

# 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 groundbreaking 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, and 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 thirteenth issue of 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 include the students and faculty of SCE that has transpired between October - December 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 co-operation and support for all our future accomplishments.

## STUDENTS ACHEIVEMENT

Mr. Ishan Bhandari (20MST0048) has received the "Outstanding Master Thesis Award" from the Indian Concrete Institute, Chennai – Ultra Tech Awards 2022 on 22nd November, 2022. He completed his thesis under the supervision of Dr. A. Sofi, Professor, SCE, VIT Vellore, and Er. Rajesh Kumar from CBRI, Roorkee.



Mr. Palash Godani, PhD Scholar, who is doing research under the supervision of Dr. T. Shanmugapriya, got into a student exchange programme for about three months at University of Malaya under the guidance of Professor Ir. U. Johnson Alengaram, Director, Centre for Innovative Construction Technology (CICT), Department of Civil Engineering, University of Malaya, Malaysia.



## FACULTY ACHEIVEMENT

Mr. Hundaol Dega from Ethiopia has pursued 8 weeks of research from 15<sup>th</sup> October to 9<sup>th</sup> December 2022 in the topic "Energy Performance Analysis of Building Subjected to Ethiopian Climatic Condition Using Building Information Modeling" under the guidance of Dr. T. Shanmuga Priya, Associate Professor, School of Civil Engineering. The student came through AIESEC India Incoming Global Talent agreement, International student Internship Programme.



## FUNDED PROJECT

Dr. A. Sofi, Professor, SCE has received a grant of INR 18.30 lakhs fund from DST-SERB-TARE to conduct a three year research project on the title "Investigation on utilization of waste tire rubber and recycled concrete fines in concrete- A multiscale Approach" on October 6<sup>th</sup>, 2022.

## CONSULTANCY PROJECT

Dr. S. Vasantha Kumar, Professor, SCE has done a consultancy work on “Total station survey to calculate the volume of legacy waste dumped at backside of govt. hospital in Adukkamparai, Vellore district” for Pennathur First Grade Town Panchayat, Vellore on 19<sup>th</sup> October 2022.



## NEW RESEARCH INFRASTRUCTURE - CONCRETE 3D PRINTING LAB

The Honorable Chancellor and Founder Dr. G. Viswanathan inaugurated the newly established Concrete 3D Printing Lab at the Department of Structural and Geotechnical Engineering, School of Civil Engineering, Vellore Institute of Technology, Vellore on 27<sup>th</sup> October 2022. The Vice presidents Mr. Sankar Viswanathan and Dr. Sekar Viswanathan, Assistant Vice President, Kadhambari S. Viswanathan, Vice Chancellor Dr. Rambabu Kodali, Pro-Vice Chancellor Dr. S. Narayanan, Registrar Dr. T. Jayabarathi, Dean Dr. A. S. Santhi, Heads of the Department Dr. M. Muthukumar and Dr. M. P. Saravana Kumar, Prof. J. Jayaprakash, Lab - in charge have also participated in the inaugural function of Concrete 3D Printing Lab. Honorable Chancellor Dr. G. Viswanathan highlighted that “by adopting 3D printing in the construction industry, we can reduce the time of construction, achieve cost effectiveness, design flexibility and fewer materials usage”.



## NATIONAL/INTERNATIONAL EVENTS ORGANISED

Dr. S. Vasantha Kumar, Professor, SCE, coordinated an event titled "Aerial Survey with UAV and GIS Mapping." The event featured a talk by Mr. Arveen Raj B, Founder & Director of Vimanam Air Technical Pvt. Ltd. & Vimanam Airspace Pvt. Ltd. in Chennai, India, on 2<sup>nd</sup> November 2022.

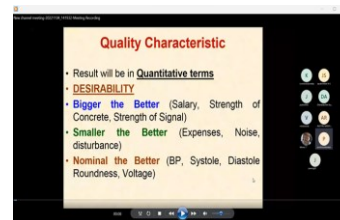
Dr. L. Vignesh Rajkumar and Dr. S. Vasantha Kumar coordinated a workshop on "LIDAR Technology for Civil Engineering Applications" on 4<sup>th</sup> November 2022. They were also the resource persons for the event. The workshop was attended by 37 participants from various well-known academic institutions.

Dr. A. Punitha kumar, SCE; Prof. Shivangi Singh Parmar and Prof. Piyush Das, VSPARC jointly organized an "International Annual Research Symposium 2022" on 16<sup>th</sup> November. Dr. Masa Noguchi, Associate Professor, Melbourne school of design, Australia was invited as Chief Guest. A total of 64 research articles from National and International researchers were accepted for this research symposium.

Dr. OM. Suganya, Assistant Professor and Dr. T. Meena, Associate Professor, SCE, VIT coordinated a two-day workshop titled "Design of experiments by Taguchi method" on the 3<sup>rd</sup> & 4<sup>th</sup> November 2022. The resource persons of the event were Dr.S.Rajesham, Adjunct Professor, RGUKT (IIIT) Basar, Telangana, Hyderabad; Dr. K. Srinivasulu Reddy, Professor, Sree Nidhi Institute of Science and Technology, Hyderabad and Dr. J. Kandasamy, Professor, Maturi Venkata Subba Rao (MVSR) Engineering College, Hyderabad. A total of 66 participants attended the workshop and actively participated in learning the statistical tool "Taguchi method" for experimental design.

Dr. R. Prasanna Venkatesan, Assistant Professor and Dr. T. Shanmuga Priya, Associate Professor, SCE, VIT conducted a Hands-on Training on Project Planning using Primavera software for L&T Engineers on 15<sup>th</sup> & 16<sup>th</sup> December 2022. A total of 29 L & T practicing Engineers attended the programme. The participants were trained on various exercises related to project planning and scheduling for different buildings.

Prof. Dr. J. Jayaprakash, Professor and Dr. A Punitha Kumar, Associate Professor, SCE, VIT organised a half day Hands-On training on Concrete 3D Printing Technology for L & T Engineers during 15<sup>th</sup> December 2022 in the newly established Concrete 3D Printing Lab, SCE, VIT Vellore. More than 25 diploma-level L & T Engineers participated in the training programme.



## NABL ACCREDITATION

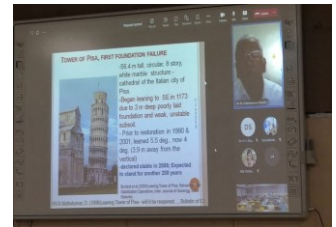
Strength of Materials Laboratory got NABL accreditation further for the period of two years, from 06.01.2023 till date 05.01.2025 under the guidance of NABL team, SCE headed by Dr. T.S. Viswanathan. The auditing team after thorough auditing on 17<sup>th</sup> and 18<sup>th</sup> December 2022 recommended renewal for the mechanical testing discipline.

## NATIONAL AND INTERNATIONAL LECTURES

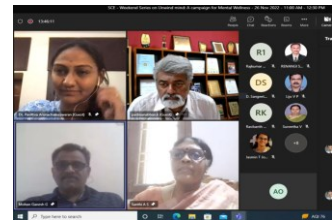
Dr. Kuruvilla John, Professor, Department of Mechanical Engineering, University of North Texas, Denton, Texas, U.S.A delivered a lecture on “Unconventional sources of air pollution and associated air quality management challenges” on 13<sup>th</sup> October 2022 organized by Dr. B. Srimuruganandam, Professor, SCE and Dr. S. Shantha Kumar, Professor, CCE, VIT.



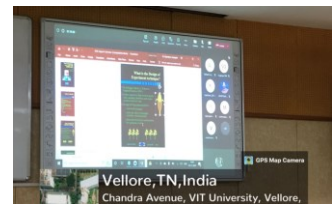
Dr. N. Subramanian, Structural design consultant, USA delivered a lecture on “Learnings from structural failures” on 5<sup>th</sup> October 2022 organized by Dr. G. Mohan Ganesh and Dr. A. S. Santhi, Professor, SCE, VIT.



Dr. N. Pavithra Arunachleswaran, Consultant Psychiatrist delivered a lecture on “Unwind mind: A campaign for mental wellness” on 26<sup>th</sup> November 2022 organized by Dr. G. Mohan Ganesh and Dr. A. S. Santhi, Professor, SCE, VIT. The session focused on the areas of stress management, effective communication and interpersonal relationship.



Er. Ankit Agarwal, Asst Manager, Valuation Dept., Housing Development Finance Corporation, Raipur, Chhattisgarh, India, an Alumni of SCE (2015 batch), VIT delivered an Industry expert lecture on Building Information Modelling (BIM) & Real estate Valuation. The event was organised by Dr. OM. Suganya and Dr. T. Meena on 5<sup>th</sup> October 2022.

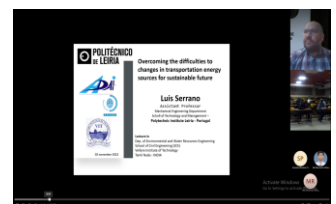


Dr. Vishnuvardhan S, Principal Scientist, CSIR-SERC, Chennai, delivered a lecture on “Fatigue and Fracture Studies on Steel Structures and Structural Components” on 7<sup>th</sup> December 2022 organized by Dr. Punitha Kumar, Associate Professor and Dr. Jayaprakash J, Professor SCE, VIT.



Mr. T. Mukesh Kumar, Inspector of Police (Traffic) Katpadi, Vellore District delivered an expert lecture titled “Traffic Control Devices” on 19<sup>th</sup> October 2022 organised by Dr. P. Sasanka Bhushan, Associate Professor and Dr. M. Venkadavarahan, Assistant Professor, SCE, VIT.

Dr. Luis Manuel Ventura Serrano, Assistant Professor, Mechanical Engineering Department, School of Technology and Management, Polytechnic of Leiria, Leiria, Portugal delivered an expert lecture titled “Overcoming the difficulties to changes in transportation energy sources for sustainable future” on 2<sup>nd</sup> November 2022 organised by Dr. P. Sasanka Bhushan, Associate Professor and Jayaprakash J, Professor SCE, VIT.



## FACULTY OUTREACH



Dr. B. Srimuruganandam, Professor, SCE, VIT, Vellore was invited to deliver an expert lecture titled “Understanding Noise Pollution and its Assessment Methods”, in an online panel discussion on “Strategies for Managing Noise Pollution during Celebrations” organized by Centre for Pollution Control and Environmental Engineering, Pondicherry University, Puducherry, India (11.00 am-01.00 pm) on 19<sup>th</sup> October 2022.



Dr. S. Parimala Renganayaki, Associate Professor, SCE, VIT was invited to deliver a talk on “Managed Aquifer Recharge for Sustainable Water Management in India” organized by SSN College of Engineering, Kalavakkam, Chennai on 22<sup>nd</sup> November 2022.



Dr. T. Shanmuga Priya, Associate Professor, SCE, VIT presented a paper titled “Selection and use of Natural Shale as SCM” in the 17<sup>th</sup> NCB International Conference on Cement, Concrete and Building Materials conference at New Delhi during 6<sup>th</sup> to 9<sup>th</sup> December 2022.



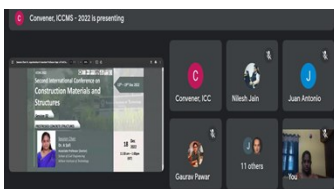
Prof. Dr. J. Jayaprakash, Professor, SCE, VIT delivered a talk on ‘Concrete 3D Printing in Construction Industry’, in a 5-day online FDP program on “Advancements in Concrete Technology (AICTE - 2022)” organized by Ballari Institute of Technology & Management, Ballari, Karnataka on 20<sup>th</sup> December 2022.



Dr S. Parimala Renganayaki Associate Professor, School of Civil Engineering, VIT, Vellore has chaired a session in a Conference on “Integrated Water Resources Management: Prospects and challenges” held at Karunya University, Coimbatore from 8<sup>th</sup> to 10<sup>th</sup> December 2022.



Dr. P. Jagadeesh, Professor HAG, School of Civil Engineering, VIT, Vellore was invited to deliver an expert lecture on “Irrigation Engineering” organized by Sri Venkateshwara College of Engineering and Technology, Chittoor, Andhra Pradesh on 30<sup>th</sup> December 2022.



Dr. A. Sofi, Professor, SCE, VIT, Vellore chaired a technical session at the “Second International Conference on Construction Materials and Structures” (ICCMS 2022), VIT, Vellore held during 18<sup>th</sup> to 19<sup>th</sup> December 2022.



Dr. P. Sasanka Bhushan, Associate professor, SCE, VIT and his scholar Mr. V.S. Meganathan participated in 14<sup>th</sup> TPMDC at IIT Bombay from 19<sup>th</sup> to 21<sup>st</sup> December 2022. Dr. Sasanka presented a paper on “Bringing Back Cycles on Indian Roads: Transportation and Policy Analysis”. He also chaired a technical session. V.S. Meganathan presented a paper on “A methodology for selection of on-field observation sites for analyzing the effect of site characteristics on wrong-way movements”.



Dr. P. Sasanka Bhushan, Associate Professor investigated the conditions at road accident hotspot locations in Vellore District and recommend short term improvements at each location. Dr. Pulipati and his student team which included three B.Tech Students (Mr. Ankit Ashish, Mr. Pratham Sinha, Mr. Singareddy Om Prakash) and two PhD Scholars (Mr. Biswajit Mohanty and Mr. V.S. Meganathan) investigated nearly 38 locations across Tirupattur district and presented their observations and recommended measures for reducing accident risk to the Superintendent of Police of Tirupattur District.

## PUBLICATIONS

Yeswanth Sai Tatineni and Jagadeesh Putta (2022) Enhanced Strength, Durability, and Microstructural Attributes of Graphene Oxide-Modified Ultrafine Slag Cement Mortar. Buildings, Vol: 12, Issue: 12, DOI: 10.3390/buildings12122199.

Junaid Ahmed, E. S., and Mohan Ganesh. G, (2022), 'A Comprehensive Overview on Corrosion in RCC and Its Prevention Using Various Green Corrosion Inhibitors', Buildings, Vol. 12(10), Paper id: 12101682, <https://www.mdpi.com/2075-5309/12/10/1682>

P.P. Panda, M.A. Aswini, Poonam Bhatt, B. Srimuruganandam, Aditya Peketi and Ashwini Kumar, (2022) Bioactive trace metal composition and their fractional solubility in aerosols from the Arabian Sea during the Southwest Monsoon, ACS- Earth and Space Chemistry 6(8), 1969-1981. <https://doi.org/10.1021/acsearthspacechem.2c00067>

Selvaraj, T., Shanmuga Priya T, Kaliyavaradhan, S. K., Kakria, K., & Malladi, R. C. (2022). Use of E-Waste in Metakaolin Blended Cement Concrete for Sustainable Construction. Sustainability, 14(24), 16661.

M. P Salaimanimagudam, J. Jayaprakash (2022). Optimum selection of reinforcement, assembly, and formwork system for digital fabrication technique in the construction industry – A critical review, Structures, 46, 725-749. (DOI: /10.1016/j.istruc.2022.10.094).

Ganesh Naidu Gopu, Sofi A (2022) The influence of fiber RC beams under flexure on the chloride-induced corrosion, Case Studies in Construction Materials, Vol: 17, <https://doi.org/10.1016/j.cscm.2022.e01566>

Ganesh Naidu Gopu, Sofi A (2022) Corrosion-induced bond behavior of steel, e-glass, and e-waste copper wire fiber reinforced concrete, Romanian Journal of Materials, Vol: 52, pp-404-411.

### Conference papers

Yeswanth Sai T and Jagadeesh P (2022) Development of graphene oxide and alccofine reinforcing effects in cement composites. International Conference on Recent Developments in Civil Engineering (RDC-2022). Motilal Nehru National Institute of Technology Allahabad, Prayagraj, UP, 20-21 October 2022.

Selva Ganesh M and Jagadeesh P (2022) Influence of assortment treated recycled coarse aggregate and manufactured sand on workability and mechanical properties of sustainable concrete. International Conference on Recent Developments in Civil Engineering (RDC-2022). Motilal Nehru National Institute of Technology Allahabad, Prayagraj, UP, 20-21 October 2022.

## Book Chapters

Venkatesh Budamala, Abhinav Wadhwa, Amit B. Mahindrakar and B. Srimuruganandam., 2022. "Temporal downscaling of daily to minute interval precipitation by emulator modelling based genetic optimization", In: John G Lyon (eds) Geospatial Information Handbook for Water Resources and Watershed Management, Volume 1, CRC Press, Routledge-Taylor and Francis, Boca Raton, USA. Pp. 197-217. ISBN: 9781003175018. <https://doi.org/10.1201/9781003175018-11>

Abhinav Wadhwa, B. Srimuruganandam and K. Pavan Kumar, 2022. "Application of densely stacked satellite image classification and multinomial logistic regression analysis in predicting urban sprawl", In: John G Lyon (eds) Geospatial Information Handbook for Water Resources and Watershed Management, Volume 2, CRC Press, Routledge-Taylor and Francis, Boca Raton, USA. Pp. 213-241. ISBN: 9781003175025. <https://doi.org/10.1201/9781003175025-10>

## INDUSTRIAL VISIT

Dr. P. Sasanka Bhushan, Associate Professor, SCE, VIT organised an Industrial visit to Gandhi Block , VIT Vellore for the students of Urban Planning Class to Demonstrate on the Green Building – Passive Principles on 9<sup>th</sup> November 2022.



## EDITORIAL TEAM

Dr. L. Vignesh Rajkumar (Assistant Professor Senior)

Prof. J. Malathy (Assistant Professor)

Bikalpa Gautam (Student - 20BCL0135)

## CONTACT

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