

SCE e-NEWSLETTER

SCHOOL OF CIVIL ENGINEERING (SCE)

VIT - A Place to Learn; A Chance to Grow



INSIDE

Dean's Message	02
Patents Filed	02
Sponsored projects	02
Consultancy projects	03
Faculty Outreach	04
National and International Events organized	05
Lectures Delivered	07
Industrial Visits	07
Memorandum of Understanding	08
Alumni Voice	08
Publications	08
Editorial Team	10
Contact	10

Vision Statement of the School of Civil Engineering

To excel in Civil Engineering education and research with a global perspective and commitment to sustainability

Mission Statement of the School of Civil Engineering

M1. Academic Excellence: Impart high-quality Civil Engineering education through innovative teaching methodologies and modern laboratory facilities.

M2. Research: Promote research, consultancy, and innovation addressing real-world Civil Engineering challenges with emphasis on sustainable infrastructure and societal needs.

M3. Global Perspective & Industry Engagement: Prepare globally competent Civil Engineers through industry interaction and collaboration with national and international institutions.

M4. Ethics, Sustainability & Lifelong Learning: Produce socially responsible Civil Engineers with strong ethical values and leadership skills, dedicated to sustainable development and lifelong learning.

Program Educational Objectives (PEOs)

PEO1: Graduates will be successful civil engineering professionals / entrepreneurs.

PEO2: Graduates will pursue higher studies and research for professional development.

PEO3: Graduates will demonstrate civic responsibility in addressing societal and environmental challenges.

DEAN'S MESSAGE

Civil Engineering is fundamental to the built environment and to the development of society—from the buildings and infrastructure around us to water resources, transportation, and sustainable cities. At the School of Civil Engineering (SCE), VIT, we build on this strong foundation while preparing our students to meet the changing needs of a rapidly evolving world.

We are committed to ensuring that our students develop a strong understanding of fundamental civil engineering principles while gaining exposure to emerging technologies such as Artificial Intelligence, Building Information Modelling (BIM), drones, LiDAR, Geographic Information Systems (GIS), and Remote Sensing. Through the integration of core knowledge, innovation, and technology, we strive to nurture competent, responsible, and future-ready Civil Engineers.

It is with great pride and enthusiasm that I publish the Nineteenth Issue of the SCE E-Newsletter, to you brought by the School of Civil Engineering (SCE), Vellore Institute of Technology (VIT), Vellore, Tamil Nadu, India. This issue showcases the achievements, activities, innovations, and contributions of our students, faculty, and scholars, while providing an insight into the vibrant academic, research, and professional environment at SCE, VIT

- Dr. A. S. Santhi

PATENTS FILED

- 1) Dr. Viswanathan T.S and Mr. Nishant A Nair are the inventors of the patent titled “Sustainable Cement-Based Grout Containing Wollastonite and Colloidal Nano-Silica,” filed on 22/05/2024, which has been published.
- 2) Dr. Senthil Kumar N and Mr. Korrapati Pratyusha are the inventors of the patent titled “Reinforced Concrete Box/T-Beam Structure with Shear Key Joint for Mitigating Continuous Longitudinal Deck Cracking,” filed on 03/06/2024, which has been published.
- 3) Dr. Senthil Kumar N and Mr. Doredla Nagaraju are the inventors of the patent titled “Orthotropic Steel Deck Bridge that Mitigates Longitudinal Joint Cracking and Improves Impact Resistance,” filed on 14/06/2024, which has been published.
- 4) Dr. Bhaskar Das, Dr. Rajasekar N, Dr. Chinmaya Sahu, and Ms. Tharanyalakshmi R are the inventors of the patent titled “Hybrid Microbial-Photo-Electrochemical-Based Sustainable Hydrogen Production System from Wastewater,” filed on 09/05/2024, which has been published.

SPONSORED PROJECTS

Dr. Parimala Renganayaki S received a project titled “Identification of Water Security Solutions and Climate Change Adaptation through Citizen Science and Co-creation in Low- and Middle-Income Countries: Case studies from Nigeria, India and South Africa” from The Association of Commonwealth Universities (ACU). The Project was sanctioned under the School of Civil Engineering, VIT, Vellore, with a start date of 03.09.2024 and an end date of 03.03.2025, for a total duration of 6 months. The project was sanctioned in May 2024, with a funding amount of Rs 12.00 lakhs.

CONSULTANCY PROJECTS

Dr. Ramamohan Rao P served as the Principal Investigator (PI), with Dr. Prasanth S as Co-Principal Investigator (Co-PI), for the project “Integrity of Concrete Lift Zone Using Ultrasonic Pulse Velocity,” funded by Elite Contractors Chennai Pvt. Ltd., India. The project was undertaken under the Centre for Disaster Mitigation and Management, VIT, Vellore, for a duration of 7 days, with a sanctioned amount of ₹0.60 lakhs.(April 24)

Dr. Ramamohan Rao P served as the Principal Investigator (PI), with Dr. Prasanth S as Co-Principal Investigator (Co-PI), for the project “Evaluating the Integrity of Concrete in the Shear Walls at the Lift Zone in Grouted Region through Ultrasonic Pulse Velocity Test,” funded by Elite Contractors Pvt. Ltd., India. The project was undertaken under the Centre for Disaster Mitigation and Management, VIT, Vellore, for a duration of 10 days, with a sanctioned amount of ₹0.30 lakhs.(April 24)

Dr. Prasanth S served as the Principal Investigator (PI), with Dr. Sekar S K as Co-Principal Investigator (Co-PI), for the project “Examining the Concrete Integrity in the Grouted and Retrofitted Regions on the E-Block Raft Footing-1,” funded by Kalpataru Projects International Ltd., India. The project was undertaken under the Centre for Disaster Mitigation and Management, VIT, Vellore, for a duration of 12 days, with a sanctioned amount of ₹0.47 lakhs.(April 24)

Dr. Shanthakumar S served as the Principal Investigator (PI) for the project “Assessing the Design Adequacy of Sewage Treatment Plant (STP), Grey Water Treatment Plant (GWTP) and Effluent Treatment Plant (ETP) with a Capacity of 260 KLD, 340 KLD and 60 KLD,” funded by Eco Services India Pvt. Ltd., India. The project was undertaken under the Centre for Clean Environment, VIT, Vellore, for a duration of 1 month and 3 days, with a sanctioned amount of ₹1.77 lakhs.(May 24)

Dr. Shanthakumar S served as the Principal Investigator (PI) for the project “Assessing the Design Adequacy of Sewage Treatment Plant (STP) and Grey Water Treatment Plant (GWTP) with a Capacity of 350 KLD and 365 KLD,” funded by Eco Services India Pvt. Ltd., India. The project was undertaken under the Centre for Clean Environment, VIT, Vellore, for a duration of 1 month and 3 days, with a sanctioned amount of ₹1.77 lakhs.(May 24)

Dr. Shanthakumar S served as the Principal Investigator (PI) for the project “Assessing the Design Adequacy of Sewage Treatment Plants (STPs) with a Total Capacity of 450 KLD,” funded by Eco Services India Pvt. Ltd., India. The project was undertaken under the Centre for Clean Environment, VIT, Vellore, for a duration of 1 month and 3 days, with a sanctioned amount of ₹1.47 lakhs.(May 24)

Dr. Shanthakumar S served as the Principal Investigator (PI) for the project “Assessing the Design Adequacy of Sewage Treatment Plants (STP) and Grey Water Treatment Plant (GWTP) with a Total Capacity of 180 KLD and 260 KLD,” funded by Eco Services India Pvt. Ltd., India. The project was undertaken under the Centre for Clean Environment, VIT, Vellore, for a duration of 3 days, with a sanctioned amount of ₹1.18 lakhs.(May 24)

Dr. Shanthakumar S served as the Principal Investigator (PI) for the project “Assessing the Design Adequacy of Sewage Treatment Plants (STP) with a Total Capacity of 1300 KLD,” funded by Eco Services India Pvt. Ltd., India. The project was undertaken under the Centre for Clean Environment, VIT, Vellore, for a duration of 1 month, with a sanctioned amount of ₹1.18 lakhs.(May 24)

Dr. Thirumalini S served as the Principal Investigator (PI) for the project “Mineralogical and Microstructural Studies of Cementitious Material,” funded by Novaday Sciences Pvt. Ltd., India. The project was undertaken under the Centre for CO₂, VIT, Vellore, for a duration of 1 month, with a sanctioned amount of ₹0.20 lakhs.(May 24)

Dr. Prasanth S, with Dr. Visuvasam J and Dr. Sekar S K as Co-PIs, received a project titled “Condition Assessment of PSC Box Girder Bridge using Various NDT Tests” from Padmavathy Buildmat, India, under the Centre for Disaster Mitigation and Management, VIT, Vellore, for a duration of 15 days, with a funding amount of ₹1.53 lakhs.(Jun 24)



Dr. Hareesh M, Assistant Professor, School of Civil Engineering had undertaken a consultancy work from Sagar Industries, Pune, India on 11th and 12th April, 2024.



Dr. S.K.Sekar Professor (HAG) and Dr. Shanmuga Priya T, Associate Professor, School of Civil Engineering had undertaken a consultancy work from Saint Gobain India P.L., Glass Division, Tamil Nadu, India on April 30, 2024.

FACULTY OUTREACH



Dr. Parimala Renganayaki S, Associate Professor, School of Civil Engineering, collaborated with Warwick University, Coventry, United Kingdom from April 15 to 19, 2024.



Dr. Mahenthiran S, Assistant Professor, School of Civil Engineering, collaborated with Institute for Global Sustainable Development, University of Warwick, Birmingham, United Kingdom from April 15 to 19, 2024.



Dr. R. Prasanna Venkatesan, Associate Professor, School of Civil Engineering collaborated with Ecole Centrale Lille, Lille, France from June 3 to 7, 2024.

Dr. Muthukumar M, Professor, School of Civil Engineering, delivered a lecture on "Geosynthetics-Based Solutions for Sustainable Infrastructures" at Sanjivani College of Engineering, Kopargan, India.

NATIONAL AND INTERNATIONAL EVENTS ORGANIZED

Dr. Bala Murugan S, Associate Professor, School of Civil Engineering, Dr. Mahenthiran S, Assistant Professor, School of Civil Engineering and Dr. Punitha Kumar A, Associate Professor, School of Civil Engineering organized an "INDUSTRY ACADEMIA CONCLAVE 2024" on April 24, 2024.



Dr. Vinayaga Moorthy M delivered a lecture on "Construction of Four Lane 100m Span Extradosed Bridge Including Approaches Over River Brahmaputra" organized by Dr. Mohan Ganesh G, Professor, School of Civil Engineering and Dr. Santhi A S, Professor and Dean, School of Civil Engineering, on April 10, 2024.



Ms. Amulya Nagati delivered a lecture on "Hazardous Waste Management" organized by Dr. Bhaskar Das, Professor, School of Civil Engineering and Dr. Velvizhi G, Associate Professor, CO2 Research and Green Technologies Centre, on April 10, 2024.



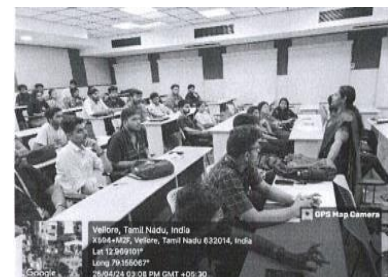
Er. M A Joseph delivered a lecture on "Applications of Special Concrete", organized by Dr. Sofi A, Professor, School of Civil Engineering and Dr. Abdul Rahim A, Professor, School of Civil Engineering, on April 17, 2024.



Avinash Dubedi delivered a lecture on "Transportation Planning for Sustainable Cities and Regions" organized by Dr. Sasanka Bhushan Pulipati, Associate Professor, School of Civil Engineering, on April 22, 2024.



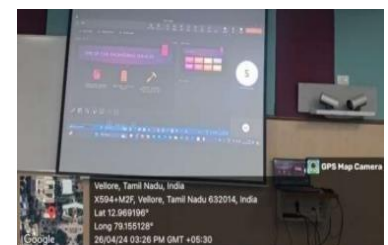
Dr. Renuka S M delivered a lecture on "Leveraging Automation in Construction Projects for Effective and Efficient Management" organized by Dr. Konala S K Karthik Reddy, Assistant Professor, School of Civil Engineering, on April 25, 2024.



Dr. Saravanan R delivered a lecture on "Applications of Remote Sensing and GIS for Civil Engineers" organized by Dr. Porchelvan P, Professor, School of Civil Engineering and Dr. Vaani N, Assistant Professor, School of Civil Engineering, on April 25, 2024.



Er. Savithri Swaminathan delivered a lecture on "Preparing Schedule of Quantities for Base Building Works and Interior Works" organized by Dr. Abdul Rahim A, Professor, School of Civil Engineering and Dr. Sofi A, Professor, School of Civil Engineering, on April 26, 2024. A total of 39 students attended the lecture.



Mr. Ezhil Thalapathi R T delivered a lecture on "Applications of Drone Surveying for Civil Engineers" organized by Dr. Porchelvan P, Professor, School of Civil Engineering, on April 30, 2024. A total of 30 students attended the lecture.



Mr. D. Thinagaran delivered a lecture on "Planning And Execution of Mega Projects" organized by Dr. Shanmuga Priya T, Associate Professor, School of Civil Engineering, Dr. R. Prasanna Venkatesan, Associate Professor, School of Civil Engineering, on May 2, 2024. A total of 22 students attended the lecture.



Dr. S. Velmurugan delivered a lecture on "An Overview of Road Safety Auditing" organized by Dr. Vasantha Kumar S, Professor, School of Civil Engineering and Dr. Venkadavarahan M, Assistant Professor, School of Civil Engineering, on May 02, 2024. A total of 129 students attended the lecture.



Mr. Bhaskar Sen Gupta delivered a lecture on "King of Poisons and Poison of Kings? When Will Be The Mass Poisoning End" organized by Dr. Bhaskar Das, Professor, School of Civil Engineering, on May 17, 2024. A total of 21 students attended the lecture.



Dr. Sumit Kumar Gautam delivered a lecture on "Mission Namami Gange And German / Eu Support for Ganga Rejuvenation" organized by Dr. Amit B Mahindrakar, Professor, School of Civil Engineering, Dr. Bhaskar Das, Professor, School of Civil Engineering and Dr. Saravana Kumar M P, Professor, School of Civil Engineering, on June 5, 2024. A total of 30 students attended the lecture.



LECTURES DELIVERED

Dr. Sasanka Bhushan Pulipati, Associate Professor, School of Civil Engineering, delivered a lecture on "Microsoft Office Tools for Efficient Data Summarization and Documentation" at VIT, Vellore, India.

Dr. Uma Shankar M, Professor, School of Civil Engineering, delivered a lecture on "IoT Based Smart Water Quality System" at Vellore Institute of Technology Chennai, Chennai, India.

INDUSTRIAL VISITS



Dr. Viswanathan T S, Associate Professor, School of Civil Engineering, Dr. Hareesh M, Assistant Professor, School of Civil Engineering and Dr. Thirumalini S, Professor, CO2 Research and Green Technologies Centre, coordinated an industrial visit to Katpadi railway station, Vellore, India, on April 17, 2024. A total of 46 students participated.



Dr. Bala Murugan S, Associate Professor, School of Civil Engineering, Dr. Senthil Kumar N, Associate Professor, School of Civil Engineering and Dr. Shanmuga Priya T, Associate Professor, School of Civil Engineering, engaged 49 students in an industrial visit to SCHWING STETTER INDIA, Cheyyar Industrial Park, India, on April 25, 2024.

MEMORANDUM OF UNDERSTANDING

An MoU was signed with International Ocean Discovery Program, Texas A and M University, United States of America on April 15, 2024 for samples collections and research discussion.

ALUMNI VOICE



Er. M. E. V. Velraj, M.E. (Structure), M.Sc. (Real Estate Valuation)

Batch : 2001-05; B.Tech – Civil Engineering,

Current Position: Chartered Engineer,

Registered Valuer in Income tax department, President, Vellore Civil Engineer Association. Being an alumnus of this esteemed institution is a source of immense pride and gratitude. The knowledge, values, and experiences I gained here have played a vital role in shaping both my professional journey and personal growth. I am thankful to the dedicated faculty, supportive peers, and vibrant campus community for providing a strong foundation. It is heartening to remain connected with my alma mater, and I wish the institution continued success in inspiring and nurturing future generations.

PUBLICATIONS

1. Regalla Sathya Sai. "Effect of nano SiO₂ on rheology, nucleation seeding, hydration mechanism, mechanical properties and microstructure amelioration of ultra-high-performance concrete." *Case Studies in Construction Materials* 20 (2024): e03147.
2. Tamilarasan A., and O. M. Suganya. "Investigation on the properties of sustainable alkali-activated GGBS mortar with nano silica and dredged marine sand: Mechanical, microstructural and durability aspects." *Case Studies in Construction Materials* 20 (2024): e03148.
3. Jacob, Shimy, S. L. Aneeshkumar, and S. S. Ajeesh. "Investigation on Axial Capacity of Cold-Formed Aluminium Alloy Built-Up Columns." *Journal of The Institution of Engineers (India): Series A* (2024): 1-12.
4. Saha Sumit, KSK Karthik Reddy, Krishn Katyal, and Surendra Nadh Somala. "Investigating seismic performance of SMRF buildings under subshear and supershear rupture conditions: Assessment of storey-level internal damage." *Engineering Structures* 309 (2024): 118069.
5. Zipper Sam, Andrea Brookfield, Hoori Ajami, Jessica R. Ayers, Chris Beightel, Michael N. Fienen, Tom Gleeson et al. "Streamflow depletion caused by groundwater pumping: Fundamental research priorities for management-relevant science." *Water Resources Research* 60, no. 5 (2024): e2023WR035727.
6. Wani Faisal Mehraj, Jayaprakash Vemuri, KSK Karthik Reddy, and Chenna Rajaram. "Forecasting duration characteristics of near fault pulse-like ground motions using machine learning algorithms." *Stochastic Environmental Research and Risk Assessment* (2024): 1-30.
7. Narenkumar Jayaraman, Ajitha Kannabiran, Shenbhagaraman Ramalingam, Punniyakotti Parthipan, Bhaskar Das, Mohamad S. AlSalhi, Sandhanasamy Devanesan, Seralathan Kamala-Kannan, Sundaram Thanigaivel, and Aruliah Rajasekar. "Photo-catalytic dye degradation potentials of Ag-Pd bimetallic nanoparticles synthesized from *Vitex negundo*." *Environmental Geochemistry and Health* 46, no. 6 (2024): 200.
8. Anandapadmanaban K., and A. S. Santhi. "Bond Strength of Rectangular CFSST Columns after Exposed to Elevated Temperature." *Civil Engineering Journal* 10, no. 3 (2024): 953-973.
9. Salaimanimagudam M. P., and J. Jayaprakash. "Effect of introducing dummy layers on interlayer bonding and geometrical deformations in concrete 3D printing." *Materials Letters* 366 (2024): 136575.
10. Siva Koppala, and J. Visuvasam. "An Optimally Designed Cold-Formed Steel Beam Thickness Selection for Reducing Web-Crippling Smartly." *International Journal of Steel Structures* (2024): 1-14.
11. Gaikadi S., and S. Vasantha Kumar. "Assessment of Urban Green Cover and its Types using Threshold-based Approach." *International Journal of Geoinformatics* 20, no. 4 (2024).
12. Sarangi Sunita, and O. M. Suganya. "A Comprehensive Review of the Physical and Mechanical Characteristics of Agricultural By-Products as Cementitious Alternatives in the Production of Sustainable Concrete." *Materials Today Sustainability* (2024): 100882.

13. Regalla Sathya Sai, and N. Senthil Kumar. "Investigation of hydration kinetics, microstructure and mechanical properties of multiwalled carbon nano tubes (MWCNT) based future emerging ecological economic ultra high-performance concrete (E3 UHPC)." Results in Engineering 23 (2024): 102432.
14. Jayakumar Venkataraman, and Joseph Antony Visuvasam. "Numerical investigation on failure mechanism of tunnel lining with different fault dip angles and Geological Strength Index under geohazard of fault movement and seismic action." Geomatics, Natural Hazards and Risk 15, no. 1 (2024): 2363425.
15. Salaimanimagudam M. P., and J. Jayaprakash. "Optimal selection of cable reinforcement for concrete 3D printed lattice beam." Materials Letters (2024): 136890.
16. Gaikadi Sangeetha, and S. Vasantha Kumar. "Is ward-level calculation of urban green space availability important?—A case study on Vellore city, India, using the histogram-based spectral discrimination approach." Frontiers in Sustainable Cities 6 (2024): 1393156.
17. Ghalimath Akshaya Gangayya, and Joseph Antony Visuvasam. "Undrained cyclic behavior of Palar sand under variable confining pressure." Innovative Infrastructure Solutions 9, no. 7 (2024): 1-17.
18. Jagan Palani, and Joseph Antony Visuvasam. "Effects of soil small strain nonlinearity on the dynamic behavior of floating column structures considering soil-structure interaction." Innovative Infrastructure Solutions 9, no. 6 (2024): 228.
19. Loganathan Sankar, and Mahenthiran Sathiyamoorthy. "Demarcation of groundwater potential zones in Ponnai sub-basin, Southern India using remote sensing, GIS and fuzzy-AHP approaches." Water Supply 24, no. 5 (2024): 1529-1545.
20. Nanabala Sreekanth Gandla, and S. Balamurugan. "Identification of Optimum Retrofitting Approach for Strengthening RC Beams using CFRP Sheets." International Research Journal of Multidisciplinary Technovation 6, no. 3 (2024): 205-215

EDITORIAL TEAM

Dr. L. Vignesh Rajkumar (Assistant Professor Senior)

Asmita K (Student - 22BCL0055)

Gowtham Sivasubramaniam (Student - 21BCL0154)

Vishanth Nagra (Student - 22BCL0140)

Neha P (Student - 21BCL0193)

CONTACT

Dr. A. S. Santhi

Professor & Dean

School of Civil Engineering

E-mail: dean.sce@vit.ac.in

Ph.: +91-416-220-2222