



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.

Issue No. 03 January – March 2020



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

Dean's Message

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



Tamil Nadu, India. Congratulations to all participants of **EKLAVYA Team** for their achievement in ASCE Indian Region Conference held at Bannari Amman Institute of Technology, Erode, India during 3 - 6 March 2020. The B.Tech Civil Engineering students were participated in ASCE and In-house events include *Concrete Canoe Competition*, *Sustainable Solutions & Blue Sky Competition* and *Aura-Zap, Trionta Wall, Kegrete & Treasure Hunt* respectively. Our students are the overall Champions of the Conference by winning both the ASCE and In-house events. I am very delighted to inform you that VIT will host the ASCE Indian Student Region Conference in the upcoming year 2021. 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 competitions. Moreover, this e-newsletter also focusses on workshops and guest lectures organized by faculty members, publications in high quality International and National Journals, MOU signed and field visits. 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.

VIT- A place to learn; A chance to grow

Students' Achievements



Eklavya Team

The B.Tech undergraduate students of SCE, VIT, Vellore were participated in American Society of Civil Engineers (ASCE) student chapter events (Concrete Canoe Competition, Sustainable Solutions and Blue Sky Competition) and In-House events (Aura-Zap, Trionta Wall, Kegrete and Treasure Hunt) held at Bannari Amman Institute of Technology, Erode, India during 3 - 6 March 2020.



The students, from 'EKLAVYA TEAM', participated in the various events were Piyush Suresh (17BCL0008), Shaik Suhaas Ali (17BCL0019), Divya Pratap Singh (17BCL0029), B. Surya Chandan (17BCL0041), Sachin Verma (17BCL0042), Paluru Sathyanarayana (17BCL0058), Arun C. Abraham (17BCL0114), Konatham Manichandan Reddy (17BCL0136), Mohammed Ajlan (17BCL0160), Juhi Agarwal (17BCL0165), Pothuri Narasimha (17BCL0173), Sharanya (17BCL0240), Jessy Mary Navin (17BCL0245), Suraj Raju Mohite (17BCL0249), Sourav Gupta (17BCL0252), Salini Purkayastha (17BCL0255), P. Daman (17BCL0264), S.R. Balaji (17BCL0268), Apoorv (18BCL0007), Shashwat Kant (18BCL0035), Aman Singh Rawat (18BCL0068), Deeksha Agarwal (18BCL0069), Pushkar Padm (18BCL0070), Anubhav Bhardwaj (18BCL0179), Kumar Siddhant (18BCL0230). They won the Champion in the "Concrete Canoe Competition (Indian Zone)" and qualified to participate in University of Wisconsin, Madison in this year. They won First and Second prizes in Sustainable Event and Blue Sky Competition, respectively. In addition to that, they bagged First and Second Prizes in Aura-Zap & Trionta Wall and Kegrete & Treasure Hunt In-house events, respectively. They were the overall champions of the Conference by winning both the ASCE and In-house events. VIT will host the ASCE Indian Student Region Conference in the upcoming year 2021.

Semester Abroad Programme



The B.Tech Civil Engineering Student, V. Yashwanth Rao (16BCL0105), is undergoing 'Semester Abroad Programme (SAP)' under the supervision of Prof. Dr. Stephen P. Mattingly, Department of Civil Engineering, University of Texas at Arlington, Texas, USA.

MOU Signed

We, School of Civil Engineering (SCE), Vellore Institute of Technology, have signed Memorandum of Understanding (MoU) with Center for Study of Science, Technology and Policy (CSTEP), Bengaluru, India. This MOU was initiated by Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore. To create a positive impact on our nation's welfare, this MoU will certainly bring many collaborative programmes and prototype demonstration units in the overall area of Environmental Engineering especially in air pollution, transportation, technology, health, and any other areas of science and policy.



Consultancy Projects

Dr. S. Vasantha Kumar, Associate Professor, SCE, VIT, Vellore carried out the following consultancy projects worth of INR 30,000.

- 'Total Station Survey at Waste Dump yard near Government Hospital, Vellore' for Pennathur Town Panchayat.
- 'Total Station Survey to estimate the Earthwork volume for a Tank in Vilapakkam' for Vilapakkam Town Panchayat in Ranipet District.
- 'Total Station Survey at Waste Dump yard' for Pallikonda Town Panchayat in Vellore District.



Dr. S. Vasantha Kumar, Associate Professor, SCE, VIT, Vellore carried out the following consultancy projects as a community service without any charges.

- 'Study of Traffic Flow and Suggestion for Remedial Measures to Reduce Traffic Congestion at Green Circle, Vellore' for The District Collector, Vellore.
- 'Identification of Accident Hotspots in Vellore District' for Superintendent of Police, Vellore.

Dr. Thirumalini Selvaraj, Associate Professor, SCE, VIT, Vellore received a consultancy project entitled 'Characterisation of Lime Mortar at Udaipur Palace, Rajasthan by Maharana of Mewar Charitable Foundation' for worth of INR 30,800.

Faculty Achievements



Dr. Thirumalini Selvaraj, Associate Professor, SCE, VIT, Vellore received 'DUO-India Fellowship Award' to conduct collaborative teaching and research with Dr, Simona Raneri, Department of Earth Science, Univeristy of Pisa, Italy for a period of one month.

Workshops Organized

Dr. S. Bala Murugan, Assistant Professor, SCE, VIT Vellore organized One Day Workshop on 'Concrete Mix Proportion for Practicing Engineers' in association with Ultra Tech Cements Limited & ICI – VIT Student Chapter, VIT Vellore, on 20 February 2020. The speaker was Dr. S. Bala Murugan, Assistant Professor, SCE, VIT. More than 35 members from Vellore District were participated in the training programme.



Workshops Organized



Dr. S. Vasantha Kumar, Associate Professor, SCE, VIT, Vellore organised and delivered lecture in One Day Workshop on 'LIDAR Technology for Civil Engineering Applications' on 6 March 2020 at VIT, Vellore. Several participants from various Institutions and Government Departments like Water Resources Unit from Maharashtra were participated in the workshop.

Dr. P. Sasanka Bhushan, Associate Professor, SCE, VIT, Vellore organized Two-Days Hands-on 'Learning Workshop on Technical Report Writing' during 10 – 11 February 2020 at VIT, Vellore. The speakers were Dr. P. Sasanka Bhushan, Associate Professor, VIT, and Dr. V. Saravanan, Assistant Professor, VIT, Vellore. Students from various undergraduate, postgraduate and research programmes at VIT, Vellore were participated in the training programme.

Industrial and Field Visits

A surveying field visit to 'Brahmapuram Village Hill Temple' was organized for a group of 127 B.Tech undergraduate students of SCE by Prof. Dr. P. Porchelvan, SCE, VIT, Vellore on 13 March 2020.



Dr. V. Sairam, Assistant, Professor and Dr S. Parimala Renganayaki, Assistant Professor, SCE, VIT, Vellore and Mrs. N. Vaani, Assistant Professor, Centre for Disaster Mitigation & Management (CDMM), VIT, Vellore accompanied to facilitate the students.

A visit to 'Pre-stressed Concrete Sleepers Casting Yard at Tiruvalam', Southern Railways, Tiruvalam was organized for undergraduate and postgraduate (Structural Engg.) students of SCE by Dr. A. Abdul Rahim, Associate Professor, Mrs. Om Suganya, Assistant Professor, and Mr. T. Visuvasam, Assistant Professor, SCE, VIT, Vellore on 11 and 12 March 2020.

International Guest Lectures



Delivered lecture on 'Environmental Impacts due to Industrial Activities and Circular Economy', by Prof. Fulvia Chiampo, Department of Applied Science and Technology, Politecnico di Torino, Italy, on 17 February 2020 (Organized by Prof. Dr. S. Shantha Kumar).

Delivered a Foreign Expert lecture by video conferencing on 'Environmental flows and its Progression in Water Resources Management', by Dr. Aditya Sood, Senior Project Engineer, CITRIS, University of California, USA, on 26 February 2020 (Organised by Dr. Pavan Kumar and Dr. L. Vignesh Rajkumar).

National Guest Lectures

Delivered lecture on 'Stability Analysis of Pre-stressed Concrete I-Girder', by Er. Subramanian K, Manager Design and Business Development, Resolute Engineers & Consultants, Chennai, on 8 January 2020 (Organized by Dr. A. Punitha Kumar).

Delivered lecture on 'Application of Fluid Mechanics Concepts', by Dr. Venu Chandra, Assistant Professor, Department of Civil Engineering, IIT Madras, Chennai, on 9 January 2020 (Organized by Dr. P. Jagadeesh).

Delivered lecture on 'Load Tests on Piles', by Dr. Bala Kumar, Senior Consultant, Simplex Infrastructure, Chennai, on 29 January 2020 (Organized by Dr. M. Muthu Kumar).

Delivered lecture on 'Ground Improvement Techniques – Case Studies', by Dr. K. Premalatha, Professor, Department of Civil Engineering, Anna University, Chennai, on 5 February 2020 (Organized by Dr. M. Muthu Kumar).

Delivered lecture on 'Transforming Research to Innovation and Patents', by Dr. R. Saravanane, Professor and Head, Department of Civil Engineering, Pondicherry Engineering College, Puducherry, on 5 February 2020 (Organized by Dr. B. Srimuruganandam).

Delivered lecture on 'Community Preparedness for Tsunami Disaster – An experience in the coastal region, Tamil Nadu', by Ms. J. P. Saulina Arnold, Independent Consultant, (UNICEF, SRC), Chennai, on 19 February 2020 (Organized by Dr. B. Divya Priya).

Delivered lecture on 'Geology in Contemporary Architecture: An Insight', by Ar. Deepa Balasubramaniam, Principal Architect, D DEZIGN Architecture and Interiors, Bangalore, on 26 February 2020 (Organized by Dr. S. Parimala Renganayaki).

Delivered lecture on 'Digital Twin in Infrastructure Industry', by Mr. Swaraj Datta Gupta, Senior Academy Client Manager, Bentley Systems, Pune, on 28 February 2020 (Organized by Mr. John Sushil Packiaraj & Mr. J. Simon).

Delivered lecture on 'Crossing of OWC/ODC on Road Bridges', by Mr. M. Thangamani, Vice President, Almondz Globe Infra-Consultant Ltd., Chennai, on 11 March 2020 (Organized by Dr. N. Senthil Kumar & Dr. K. Srinivasan).

Publications

Umamaheswari, J., Shanthakumar, S (2020). Optimization of temperature and Inoculum Size for Phycoremediation of paddy-soaked rice mill wastewater. *Journal of Environmental Engineering (ASCE)*, 146(1), 04019091 (<https://ascelibrary.org/doi/10.1061/%28ASCE%29EE.1943-7870.0001612>).

Athiyamaan, V., Mohan Ganesh, G (2020). Experimental, statistical and simulation analysis on impact of micro steel – Fibres in reinforced SCC containing admixtures. *Construction and Building Materials*, 246, 118450 (<https://doi.org/10.1016/j.conbuildmat.2020.118450>).

Vali, K. S., Bala Murugan, S (2020). Effect of different binders on cold bonded artificial lightweight aggregate properties. *Advances in Concrete Construction*, 9(2), 183-193.

Saranya, D., Shanthakumar, S (2020). An integrated approach for tannery effluent treatment with ozonation and phycoremediation: A feasibility study. *Environmental Research*, 183, 109163 (<https://doi.org/10.1016/j.envres.2020.109163>).

Devarangadi, M., Umashankar, M (2020). Correlation studies on geotechnical properties of various industrial. *Journal of Cleaner Production*, 261, 121207 (<https://doi.org/10.1016/j.jclepro.2020.121207>).

Jithin Jose, B. Srimuruganandam (2020). Investigation of road dust characteristics and its associated health risks from an urban environment. *Environmental Geochemistry and Health* (<https://doi.org/10.1007/s10653-020-00521-6>).

Muthukumar, M., Shukla, S.K. (2020). Comparative study on the behaviour of granular pile anchors and helical pile anchors in expansive soils subjected to swelling. *International Journal of Geotechnical Engineering*, 14(1), 49-54.

Kuun Reddy, S.R., Bala Murugan, S (2020). Experimental and microstructural assessment of ternary blended geopolymer concrete with different Na₂SiO₃-to-NaOH volume ratios. *Innov. Infrastruct. Solut.* 5 (33) (<https://doi.org/10.1007/s41062-020-0279-z>).

Simon Jayasingh, Thirumalini Selvaraj (2020). Influence of organic additives on carbonation of air lime mortars – Changes in mechanical & mineralogical Characteristics. *European journal of Environmental and Civil Engineering* (<http://doi.org/10.1080/19648189.2020.1731716>).

Vali, K. S., Bala Murugan, S (2020). Properties of glass fiber reinforced cold-bonded artificial lightweight aggregates with different binders. *Romanian Journal of Materials*, 1, 40-50.

Publications

Vali, K. S., Bala Murugan, S (2020). Influence of Industrial by-products in artificial lightweight aggregate concrete: An Environmental Benefit Approach". Ecology Environment & Conservation, 6, S236-S244.

Jovish John, G. Bindu, B. Srimuruganandam, Abhinav Wadhwa and Poornima Rajan (2020). Land use/land cover and land surface temperature analysis in Wayanad District, India, using satellite imagery. *Annals of GIS* (<https://doi.org/10.1080/19475683.2020.1733662>).

Balagopal. V, Viswanathan, T.S (2020). A Comprehensive Exploration on Sustainable Supplementary Cementitious Materials Derived from Agro-Wastes, International Journal of Engineering and Advanced Technology (IJEAT), 9(3), 2482–2489.

Teja K.V., Meena, T (2020). An insight into temperature characteristics of ternary blended concrete with perlite powder. Asian Journal of Civil Engineering, 21, 41–48.

Balagopal, V., Viswanathan Sambamurthy (2020). Performance Evaluation of coir pith ash blended cement concrete exposed to elevated temperature. *Jurnal Teknologi (Sciences & Engineering)*, 82(2), 93-100.

Palakuru M., Adamala S., Bachina H.B. (2020). Modeling yield and backscatter using satellite derived biophysical variables of rice crop based on artificial neural networks. *Journal of Agrometeorology*, 22 (1), 41-47.

Rishudh, T., Barik, D. K. (2020). Development of unit hydrograph for an ungauged watershed by using Geospatial Tools. International Conference on Sustainable Water Resources Management under Changed Climate, Jadavpur University, Kolkata, West Bengal (India) in Collaboration with Department of Geography, Women's College Calcutta and NIT Durgapur, India, 13 - 15 March 2020.

Ganesh Naidu, G., Sofi, A (2020). Corrosion characteristics of rebar induced in different types of fibre reinforced concrete, The 3rd International Conference on Clean and Sustainable Development (ITCSD2020), 19 –21 February, 2020, Chandigarh, India.

New Research Equipment



Transportation Engineering Laboratory has procured AIMIL VISCO 2000 (Rotational Viscometer) to measure the viscosity of Bitumen and other oils at a given temperature.

Faculty Outreach

Dr. A. Sofi, Head and Associate Professor, SCE, VIT, Vellore has attended 'Say Yes' : The Indian Women Network (IWN) Leadership Conclave on 27 - 28 Jan 2020, Kochi, India.



Prof. Dr. S. S. Chandrasekaran, SCE, VIT, Vellore has attended the 'LARAM (Landslide Risk Assessment and Mitigation) Course 2020' at IIT Roorkee (Organised by IIT Roorkee in Collaboration with University of Salerno, Italy and Norwegian University of Science and Technology) during 17 - 22 February 2020.

Faculty Outreach



Dr. P. Sasanka Bhushan, Associate Professor, SCE, VIT, Vellore presented an invited lecture to Masters Students in University of Applied Sciences, FH Munster through Video Conferencing. He presented on "In-land Freight Transport in a Developing Country. This lecture was hosted by Dr. Michael Dircksen.

Dr. L. Vignesh Rajkumar, Assistant Professor, SCE, VIT, Vellore was invited to deliver lecture on 'Hydrological modelling and vulnerability assessment of a semi-arid Vaigai River Basin: A Climate Change Perspective' in Indo - Swedish Research Workshop on Impacts of El-Nino southern Oscillation on the Water-Food-Energy Nexus organised by Department of Water Resources Development and Management, IIT Roorkee and Uppsala University, Sweden on 9 – 11 January 2020.



Dr. L. Vignesh Rajkumar, Assistant Professor, SCE, VIT, Vellore was invited to deliver a lecture on 'RS & GIS Applications in Water Resources Management' in One Week Short Term Training Programme on Real time Monitoring of Environmental Parameters using Remote Sensing Techniques organised by Department of Civil Engineering, Annamalai University, Chidambaram, sponsored by AICTE, Govt. of. India during 17 – 22 February 2020.

Dr. M. Muthukumar, Associate Professor, SCE, VIT, Vellore presented a paper on 'Impact of lime on the behaviour of expansive soil stabilized with bagasse ash' in International Conference on Geoenvironment 2020 organised by IIT Delhi during 17 - 19 February 2020.



Dr. S. Mahenthiran, Assistant Professor, SCE, VIT, Vellore was invited to deliver expert lecture on 'Role of GIS in Environmental Management' in AICTE sponsored short term training programme. This event was organised by Department of Civil Engineering, Annamalai University, Chidambaram on 22 February 2020.

Mr. M. Hareesh, Assistant Professor, SCE, VIT, Vellore delivered lecture on topic 'Design of Cold-formed Steel Members' in One-Day Seminar on Cold-formed Steel in Construction Industry jointly organised by Coimbatore Institute of Technology, and The Institution of Engineers (India) on 4 March 2020 at Coimbatore Institute of Technology, Coimbatore, India.



Prof. Dr. J. Jayaprakash, SCE, VIT, Vellore was invited as a speaker to deliver lecture on 'Strengthening of Reinforced Concrete beams using FRP' in One Day Workshop on Structural Health Monitoring of Civil Engineering Structures which was held on 13 March 2020, VIT, Vellore. This workshop was organised by Dr. P. Rama Mohan Rao, Associate Professor, Centre for Disaster Mitigation & Management (CDMM), VIT, Vellore.

Other Related Information

The proposal on 'Organics in ancient lime mortars towards modelling of force carbonation process by 3D microstructure' submitted by Dr. Thirumalini Selvaraj, Associate Professor, SCE, VIT, Vellore and Simona Raneri, University of Pisa, Italy to ELETTRA Synchrotron Facilities, Trieste, Italy to make use of the facilities got approved. ELETTRA Synchrotron is a multidisciplinary international research centre specialized in generating high quality synchrotron and free-electron laser light and applying it in materials science.

Photo Gallery



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