

NEWSLETTER

October, 2024



Indian Institute of
Technology Madras



Technologies for
Low-Carbon and Lean
Construction



The Surendra and Dorotheie Shah Chair for Research on Sustainable Construction was launched at the IIT Madras in 2021. The focus is on furthering cutting-edge research in the field of Civil Engineering materials. This is of huge significance due to the immense amount of construction work undertaken every year in India, with the volumes and expenditures continually increasing.

Prof. Surendra P. Shah, one of the foremost global experts in engineering materials, particularly concrete and other cement-based construction, chose IIT Madras to set up the Institute Chair. He has led the development of new advanced materials, which have become world standards in these fields, and his work revolutionized the way modern concretes are used worldwide.

Prof. Surendra Shah currently serves as the Presidential Distinguished Professor, University of Texas, and Walter P. Murphy Emeritus Professor of Civil and Environmental Engineering, Northwestern University. Mrs. Dorotheie Shah is the founding President of the Indo American Museum, now called the National Indo American Museum, in Chicago.

Prof. Manu Santhanam will be the second occupant of the "Surendra and Dorotheie Shah" Chair. He is currently the Dean of Industrial Consultancy and Sponsored Research at IIT Madras. He was also elected recently as a Fellow of the Indian National Academy of Engineering and RILEM Fellow since 2019. His research domains cover cement chemistry, and multi-scale characterization of concrete, including non-destructive testing, assessment of deterioration mechanisms in concrete and heritage structures, 3D printing of concrete structures, concrete durability and use of supplementary cementitious materials. He leads the Centre of Excellence on Technologies for Low-carbon and Lean Construction.

In this issue

Upcoming Events

- 3rd Young Researchers' Symposium & Award 2025
- 4th TLC2 Workshop on January 27-28, 2025
- One-day Workshop on Sustainable Construction Materials and Management Practices will be organized by (NIT Trichy) as a pre-conference workshop of the 14th Structural Engineering Convention SEC2024 (<https://sec2024.nitt.edu/>). The event will be co-sponsored by Center of Excellence on Technologies for Low Carbon and Lean Construction (TLC2)

Awards & recognition

- Prof. Manu Santhanam named as the Surendra and Dorotheie Shah Chair Professor at IIT Madras

Recent Journal Publications

TLC2 Outreach Program

Find us: <https://tlc2.iitm.ac.in/>

BSB 205, Department of Civil Engineering, IIT Madras, Chennai - 600036, India



Recent Journal Publications

Effect of the end conditions on the response of glass textile reinforced cementitious composites under uniaxial tension

Ramakrishna Samanthula, Ravindra Gettu, Sachin Paul, Raul Luis Zerbino
Materials and Structures
<https://doi.org/10.1617/s11527-024-02413-y>

Investigating the Interaction of Limestone Calcined Clay and OPC-Based Systems with a Methyl Hydroxyethyl Cellulose-Based Viscosity Modifier Used for 3D Printable Concrete

Shantanu Bhattacharjee, Smrati Jain, Manu Santhanam
Journal of Materials in Civil Engineering
<https://doi.org/10.1061/JMCEE7.MTENG-17728>

Alkaline activation via in-situ caustification of one-part binders of composite precursors of waste glass and limestone

Luis Edgar Menchaca-Ballinas, Piyush Chaunsali, J Ivan Escalante-García
Cement and Concrete Composites
<https://doi.org/10.1016/j.cemconcomp.2024.105754>

Enhancing carbonation resistance of calcium sulfoaluminate belite-based concrete: comparative analysis and admixing strategies

Paul Shaji, Vaishnav Kumar Shenbagam, Bipina Thaivalappil, Piyush Chaunsali
Journal of Sustainable Cement-Based Materials
<https://doi.org/10.1080/21650373.2024.2386677>

Chemical and electrochemical repair methods for the anchorage regions of grouted, post-tensioned concrete systems

Karthikeyan Manickam, Radhakrishna G Pillai
Structures, <https://doi.org/10.1016/j.istruc.2024.107595>

10-year natural carbonation data of concretes with limestone, fly ash, volcanic ash, and slag and exposed to tropical climate in India

Umesh Hule, Sundar Rathnarajan, Radhakrishna G Pillai, Ravindra Gettu, Manu Santhanam
Data in Brief, <https://doi.org/10.1016/j.dib.2024.111006>

Characterization of health and safety hazards of deconstruction activities

Kaushik Bhattacharjee, Shamita Chaudhary, Avni Vishnoi, D. A. Patel & Nikhil Bugalia
American Journal of Industrial Medicine
<http://dx.doi.org/10.1002/ajim.23652>

Role of Impact and Compression-Based Crushing on the Physical, Chemical, and Morphological Characteristics of Recycled Concrete Aggregates

Ram Pal, Surender Singh
Journal of Materials in Civil Engineering
<https://doi.org/10.1061/JMCEE7.MTENG-17400>

pyCSH: Automated atomic-level structure generation of bulk CSH and investigation of their intrinsic properties

Ziga Casar, Jon López-Zorrilla, Hegoi Manzano, Eduardo Duque-Redondo, Aslam Kunhi Mohamed, Karen Scrivener, Paul Bowen
Cement and Concrete Research
<https://doi.org/10.1016/j.cemconres.2024.107593>

Governance through trust: Community engagement in an Australian city rebuilding precinct

Johan Ninan, Stewart Clegg, Ashwin Mahalingam, Shankar Sankaran
Project Management Journal
<https://doi.org/10.1177/87569728231182045>

An analysis of safety practices for small, medium, and large construction projects: a resilience engineering perspective

Kaushik Bhattacharjee, Nikhil Bugalia, Ashwin Mahalingam
Safety science,
<https://doi.org/10.1016/j.ssci.2023.106330>

Uncertainty in the embodied energy assessment of buildings: a case of EWS type low-cost house in India

Ganga A Warriar, Sivakumar Palaniappan
International Journal of Construction Management
<https://doi.org/10.1080/15623599.2024.2385853>



Heartiest Congratulations to the 12 Army officers on completing the Construction Technology & Management course conducted by BTCM Group, Civil Engineering department, IIT Madras. Certificate distribution ceremony and final session held at CWE Jhansi, led by IIT Madras professors Benny Raphael, Nikhil Bugalia, and Murali Jagannathan.



The outreach Program of TLC2 Centre was conducted at Amrita School of Engineering, Coimbatore and at Government Engineering College, Thrissur, Kerala by Dr. Jayasree Chakkamalayath for undergraduate and graduate students in Civil Engineering.

Dr. Jayasree gave an overview of our approach towards Circular economy in construction, core research areas, current research projects and opportunities for studying at BTCM Division IIT Madras.



IIT Madras has launched 6-months certificate program on CONSTRUCTION TECHNOLOGY & MANAGEMENT - COHORT 3 which started from November 01, 2024. This program aimed at senior undergraduate students, graduate students, and professionals in structural design and construction. The program is designed to equip participants with the latest construction technology and management practices, ensuring projects are completed on time, within budget, and to the highest standards of quality.

Why to take this Course: This course, taught by renowned IIT Madras professors, provides practical knowledge and tools necessary for excelling in the field. Participants will gain insights from leading experts, learn cutting-edge techniques, and enhance their skills to meet the evolving demands of the construction industry.



For more details, check this: [Brochure](#)

Centre for Outreach and Digital Education (CODE) at IIT Madras hosted the Certificate Distribution Event for the first cohort of the Construction Technology & Management Course on April 27th, 2024



4th International Workshop on Technologies for Low-Carbon & Lean Construction (TLC2) A Centre of Excellence at IIT Madras



The TLC2 Workshop is an annual event aimed at disseminating the recent findings and identifying the new challenges in the areas of TLC2 through collaborations with renowned national and international experts

Tentative Speakers

Dr. Alexander Pisch
Dr. O. Burkan Isgor
Dr. Wolfram Schmidt

Dr. Hemanta Doloi
Dr. Mantha Bharadwaj
Dr. Aritra Pal

27th January 2025 3rd Young Researchers' Symposium (YRS) & Award

28th January 2025 One day workshop on TLC2

[IIT Madras Research Park, Chennai, India](#)



Registration link will be updated soon on TLC2 website.

tlc2.iitm.ac.in/

tlc2office@civil.iitm.ac.in

[linkedin.com/in/coe-on-tlc2/](https://www.linkedin.com/in/coe-on-tlc2/)

3rd Young Researchers' Symposium & Award

on Technologies for Low - Carbon
& Lean Construction

27th January 2025 (Monday) 9 am to 5 pm IST
 Research Park, IIT Madras, Chennai, India

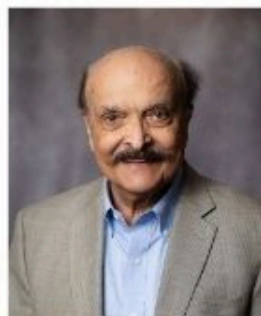


ABOUT THE SYMPOSIUM



Young Researchers' Symposium (YRS) is an international forum for senior PhD students and recent doctoral graduates to showcase their cutting-edge research outcomes in the areas of Technologies for Low-Carbon and Lean Construction (TLC2).

**Prestigious
Prof. Surendra P. Shah Award is given to
the best speaker of YRS**



PROF. SURENDRA P. SHAH

Presidential Distinguished Professor,
Center for Advanced Construction
Materials, University of Texas at
Arlington, USA
Distinguished Professor, IIT Madras

Send a 200 words abstract & a 5-minute video on your PhD thesis by 25th November 2024 to participate in YRS 2025

[Submission link](#)