

# 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 eighth issue of SCE e - Newsletter by 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 April - Sep 2021. This issue highlights the active participation and contribution in various outreach activities by faculty members and achievements of undergraduate & postgraduate students and PhD 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.

- Dr. A. S. Santhi

- Dr. S. Shantha kumar

## STUDENTS ACHEIVEMENT

A paper published by Somil Thakur (17PHD0085) from his PhD research work under the supervision of Dr. Bhaskar Das, Associate Professor, SCE, VIT, Vellore in Water & Environment Journal, entitled 'Bio-electrochemical evaluation of two-stage constructed wetland microbial fuel cells with high strength raw domestic wastewater and simultaneous energy recovery', has been highlighted in Current Science Report (Current Science, 120 (10), June 2021).

## MEMORANDUM OF UNDERSTANDING

A MoU is signed (April 2021) between TamilNadu Pollution Control Board (TNPCB) and Urban Local Body (ULB) of Madurai Corporation, Government of TamilNadu with VIT, Vellore as Institute of Repute (IoR) recognized by Minister of Environment Forest and Climate Change (MoEF - CC), Government of India under its flagship initiative of National Clean Air Program (NCAP). This was initiated by Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore.

## CONSULTANCY PROJECT

Prof. Dr. S. Shantha Kumar, Dean, SCE, VIT, Vellore received a consultancy project on 'Assessing the adequacy of sewage treatment plant for treating the wastewater generated from residential building complex' of worth INR 1,77,000.

## SCE - NDSU JOINT WEBINAR SERIES

The School of Civil Engineering (SCE), Vellore Institute of Technology, Vellore & Department of Civil and Environmental Engineering (CEE), North Dakota State University (NDSU), USA jointly organized a Webinar Series from 07 April to 19 May 2021 to exhibit the research potential and the various research activities carried out by faculty members from both SCE, VIT and CEE, NDSU, USA (Co-ordinator: Dr. M. Uma Shankar, Associate Professor, SCE, VIT, Vellore). The details of webinars from VIT and NDSU are given below:



Webinar 01: 'Strengthening of reinforced concrete columns using Fibre Reinforced Polymer (FRP) reinforcement' by Prof. Dr. Jayaprakash Jaganathan, SCE, VIT, Vellore on 07 April 2021.



Webinar 02: 'Multiscale modeling and computational design of polymeric and structural materials' by Dr. Wenjie Xia, Assistant Professor, Department of Civil and Environmental Engineering, North Dakota State University (NDSU), USA on 07 April 2021.



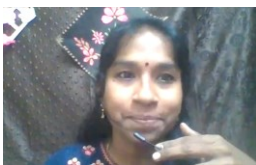
Webinar 03: 'Health benefits of achieving fine particulate matter standards in India' by Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore on 14 April 2021.



Webinar 04: 'Hydraulics in the era of exascale computing' by Dr. Trung B. Le, Assistant Professor, Department of Civil and Environmental Engineering, North Dakota State University (NDSU), USA on 14 April 2021.



Webinar 05: 'Groundwater and soil pollution and its remediation' by Dr. Bhaskar Das, Associate Professor, SCE, VIT, Vellore on 21 April 2021.



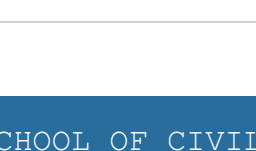
Webinar 06: 'Modeling of Depression-dominated hydrologic processes across scales: Theory and Applications' by Dr. Xuefeng (Michael) Chu, Professor, Department of Civil and Environmental Engineering, North Dakota State University (NDSU), USA on 21 April 2021.



Webinar 07: 'Managed Aquifer Recharge in India: Traditional development, current situation, and future perspective' by Dr. S. Parimala Renganayaki, Associate Professor, SCE, VIT, Vellore on 28 April 2021.



Webinar 08: 'Degradations in undrained shear strength in fine-grained soils due to cyclic loading' by Dr. Beena Ajmera, Assistant Professor, Department of Civil and Environmental Engineering, North Dakota State University (NDSU), USA on 28 April 2021.



Webinar 09: 'Leaning towards Lean Construction for Effective Project Controls' by Dr. R. Prasanna Venkatesan, Assistant Professor, SCE, VIT, Vellore on 05 May 2021.

Webinar 10: 'Old, new, and what we did in drive-by inspection for bridges' by Dr. Mijia Yang, Associate Professor, Department of Civil and Environmental Engineering, North Dakota State University (NDSU), USA on 05 May 2021.



Webinar 11: 'Phycoremediation for industrial wastewater treatment,' by Prof. Dr. S. Shantha Kumar, Dean, SCE, VIT, Vellore on 19 May 2021.

Webinar 12: 'Automated damage detection of civil structures,' by Dr. Zhibin Lin, Associate Professor, Department of Civil and Environmental Engineering, North Dakota State University (NDSU), USA on 19 May 2021.

## SPECIAL LECTURE ON WORLD ENVIRONMENTAL DAY

Dr. Suresh Munuswamy, Associate Professor, Indian Institute of Public Health - Hyderabad (IIPH-H) and Head, Informatics and Technology Innovations at Public Health Foundation of India (PHFI) delivered a special talk on 'Environmental Degradation and its Impact on Human Health' organized by Dr. M. Uma Shankar, Associate Professor, SCE, VIT, Vellore on 05 June 2021.



## NATIONAL AND INTERNATIONAL LECTURES

Dr. Manasa Ranjan Behra, Associate Professor, Department of Civil Engineering, IIT Bombay delivered a lecture on 'Fluid Mechanics : Fundamental and Advanced Applications' on 01 April 2021 organized by Prof. Dr. P. Jagadeesh, SCE, VIT, Vellore.

Mr. D. S. Ragavendra, Manager (R & D) / Associate, R & D Division at UHPC India Pvt. Ltd., Mumbai Delivered a lecture on 'Case Studies on Pre-Stressed Concrete Building Structures' on 10 April 2021 organized by Dr. S. Balamurugan, Assistant Professor & Mr. M. Hareesh, Assistant Professor, SCE, VIT, Vellore.

Mr. Ravi Shankar Subramaniam, Director - Technical, Integino Structural Solutions Pvt. Ltd., Chennai delivered a lecture on 'Applications of Special Concrete in Construction' on 21 April 2021 organized by Dr. Sasanka Bhushan Pulipati, Associate Professor, SCE, VIT, Vellore.

Ms. Swati Singh Sambyal, Waste Management Specialist, UN Habitat delivered a lecture on 'Affordable and Effective Solid Waste Management - Interventions from India and Global South' on 30 April 2021 organised by Dr. B. Srimuruganandam, Associate Professor & Mr. M. Hareesh, Assistant Professor, SCE, VIT, Vellore - under Alumni Lecture Series.

Dr. Pooja P. Preetha, Assistant Professor, Department of Civil Engineering, Alabama A & M University, Huntsville, Alabama, USA delivered a lecture on 'Different Possibilities of Environmental Impact Assessment: Towards Water Quality Modelling and Land Cover Management in Watersheds' by on 04 May 2021 organized Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore.

## NATIONAL AND INTERNATIONAL LECTURES

Dr. M. R. Madhav, Professor (Retd.) IIT Kanpur & Emeritus Professor, JNTUH College of Engineering, Hyderabad delivered a lecture on 'Engineering of Ground Case Studies' on 18 May 2021 organized by Dr. M. Muthukumar, Head and Associate Professor, SCE and Prof. Dr. S. S. Chandrasekaran, Director, Centre for Disaster Mitigation & Management (CDMM) & SCE, VIT, Vellore in Association with Indian Geotechnical Society (IGS) Chapter, Vellore.

Mr. L. Krishnan, Senior HSE Consultant, Lead Auditor in Occupational Health and Safety Management System, Chennai delivered a lecture on 'Industrial Safety - A Disaster Management Perspective' on 19 May 2021 organized by Dr. B. Divya Priya, Assistant Professor & Dr. R. Prasanna Venkatesan, Assistant Professor, SCE, VIT, Vellore.

Dr. Pradheeps Muthulingam, SEIA Expert Regional Integrated Multi - Hazard Early Warning Systems Bangkok, Thailand delivered a lecture on 'Methods and Tools for Socio - Economic Impact Assessment' on 21 May 2021 organized by Prof. Dr. K. Pavan Kumar, SCE, VIT, Vellore.

Dr. V. M. Chowdary, Scientist / Engineering SG and Deputy General Manager Regional Remote Sensing Centre - North, NRSC, Indian Space Research Organization, Antariksh Bhawan, New Delhi delivered a lecture on 'Geospatial Technologies Water Resources Management Planning' on 01 June 2021 organized by Dr. Dillip Kumar Barik, Associate Professor, SCE, VIT, Vellore.

Dr. J. Leon Raj, Scientist, Applied Civil Engineering Division, CSIR-NEIST, Jorhat delivered a lecture on 'Construction Practices for Sandwich Panels' on 31 July 2021 organized by Dr. S. S Ajeesh, Assistant Professor, SCE, VIT, Vellore.

Prof. Dr. A. R. Santhakumar, Former Dean of Anna University and Former Emeritus Professor of IIT Madras delivered a lecture on 'Behaviour and Design of Shear Walls' on 07 August 2021 organized by Dr. V. Sairam, Associate Professor, SCE, VIT, Vellore.

## FACULTY OUTREACH

Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore delivered a talk on 'Air Pollution Exposure and Effects on Biodiversity - A Human Health Perspective in India', organised by Corporate Environment Cell, Neyveli Lignite Corporation India Limited, Neyveli on International Day for Biological Diversity 2021 on 22 May 2021.

Dr. A. Sofi, Associate Professor, SCE, VIT, Vellore delivered a lecture on 'Structural Health Monitoring' to PACE Institute of Technology and Sciences, Ongole, Andhra Pradesh, on 29 June 2021.

Dr. B. Srimuruganandam, Associate Professor, SCE, VIT, Vellore delivered a keynote lecture entitled 'Importance and Methods of Clean Construction Practices, in a Virtual International Conference on Sustainable Construction organised by Department of Civil Engineering, St. Peter's Institute of Higher Education and Research, Avadi, Chennai on 15 June 2021.

Dr. S. Vasantha Kumar, Associate Professor, SCE, VIT, Vellore met Thiru. Selvakumar, Superintendent of Police, Vellore on 26 June 2021 and presented the proposal on Diversion of Vehicles such as two-wheelers, three-wheelers and cars via the old Katpadi road and underpass below the flyover without coming to Green circle Vellore to reduce the traffic congestion at Green circle.

## PUBLICATIONS

Mathews Roy A., Prasanna Venkatesan R., Shanmugapriya T (2021). Simulation and Analysis of a Factory Building's Energy Consumption Using eQuest Software, Chemical Engineering and Technology. (<https://doi.org/10.1002/ceat.202000489>). (Impact Factor - 3.742)

Singh S.G., Kumar S.V. (2021). Dealing with Multicollinearity Problem in Analysis of Side Friction Characteristics Under Urban Heterogeneous Traffic Conditions, Arabian Journal for Science and Engineering. (<https://doi.org/10.1007/s13369-020-05213-y>). (Impact Factor - 1.711)

Wadhwa A., Kummamuru P.K. (2021). A study on the effectiveness of percolation ponds as a stormwater harvesting alternative for a semi-urban catchment, Aqua Water Infrastructure, Ecosystems and Society Issue 70 (2), 184 - 201.

Reddy A.N., Meena T. (2021). Acid resistance of ternary blended nanosilica concrete incorporating fly ash and alccofine, Civil Engineering and Architecture 9(2): 500-506.

Mahenthiran S., Ganesan M., Vignesh Rajkumar L., Sridhar N. (2021). Quantification and classification of groundwater-lake water exchange using conventional method, Ecology, Environment and Conservation Spl. Issue S267-S273.

Chintalapudi K., Pannem R.M.R. (2021). Enhanced Strength, Microstructure, and Thermal properties of Portland Pozzolana Fly ash-based cement composites by reinforcing Graphene Oxide nanosheets, Journal of Building Engineering 42, 102521. (Impact Factor - 3.379)

Chotchaev K.O., Melkov D.A., Ganapathy G.P. (2021). Active dynamics of technogenic landslide on the left board of the Khanikomdon river (North Ossetia) \*АКТИВНАЯ ДИНАМИКА ТЕХНОГЕННОГО ОПОЛЗНЯ НА ЛЕВОМ БОРТУ РЕКИ ХАНИКОМДОН (СЕВЕРНАЯ ОСЕТИЯ), Sustainable Development of Mountain Territories 3(45), 556 - 582.

Manojkumar N., Srimuruganandam B. (2021). Investigation of on-road fine particulate matter exposure concentration and its inhalation dosage levels in an urban area, Building and Environment 198, 107914. (Impact Factor - 4.971)

Saranya D., Shanthakumar S. (2021). Insights into the influence of CO<sub>2</sub> supplement on phycoremediation and lipid accumulation potential of microalgae: An exploration for biodiesel production, Environmental Technology and Innovation 23, 101596. (Impact Factor - 3.356)

Jose J., Srimuruganandam B. (2021). Effect of silt loading on particle concentration in the atmosphere from resuspended road dust through particulate matter dispersion modelling, Air Quality, Atmosphere and Health. (<https://doi.org/10.1007/s11869-021-01034-6>) (Impact Factor - 2.87)

Raffa C.M., Chiampo F., Shanthakumar S. (2021). Remediation of metal/metalloid-polluted soils: A short review, Applied Sciences (Switzerland) 11, 4134. (Impact Factor - 2.474).

Thakur S., Das B.,(2021). Bio-electrochemical evaluation of two-stage constructed wetland microbial fuel cells with high strength raw domestic wastewater and simultaneous energy recovery, Water and Environment Journal. (Impact Factor - 1.426)

Chattapadhyay D.B., Putta J., Rama Mohan Rao P. (2021). Risk identification, assessments, and prediction for mega construction projects: A risk prediction paradigm based on cross analytical-machine learning model, Buildings 11, 172.

Malarvizhi K., Kumar S.V., Porchelvan P. (2021). Urban sprawl modelling and prediction using regression and Seasonal ARIMA: a case study for Vellore, India, Modeling Earth Systems and Environment.

Nabi J., Rahim A.A.(2021). On the possibility of using damaged plasticity models in the assessment of structural response of gravity beams, Structures 33, 1987 - 2002. (Impact Factor - 2.983)

Pillai J.S., Brijesh Nair A.N. (2021). Performance of vertical flow constructed wetlands planted with indigenous species for decentralized wastewater treatment and biomass production in Kerala, India. Nature Environment and Pollution Technology 20(2), 541 - 550.

## EDITORIAL TEAM

Dr. J. Jayaprakash (Professor)

Dr. Dilip kumar Barik (Associate Professor)

Dr. L.Vignesh Rajkumar (Assistant Professor Senior)

Prof. J.Malathv (Assistant Professor)