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# SCE e-Newsletter

## School of Civil Engineering (SCE)

### Vision

To be internationally recognized in Civil Engineering for ground - breaking contributions, exceptional leadership, strong commitment to creative problem-solving and professional integrity.

### Mission

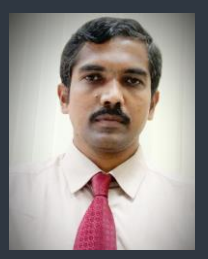
Pioneering the emerging skills in Civil Engineering.

Preparedness 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.

### Dean's Message

It is my immense pleasure to welcome you all to view the sixth issue of SCE e-Newsletter by School of Civil Engineering (SCE), Vellore Institute of Technology



Vellore, TamilNadu, India. This issue brings out the accomplishment of VIT citizens include the students and faculty of SCE that has transpired between October – December 2020.

I am delighted to inform you that a new '**Structural Engineering Laboratory**' was virtually inaugurated by our **Honourable Chancellor Dr. G. Viswanathan** on 21 October 2020. In order to minimize the construction duration, the structural engineering laboratory was constructed using Precast construction method.

This issue highlights the active participation and contribution in various outreach activities by faculty members and achievements of undergraduate and postgraduate students. We, from the accomplishment of students, could able to see the students' dedication and their calibre in participating various challenging activities. Moreover, this SCE e-newsletter also focusses on research grants, consultancy projects, guest lectures organized by faculty members, publications in high quality International and National Journals and faculty outreach. 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 the future.

**Issue No. 06 October - December 2020**



**Govt. of India Recognizes VIT as an Institution of Eminence (IoE)**

**Dr. S. Shantha Kumar**  
Professor & Dean, School of Engineering  
Vellore Institute of Technology, Vellore

**VIT- A place to learn; A chance to grow**

Prof. Dr. S. S. Chandrasekaran, SCE, VIT, Vellore, India received a project entitled 'Development of forewarning system for landslides in The Nilgiris' from Department of Science & Technology (DST), India for a total cost of INR 48.67 Lakhs.

### Consultancy Projects

Prof. Dr. S. Shantha Kumar, Dean, SCE, VIT, Vellore, India received consultancy project on 'Assessing the adequacy of sewage treatment plants for treating the wastewater generated from residential cum commercial complex' for worth of INR 2,95,000.

Dr. S. Vasantha Kumar, Associate Professor, SCE, VIT, Vellore, India received in-house consultancy work on 'Total Station Survey and Creation of Digital Elevation Model (DEM) for Gandhi Block, VIT, Vellore'.

### National Workshop and Faculty Development Programmes

Prof. Dr. R. Saravanane, Head, Department of Civil Engineering, Pondicherry Engineering College, Puducherry, India delivered lecture on 'Transforming Research to Innovation and Patents' through MS Teams under Faculty Development Programme (FDP) on 23 October 2020 at School of Civil Engineering (SCE), Vellore Institute of Technology (VIT), Vellore, India. More than 30 members from SCE were participated in this event (Organized by Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore).

Dr. Sachin S. Gunthe, Associate Professor, Department of Civil Engineering, Indian Institute of Technology Madras, Chennai, India delivered lecture on 'How to write potentially winning research proposal; things not to do!' through MS Teams under Faculty Development Programme (FDP) on 17 October 2020 at School of Civil Engineering (SCE), Vellore Institute of Technology (VIT), Vellore, India. More than 30 members from SCE were participated in this event (Organized by Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore).

Dr. A. Sofi, Associate Professor and Dr. T. Shanmugapriya, Associate Professor, SCE, VIT, Vellore, India organized a One day webinar on 'Fibre Reinforced Composites - Strengthening of Concrete Structures' on 26 November 2020 at VIT, Vellore. The speakers were Dr. Sunitha K Nayar, Associate Professor, IIT Palakkad, Prof. Dr. Suriya S Prakash, IIT Hyderabad and Dr. Satish Jain, Managing Director, UHPC India Pvt. Ltd., Mumbai. Around 60 members from various institutes were participated in the webinar.

Dr. B. Divya Priya, Assistant Professor and Dr. N. Senthil Kumar, Associate Professor, SCE, VIT, Vellore, India organised 'Virtual Technical Internship Programme on STAAD Pro CE' during 02-12 December 2020 at VIT, Vellore. The speakers were Mr. Balamurugan, Senior Technical Consultant (Bentley certified STAAD Pro consultant), Mr. Rajesh Kumar, Director Technical Sales at TechApps Consulting Services. Nearly 50 undergraduate and post graduate students and faculties of SCE were participated in the programme.



Dr. M. Uma Shankar, Associate Professor and Dr. S. Mahenthiran, Assistant Professor, SCE, VIT, Vellore, India organised and delivered online Hands-on Training Programme on 'Groundwater Flow Modelling using Visual MODFLOW' during 04 December 2020 at SCE, VIT Vellore. Several participants from various Institutes were participated in the one day workshop.

Dr. S. Vasantha Kumar, Associate Professor and Dr. Divya Priya B, Assistant Professor, SCE, VIT, Vellore, India organized and delivered One day Virtual Workshop on 'LIDAR Technology for Civil Engineering Applications' during 18 December 2020 at SCE, VIT, Vellore. Several participants from various Institutes were participated in the workshop.



Delivered online lecture on 'Methods and tools for Socio-Economic Impact Assessment', by Dr. Pradheeps Muthulingam, Socio-Economic Impact Assessment (SEIA) Expert-Regional Integrated Multi-hazard Early Warning System (RIMES), Bangkok, Thailand on 15 October, 2020 (Organized by Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore).

Delivered online lecture on 'Dynamic Analysis of Railway Bridges', by Dr. Deepthi T Madathil, Structural Engineer, Anwikar Consultants GmbH, Wuerzburg, Germany on 17 October 2020 (Organized by Dr. S. S Ajeesh, Assistant Professor, SCE, VIT, Vellore).



Delivered online lecture on 'The Concepts of RC Doubly Reinforced Beams and Flanged Beams' by Dr. Prachand Man Pradhan, Associate Professor and Head, Department of Civil Engineering, Kathmandu University, Nepal on November 2020 (Organized by Prof. Dr. A. S. Santhi and Prof. Dr. G. Mohan Ganesh, SCE, VIT, Vellore).

Delivered online lecture on 'Basal Reinforcement and Geosynthetic Encased Stone Columns for Ground Improvement' by Mrs. Minimol Korulla, Vice President & Head-Strategic Initiatives, Maccaferri Environmental Solutions Pvt. Ltd., Gurgaon, India on 13 October 2020 (Organized by Dr. M. Muthukumar, Associate Professor and Head, SCE, VIT, Vellore).

Delivered online lecture on 'Traffic Impact Study and Introduction to Micro-simulation Models' by Mr. B. Purushotham Murali, Transport Planning & Advisory Team Lead, WSP, Bangalore on 28 October 2020 (Organized by Dr. P. Sasanka Bhushan, Associate Professor, SCE, VIT, Vellore)

Delivered online lecture on 'Improper rural wastewater management, its environmental impact and mitigation strategies', by Dr. Aviraj Datta, Scientist, ICRISAT Development Center, Hyderabad, India on 27 October 2020 (Organized by Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore).

Delivered online lecture on 'Treatment technologies for recycle and reuse of domestic wastewater' by Mr. Veeralakshamanan Bhagavathy, Head of Inclusive Business, Sustainability, Covestro, Chennai, on 04 November 2020 (Organized by Prof. Dr. K. Pavan Kumar, SCE, VIT, Vellore).

Delivered online lecture on 'Wind effects on Building and Structures' by Dr Keethana M, Senior Scientist, CSIR-SERC, Chennai, on 27 November 2020 (Organized by Prof. Dr. P. Jagadeesh, and Dr. Dillip Kumar Barik, Associate Professor, SCE, VIT, Vellore).

## Publications

Umamaheswari, J., Kavitha, M. S., Shanthakumar, S. (2020). Outdoor cultivation of *Chlorella pyrenoidosa* in paddy-soaked wastewater and a feasibility study on biodiesel production from wet algal biomass through in-situ transesterification, *Biomass and Bioenergy*, 143, 105853 (<https://doi.org/10.1016/j.biombioe.2020.105853>).

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Manojkumar, N., Srimuruganandam, B. (2020). Health benefits of fine particulate matter standards in India – A nationwide assessment, *Science of the Total Environment* (<https://doi.org/10.1016/j.scitotenv.2020.142999>).

Nair N. A., Sairam, V. (2020). Research initiatives on the influence of wollastonite in cement-based construction material-A review *Journal of Cleaner Production*, 283, 124665 (<https://doi.org/10.1016/j.jclepro.2020.124665>).

Simon J., Thirumalini S., Simona R. (2020). Evaluating the Impact of Organic Addition and Aggregate Gradation on Air Lime Mortar: New Compatible Green Material for Heritage Application, *International Journal of Architectural Heritage*, (<http://doi.org/10.1080/15583058.2020.1836287>).

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- Narmadha, V. V., Jose, J., Patil, S., Faruqui, M. O., Srimuruganandam, B., Saravanadevi, S., Krishnamurthi. K. (2020). Assessment of microplastics in roadside suspended dust from urban and rural environment of Nagpur, India, *International Journal of Environmental Research* 14(6), 629–640.
- Shiva Kumar, M., Thirumalini, S. (2020). Characterization study on the influence of limestone and shell lime as a fine aggregate substitute: A traditional approach on lime plaster restoration, *Material Today: Proceeding*, (<https://doi.org/10.1016/j.matpr.2020.11.454>).
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- Venkatesh, S., Manjula, F., Sarath K., Thirumalini, S., Vernon C. (2020). Modeling and Assessment of Lightning Hazards to Humans in Heritage Monuments in India and Sri Lanka, *IEEE Access*, 8, 228032 - 228048.
- Koshy, A. J., Sofi, A., Santhakumar A. R. (2020). Lateral Load Analyses of Multi-storeyed Frames with and Without Shear Walls, *Smart Technologies for Sustainable Development. Lecture Notes in Civil Engineering*, Springer, 78, 19-35.
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- Shiva Kumar, M., Thirumalini, S. (2020). A scientific study on the role of organic lime mortars of Padmanabhapuram Palace, Thuckalay, Tamilnadu, India, *European Physical Journal Plus*, 135, 923.
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### New Research Infrastructure

Purchased Brazilian Test Apparatus for Geotechnical Engineering Laboratory, to measure the indirect tensile strength of rock as per IS: 10082.



A new '**Structural Engineering Laboratory**' was virtually inaugurated by our **Honourable Chancellor Dr. G. Viswanathan** on 21 October 2020. The intent of Structural Engineering Laboratory to facilitate the researcher's to conduct precise tests on real size and scaled models of structural elements include beams, slabs, columns and walls. To minimize the construction duration, the Structural

Engineering Laboratory was constructed using Precast construction method. The precast construction method assures quality and durability of the structure, where most of the building components were made at factory and assembled at site. Equipment Details: (1) 50 Tonnes capacity fatigue rated double acting servo hydraulic actuator with loading frame. (2) 100 Tonnes capacity displacement controlled hydraulic jack with loading frame.

## Faculty Outreach

Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore, India delivered three technical lectures entitled (i) Air quality monitoring for exposure assessment (ii) Human exposure, toxicity, and risk assessment from air pollution, and (iii) Prediction, interpretation and reporting of exposure assessment in a three-day online training Programme on “Health Risk Assessment of Population” organised by Health and Toxicity Cell, CSIR-National Environmental Engineering Research Institute (NEERI), Nagpur, India during 24 - 26 November 2020.

Dr. S. S Ajeesh, Assistant Professor, SCE, VIT, Vellore, India delivered a talk for AICTE Sponsored One week online Short Term Training Programme on ‘Cold formed steel in construction industry (SERIES – II)’, organized by Coimbatore Institute of Technology on 17 December 2020.

Dr. T. S. Viswanathan, Associate Professor, SCE, VIT, Vellore, India delivered a lecture on ‘Sustainable Practices in Construction’ under AICTE sponsored FDP organized by Velammal Engineering College, Chennai.

Dr. A. Sofi, Associate Professor, SCE, VIT, Vellore, India has chaired the following events:

- Three Days Virtual International Conference on Current Trends and Future Challenges in Education (ICTFCE 2020), during 07 - 09 October 2020 at VIT, Chennai.
- Two Days Virtual International Conference on Applied Science, Technology Management Studies (ASTMLS 2020), during 11 - 12 December 2020 at Department of Civil Engineering, Sona College of Technology, Salem.
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## Students Participation

The undergraduate students Shivam Mittal (16BCL0054) and Shubham Kumar Singh (16BCL0252) under of Dr. Sasanka Bhushan, Associate Professor, SCE, VIT, Vellore, India have participated and presented a paper on ‘An online self-administered course on safe driving for Indian road users’ at 7<sup>th</sup> Conference on Transportation Systems Engineering and Management 2020 (CTSEM 2020) organized by KSCSTE-National Transportation Planning & Research Centre and College of Engineering Trivandrum, 29-30 December 2020.

## Other Related Information

Dr. Dillip Kumar Barik, Associate Professor, SCE, VIT, Vellore, India participated in Guru Cool Program (6 Days Training on Emerging Technologies followed by a Project Build-a-Thon) Conducted by University Relations, IBM India, during September- October 2020.

Dr. P. Sasanka Bhushan, Associate Professor, SCE, VIT, Vellore, India attended the Parliamentary Constituency Committee for Road Safety – Meeting which was convened on 29 December 2020 under the Chairmanship of Hon’ble Member of Parliament, Vellore PC at the District Collector’s office, Vellore.

## Editorial Team

Dr. J. Jayaprakash, Professor, SCE, VIT, Vellore  
Dr. Pavan Kumar Kumamuru, Professor, SCE, VIT, Vellore  
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