journal of Construction in Developing Countries*.

Ramani P.V., Lingan L.K. (2022) Developing a lean model to reduce the design process cost of gas insulated switchgear foundation using value stream mapping—a case study. *International Journal of Construction Management*.

Singh S.G., Kumar S.V. (2022) Development of mode-wise speed prediction models for urban roads with side friction characteristics. *Communications - Scientific Letters of the University of Žilina*.

Gopu G.N., Sofi A., Brahmareddy C., Sairaman G. (2022) Experimental investigation of tensile, compression, shear and flexural behaviour of basalt fibre and glass fibre reinforced polymer bars. *Materials Today: Proceedings*.

Phanikumar B.R., Shankar M.U., Manikanta D. (2022) Interaction of diesel oil contaminants with laterite soil and bentonite treated by sawdust -landfill liner. *Geomechanics and Geoengineering*.

Nidheesh P.V., Khan F.M., Kadier A., Akansha J., Bote M.E., Mousazadeh M. (2022) Removal of nutrients and other emerging inorganic contaminants from water and wastewater by electrocoagulation process. *Chemosphere*.

Mathew A.T., Saravanakumar M.P. (2022) Removal of micropollutants through bio-based materials as a transition to circular bioeconomy: Treatment processes involved, perspectives and bottlenecks. *Environmental Research*.

PUBLICATIONS

Ricky R., Shanthakumar S., Gothandam K.M. (2022) A pilot-scale study of the integrated phycoremediation-photolytic ozonation based municipal solid waste leachate treatment process. Journal of Environmental Management.

Thakur S., Das S., Das B. (2022) Application of upflow constructed wetland microbial fuel cell for treating sewage spiked with reverse osmosis concentrate with the concomitant generation of green electricity. Biomass Conversion and Biorefinery.

Panda P.P., Aswini M.A., Bhatt P., Srimuruganandam B., Peketi A., Kumar A. (2022) Bioactive Trace Elements' Composition and Their Fractional Solubility in Aerosols from the Arabian Sea during the Southwest Monsoon. ACS Earth and Space Chemistry.

Shivakumar M., Selvaraj T., Simona Raneri R. Characterization of Tenth century seenakesavaperumal temple building materials (2022). Indian Journal of Engineering and Materials Sciences.

Patil C.K., Muthu Kumar V., Arul Rasika K., Balasubramanian M., Saravanan M., Subbiah R. (2022) Optimization of FSW parameters to improve the hardness of AA 6061/Boron nitrides and AA 6061/Boron carbide composite joints. Materials Today: Proceedings.

Xavier C.S.B., Rahim A. (2022) Nano aluminium oxide geopolymer concrete: An experimental study. Materials Today: Proceedings.

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