



## 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

While welcoming the New Year 2020, it is my immense pleasure to welcome you all to view the Second Issue of SCE e-Newsletter with



different flavour by School of Civil Engineering (SCE) Vellore Institute of Technology (VIT), Vellore, TamilNadu, India. 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 see the students' dedication and their caliber in Design Competitions and Research Activities. This issue also provides a brief view on three days Civil Engineering Symposium *Structura 19'* organized by ASCE Student Chapter during 18 – 20 October 2019. Moreover, this e-newsletter also focusses on workshops and guest lectures organized by faculty members, publications in high quality International and National Journals and Conferences and Industrial Visits.

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

Wish you all a very happy and prosperous New Year 2020!

Issue No. 02    October – December 2019



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

VIT- A place to learn; A chance to grow

# Students' Achievements

**Asmit Goel**, B.Tech Civil Engg. - III Year student bagged 2<sup>nd</sup> Runner up in “Bentley Student Design Competition” among Transportation Engineering Designs with Open Roads Designer 2019 which is organised by Bentley Institute in Pune on 17 December, 2019. He worked under the guidance of Dr. Sasanka Bhusan, SCE, VIT, Vellore, India.



**Shashank Somwanshi (18MEE0019)** M.Tech (Energy and Environmental Engg.) student received “Best Poster Award” (First Prize Under Environmental Category – Gold Medal) and Cash Prize of INR 2000 for paper entitled ‘Potential dose attributed to the particulate matter exposure from indoor air pollution sources’ in The 15<sup>th</sup> International Symposium on Metal Ions & Organic Pollutants in Biology, Medicine and Environment (METALIONS – 2019) held at CSIR - NEERI, Nagpur, India, 30 - 31 October 2019.

The co-authors are Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Sanket Mankar, Project Assistant, CSIR-NEERI, Nagpur, Dr. Sangita Goel, Scientist, CSIR-NEERI, Nagpur, and Prof. Dr. R. Gupta, VNIT, Nagpur.

**Monish Raj M (18MEE0028)** M.Tech (Energy and Environmental Engg.) student received “Best Paper Award (Second Prize)” for technical paper entitled ‘Exposure of fine particulate matter concentration and its inhalation dosage in different urban environments’ in The 4<sup>th</sup> Indian International Conference on Air Quality Management (IICAQM 2019): Measurement, Modelling, Health Risk and Public Policy held at IIT-Bombay during 18 – 20 December 2019. The co-authors are N. Manojkumar and Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore.



The M.Tech Structural Engineering students **M. Sankara Narayanan (18MST0024)**, **S. Daniel (18MST0010)** and **A. Veerapandi (18MST0072)** received ‘GD Naidu Young Scientist Award’ for project entitled ‘Soil – Pile Structure Interaction Effects on Seismic Behaviour of Building Frames’, in Fast Track Research Initiative (FTRI) – 2019, which held on 4 December 2019, VIT, Vellore, The FTRI project was under the supervision of Mr. T. Visuvasam, Assistant Professor, SCE, VIT, Vellore.

# Faculty Achievements



Dr. A. Sofi, HOD & Associate Professor, SCE, VIT received ‘DUO-India Fellowship Award’ under research exchange programme to visit Universita Degli Studi Di Padova (UNIPD), Padova, Italy.



Dr. S. Mahenthiran, Assistant Professor, SCE, VIT was a recipient of “K F Antia Memorial Prize” from Institution of Engineers India (IEI) for his research paper. He received the award at 34<sup>th</sup> Indian Engineering Congress, Hyderabad, India on 27 December 2019.

# Faculty Achievements



Mr. T. Visuvasam, Assistant Professor, SCE, VIT, as a guide, was a recipient of “Dr. A. P. J. Abdul Kalam Advisor Award” for project entitled “Soil – Pile Structure Interaction Effects on Seismic Behaviour of Building Frames”, under Fast Track Research Initiative (FTRI) – 2019 which held on 4 December 2019, VIT, Vellore.

## Workshops Organized



Dr. M. Uma Shankar, Associate Professor & HOD and Dr. S. Mahenthiran, Assistant Professor, SCE organised two days Hands-On training programme on “Groundwater flow modelling using Visual MODFLOW” during 18 – 19 October 2019 at VIT Vellore. The speakers for this workshop are Dr. R. Saravanan, Associate Professor, Anna University and Dr. Parimala Reganayaki, Associate Professor, VIT. More than 25 members from different states were participated in the training programme.

The School of Civil Engineering, Vellore Institute of Technology and Ultratech Cement jointly organized a “Skill Empowerment Programme for Women Workers in Construction Industry” on 26 November 2019. The Chief Guest Er. A. P. Murugan, Assistant General Manager Regional Technical Services, Ultratech, Chennai delivered speech on “Importance of selection of construction materials, techniques, and effective plastering methods”. As a part of this programme, practical demonstration of testing and characterization of mortar and concrete was demonstrated by T. Prakasam, Territory Technical Services, Manager, Ultratech, Dr. S. Balamurugan, Assistant Professor, SCE and Dr. T. Shanmuga Priya, Associate Professor, SCE, VIT. A total of 60 women workers in Construction Industry have benefited from this programme.



## Structura’19 – ASCE Student Chapter Event



The American Society of Civil Engineers (ASCE) student chapter organized a three days National Level Symposium “**Structura 19**” during 18 – 20 October 2019, VIT, Vellore, India. This fest aimed at providing a platform for Young Minds to showcase their talent and to inculcate new skills in technical or managerial levels. The Chief Guest Prof. Dr. Chandra Kishen, IISC Bangalore delivered lecture and appreciated the organizers to share the knowledge. A series of workshops were organized in different areas include Green Building

Design, Ground Improvement Techniques, Advanced Concrete Technology, Advanced Foundation Analysis, Transportation Engineering and hands on training in Staad Pro and REVIT softwares. Apart from that, events like Cad-A-Thon and Green Concrete Cube Competition were organized to test the capabilities of the students on unleashing the inner artist in them and to implement the prime trend of the eco-friendly systems. These events and workshops, in turn enabled, the participants to outlook conventional practices in the design process of construction and integrate them with the technologies and its applications to produce efficient and effective solutions to Civil Engineers.

# Industrial Visit



A visit to AFCONS site at Triupathi to learn the “Construction process of Flyover” was organized for Undergraduate Students of SCE by Dr. A. Sofi, HoD & Associate Professor & Dr. M. Muthukumar, Associate Professor, SCE, VIT on 15 October 2019. The flyover is constructed from Tiruchendur market yard to Kapilatheertham Nandi circle via Lakshmipuram and Ramanuja circle on the existing Tirumala bypass road.

A visit to “Ranipet Sidco Finished Leather Effluent Treatment Company Limited”, Sidco Industrial Estate, Sipcot, Ranipet was organized for Undergraduate Students of SCE by Prof. Dr. S. Shantha Kumar, SCE, VIT, Vellore on 16 October 2019.



Dr. Punitha Kumar, Assistant Professor, & Prof. Dr. J. Jayaprakash, SCE, VIT organised a visit to JMC (New Ladies Hostel), VIT, Vellore on 2 November 2019. During the visit, the students were able to explore more on the widely used construction materials, fittings, required materials testing and advancement in new construction materials.

## Guest Lectures Organised

Delivered lecture on “Design of Steel Structures”, by Mr. V. Kovenathan, L & T Construction, Chennai on 9 October 2019 (Organized by Mr. M. Hareesh).

Delivered lecture on “Design of RCC Structures”, by Mr. P. Yuvaraj, L & T Construction, Chennai on 9 October 2019 (Organized by Dr. S. Thirumalini & Dr. A Abdul Rahim).

Delivered lecture on “Application of Building Information Modelling in Construction Industry”, by Mr. N. Pradeep, BIM Manager, De Novo Software Solutions, Chennai, on 16 October 2019 (Organized by Dr. T. Shanmuga Priya).

Delivered lecture on “Introduction to Lean Construction” by Mr. Laxmana Kumara Lingan, Specification Consultant, Hilti India, Chennai, on 16 October 2019 (Organized by Dr. R. Prasanna Venkatesan).

Delivered lecture on “Application of Estimation and Costing in TNPWD”, by Mr. K. Paneer Selvam, Assistant Engineer, PWD, Arni, on 17 October 2019 (Organized by Dr. A. Sofi).

Delivered lecture on “Durability Assessment of Special Concrete”, by Mr. A. P. Murugan, Technical Ultratech Cement, Chennai on 23 October 2019 (Organized by Dr. T. Shanmuga Priya).

Delivered lecture on “Role of Chemical Admixture in Concrete”, by Mr. P. Sathiya Kumaran, Fosroc Chemicals (India) Pvt. Ltd., Chennai on 23 October 2019 (Organized by Dr. S. Bala Murugan).

Delivered keynote Lecture on “An Insight into Metro Rail Construction” by Mr. Pandian, Deputy Chief Engineer, Bangalore Metro Rail Corporation Limited (BMRCL) in ICSET 2019, 31 October 2019. (Organized by Dr. R. Prasanna Venkatesan & Dr. T. Meena).

# Faculty Outreach

Prof. Dr. G. Mohan Ganesh, SCE, VIT participated in the 2<sup>nd</sup> World Summit on Advances in Sciences, Engineering and Technology, Indiana Summit 2019 which was held on 3–5 October 2019, Indiana University - Purdue University (IUPUI), Indianapolis.



Dr. S. Vasantha Kumar, Associate Professor, SCE attended a meeting with District Collector, Vellore on 12 October 2019 regarding ease of traffic congestion and prevent road accidents at Green circle, Vellore.



Prof. Dr. J. Jayaprakash, SCE, VIT was invited as a speaker to deliver lecture on “Advanced Concrete Technology” in **STRUCTURA’ 19** on 18 October 2019. This event was organized by ASCE – Student Chapter, VIT, Vellore. He addressed the effect of fresh and hardened concrete and its durability and Sustainable Concrete.

Dr. Sasanka Bhushan, Associate Professor, SCE, VIT was invited to deliver lecture on “Overview of Indian transportation system and various aspects of roadway and intersection design” in One-Day Workshop on Transportation during ASCE Student Chapter’s Event **STRUCTURA’ 19**. He also familiarized the participants on technology initiatives in transportation, road safety and decision making in transportation infrastructure



Dr. S. Bala Murugan, Assistant Professor, SCE, VIT was invited to deliver lecture on “Green Materials and its Applications in Construction preparation plans as per NBC and glimpse of Vasthu in Planning a Building” in **STRUCTURA’ 19** on 18 October 2019. This event was organized by ASCE – Student Chapter, VIT, Vellore.

Dr. Sasanka Bhushan, Associate Professor, SCE, VIT participated in “New Bus Stand Development Project Stake-holder’s Meeting” at Vellore Collectorate. The Vellore District Collector convened a meeting among various stakeholders involved in the New Bus Stand Development project on 9 November 2019. He shared his suggestions on the facilities planned in the proposed bus stand. He also highlighted that there is a “need to improve pedestrian facilities in Vellore to improve safety of the public”.



<https://www.thehindu.com/news/national/tamil-nadu/work-on-new-bus-terminus-in-vellore-to-begin-in-january/article29934064.ece>

Dr. Sasanka Bhushan, Associate Professor, SCE, VIT was one of the twelve member delegations from SCE, VIT, Vellore participated in “NVIDIA’s briefing on applications of Artificial Intelligence” in Bangalore in October 2019. NVIDIA develops high-scale computing facilities which are useful in implementing artificial intelligence based solutions to engineering problems. The team discussed avenues for incorporating artificial intelligence in various engineering disciplines.

Dr. B. Srimuruganandam, Associate Professor, SCE, VIT invited to deliver a special talk on “Hospital admissions and premature mortality attributed to fine particulate matter exposure in Indian cities”, in the 15<sup>th</sup> International Symposium on “Metal Ions & Organic Pollutants in Biology, Medicine and Environment (METALIONS 2019)” organised by CSIR-NEERI, Nagpur, Tamil Nadu, India 31 October, 2019.



Apart from that, he was honoured to chair two sessions in the 15<sup>th</sup> International Symposium on “Metal Ions & Organic Pollutants in Biology, Medicine and Environment (METALIONS 2019)”



Prof. Dr. G. Mohan Ganesh, SCE, VIT was invited to attend the LeAP Training programme at Centre for Academic Leadership and Education Management (CALEM), Aligarh Muslim University, Aligarh, sponsored by MHRD, Govt. of India on 16 December 2019.

## Publications

- Menon, U., Suresh, N., George G., Ealias A.M., Saravanakumar M.P (2020). A study on combined effect of Fenton and Free Nitrous Acid treatment on sludge dewaterability with ultrasonic assistance: Preliminary investigation on improved calorific value, *Chemical Engineering Journal*, 382, 123035 (<https://doi.org/10.1016/j.cej.2019.123035>).
- Vigneshwaran, S., Vasantha Kumar, S (2019). Comparison of classification methods for urban green space extraction using very high resolution worldview-3 imagery, *Geocarto International* (<https://doi.org/10.1080/10106049.2019.1665714>).
- Kolathayar, S., Aravind C.A., T. G. Sitharam (2019). Model Tests and Analytical Studies on Performance of Areca Leaf Cells as Cellular Confinement in Soil, *Geomechanics and Geoengineering* (<https://doi.org/10.1080/17486025.2019.1664774>).
- Anita Jessie J., Santhi A. S (2019). Flexural behaviour of steel fibre reinforced concrete at elevated temperatures using abaqus, *Romanian Journal of Materials*, 49(3), 409-415.
- Visuvasam, J., Chandrasekaran, S. S. (2019). Effect of soil-pile-structure interaction on seismic behaviour of RC building frames, *Innovative Infrastructure Solutions*, 4(45), 1-19.
- Varun Teja K., Meena, T (2019). Experimental exploration of perlite concrete under elevated temperatures, *Indian Concrete Journal*, 93(12), 27-33.
- Danish, P., Ganesh, G.M (2019). Effect of waste marble powder as filler material on fresh and hardened properties of self-compacting concrete, *Journal of Advanced Research in Dynamical and Control Systems*, 11 (2), 2254-2260.
- Anjali, R., Shanthakumar, S. (2019). Insights on the Current Status of Occurrence and Removal of Antibiotics in Wastewater by Advanced Oxidation Processes, *Journal of Environmental Management*, 246, 51 - 62.
- Ankur Laxman Yadav, Sairam, V., Muruganandam, L., Srinivasan, K (2020). An overview of the influences of mechanical and chemical processing on sugarcane bagasse ash characterisation as a supplementary cementitious materials, *Journal of Cleaner Production*, 245, 118854 (<https://doi.org/10.1016/j.jclepro.2019.118854>).
- Vali, K.S., Bala Murugan, S (2019). Impact of nano SiO<sub>2</sub> on the properties of cold-bonded artificial aggregates with various binders, *International Journal of Technology*, 10(5) 897 – 907.
- Priyanka, M., Saravanakumar, M.P (2019). Preliminary examination on isolation of microplastics (MPs) in sewage sludge from the local wastewater treatment plant, *International Journal of Engineering and Advanced Technology*, 9(1), 7514 – 7516.
- Vali K.S., Bala Murugan, S (2019). Utilization of cementitious materials with cold-bonded artificial aggregate in concrete, *International Journal of Engineering and Advanced Technology*, 9(1), 385 – 388.
- Mathew A.T., Saravanakumar M.P (2019). Removal of malachite green using green synthesized  $\alpha$ -MnO<sub>2</sub> nanoparticles: Kinetics, intraparticle diffusion and isotherm, *International Journal of Innovative Technology and Exploring Engineering*, 9(1), 5255 – 5258.

- Vinayagamorthy, M., Mohan Ganesh, G., Santhi, A.S (2019). Structural robustness of a single span extra dosed bridge over cable stayed bridge, *Journal of Applied Science and Engineering*, 22 (3), 413 – 420.
- Budamala V., Mahindrakar, A.B (2020). Approximation of Metro Water District Basin Using Parallel Computing of Emulator Based Spatial Optimization (PCESO), *Water Resources Management*, 34, 121–137.
- Ealias A.M., Saravanakumar M.P (2020). Application of protein-functionalised aluminium nanosheets synthesised from sewage sludge for dye removal in a fixed-bed column: Investigation on design parameters and kinetic models, *Environmental Science and Pollution Research*, 27, 2955–2976.
- Prasanna Venkatesan, R., Laxmana Kumara Lingan, KSD (2019). Application of lean in construction using value stream mapping engineering, *Construction and Architectural Management* (<https://doi.org/10.1108/ECAM-12-2018-0572>).
- Srinivasreddy, K., Balamurugan, S (2019). Effect of alccofine 1203 on setting times and strength of ternary blended geopolymer mixes with msand cured at ambient temperature, *Romanian Journal of Materials*, 49, 527 – 534.
- Govind Singh, Ankit Kumar, Samyak Jain, Shanmuga Priya, T (2019). Importance of labour efficiency in dry dock construction, *International Journal of Recent Technology and Engineering*, 8(4), 5737-5741.
- Rajumon, R., Anand, J. C., Ealias, A.M., Desai, D.S., George, G., Saravanakumar, M.P (2019). Adsorption of textile dyes with ultrasonic assistance using green reduced graphene oxide: An in-depth investigation on sonochemical factors, *Journal of Environmental Chemical Engineering*, 7(6), 103479 (<https://doi.org/10.1016/j.jece.2019.103479>).
- Basheerudeen, A., Sekar S. K (2019). Effect of curing conditions on the compressive strength of self compacting concrete incorporating slag and steel fibres, *International Journal of Recent Technology and Engineering*, 8(3), 4754 – 4760.
- Shubham Kumar, Ritesh Bharti, Prakeern Gupta, Sofi, A (2019). Study on Mechanical and Durability Properties of Recycled Coarse Aggregate in Concrete, *Lecture Notes in Civil Engineering*, 46, 303-313.
- Vaibhav Kumar, Akash Kumar, Sofi, A (2019). Study on Geo-polymer Concrete Under Acidic and Saline Conditions., *Lecture Notes in Civil Engineering*, 46, 291-302.
- B. Srimuruganandam, N. Manoj Kumar (2019). Hospital admissions and premature mortality attributed to fine particulate matter exposure in Indian cities, *Proceedings of the 15<sup>th</sup> International Symposium on Metal Ions & Organic Pollutants in Biology, Medicine and Environment (METALIONS 2019)*, CSIR-NEERI, Nagpur, India, 30 - 31 October, 2019.
- Shashank Somwanshi, Sanket Mankar, Sanita Goel, B. Srimuruganandam, R. Gupta (2019). Potential Dose Attributed to the particulate matter exposure from indoor air pollution sources, *Proceedings of the 15<sup>th</sup> International Symposium on Metal Ions & Organic Pollutants in Biology, Medicine and Environment (METALIONS 2019)*, CSIR-NEERI, Nagpur, India, 30 - 31 October, 2019.
- Shashank Somwanshi, Sanket Mankar, Sanita Goel, B. Srimuruganandam, R. Gupta (2019). Potential Dose Attributed to the particulate matter exposure from indoor air pollution sources, *Proceedings of the 15<sup>th</sup> International Symposium on Metal Ions & Organic Pollutants in Biology, Medicine and Environment (METALIONS 2019)*, CSIR-NEERI, Nagpur, India, 30 - 31 October, 2019.
- M. Monish Raj, N. Manoj Kumar, B. Srimuruganandam (2019). Exposure of fine particulate matter concentration and its inhalation dosage in different urban environments, *Proceedings of the 4<sup>th</sup> Indian International Conference on Air Quality Management*, IIT Bombay, Mumbai, India, 18 - 20 December, 2019.
- Poonam Bhatt, Ashwini Kumar, M.A. Ashwini, A. Peketi, B. Srimuruganandam, P.P. Panda (2019) Fractional solubility of trace metal in atmospheric aerosol over Arabian Sea during southwest monsoon, *Proceedings of the International Conference of Frontiers in Marine Science Challenges and Prospects (MARICON 2019)*, Cochin University of Science and Technology, Cochin, Kerala, India, 16 - 20 December, 2019.
- M. Manish Kumar, Mahua Saha, Chayanika Rathore, Priyansha Gupta, Akshata Naik, Aniket Desai, B. Srimuruganandam. (2019). Abundance and quantification of microplastics in water and sediments of Sal River and an approach to study the degradation of microplastics, *Proceedings of the Sixth Biennial Conference of Ocean Society of India (OSICON-19)*, Centre for Marine Living Resources & Ecology, Kochi, Kerala, India, 12 - 14 December, 2019.

## Other Related Information

Dr. Sasanka Bhushan, Associate Professor, SCE, VIT showcased various traffic engineering projects that were performed by students under J-component in Informal Symposium of Student Projects on Traffic Engineering, L&T Infrastructure Pvt Ltd. which held on 6 November 2019. Students analysed the operational performance of either a road corridor or an intersection in Vellore and recommended measures to improve efficiency and safety in these sites. L&T experts interacted friendly with the students and provided their guidance in improving these projects as well as students' presentation skills.

## Photo Gallery



### Editorial Team

**Dr. P. Porchelvan**, Senior Professor, SCE, VIT, Vellore

**Dr. J. Jayaprakash**, Professor, SCE, VIT, Vellore

**Dr. M. Uma Shankar**, Head (EWRE), Associate Professor, SCE, VIT, Vellore

**Dr. A. Sofi**, Head (SGE) & Associate Professor, SCE, VIT, Vellore

**Dr. S. Vasantha Kumar**, Associate Professor, SCE, VIT, Vellore

**Dr. S. Thirumalini**, Associate Professor, SCE, VIT, Vellore

### Contact

e-mail: [dean.sce@vit.ac.in](mailto:dean.sce@vit.ac.in)

Ph.: +91-416-2202222