

### Recent Journal Publications

#### Hydration, phase assemblage and microstructure of cementitious blends with low-grade limestone

Asha Bahulayan, Manu Santhanam

Construction and Building Materials, Volume 438, 9 August 2024

<https://doi.org/10.1016/j.conbuildmat.2024.137044>

- A systematic assessment of the effect of low-grade limestone with different types of impurities on the hydration of ordinary Portland cement is done.
- Similarities and differences in the behaviour of OPC blended with cement-grade and low-grade limestone are brought out.
- Non-cement grade limestone, or low grade limestone, can efficiently be utilised as SCM with up to 15% replacement of OPC

#### Robotic 3D printing of structural slabs using polyethylene waste as filler to reduce carbon footprint

Abhishek Patel & Benny Raphael

Construction Robotice Vol.8, article 7 (2024),

<https://doi.org/10.1007/s41693-024-00119-9>

- The concrete mix used for 3D printing has very high cement content, leading to a high carbon footprint of concrete 3D printed elements. The filler slab is a technique used to reduce raw material consumption by introducing materials like clay pots as filler.
- Replacing clay pots with compressed polyethylene waste can help reduce the carbon footprint of 3D-printed slabs.
- A cradle-to-gate life cycle assessment is performed to compare three different scenarios: conventional slab, filler slab with clay pots, and filler slab with polyethylene (PE) waste.

### In this issue

#### Recent Journal Publications

#### Events

- TLC2 team attended the 41st International Symposium on Automation and Robotics in Construction (ISARC 2024) in Lille, France
- Dr. Keerthana Kirupakaran faculty member in BTCM group, IIT Madras, attended the 14th International Symposium on Ferrocement and Thin Ultra-High Performance Concrete (UHPC) Composite in New Jersey, USA
- Dr. Aslam Kunhi Mohamed talked on "Understanding cementitious system at atomic Level" in ROC&TOK webinar organized by RILEM Association on June 6
- Upcoming event: CONSEC24 (Registration deadline August 15, 2024)

Register soon:



Dear fellow researchers:

In conversations with researchers around the world, there are always queries on what topics are hot and not, what will get them funding, why they were not successful in publishing, etc. I am conducting a survey of the aspirations, motivation and self-assessment of researchers in the area of construction materials.

I hope this could lead us to propose improvements for funding calls or make assessment better, if at all needed. I am doing this in my individual capacity and not on behalf of RILEM or other organization. However, some comments and feedback could lead to questions we could ask ourselves in discussions, especially during the next RILEM Association Week 2024 in Toulouse. The names of the respondents would be kept confidential.

Who should take the survey? Anyone who is engaged in research and development in the broad area of construction materials. How long would it take? 5-10 minutes

Link for the survey:

[Research outlook poll on construction materials](#)

Thank you in anticipation

With best regards,

Ravindra Gettu, VS Raju Chair Professor,

Centre of Excellence on Technologies for Low-carbon and Lean Construction,

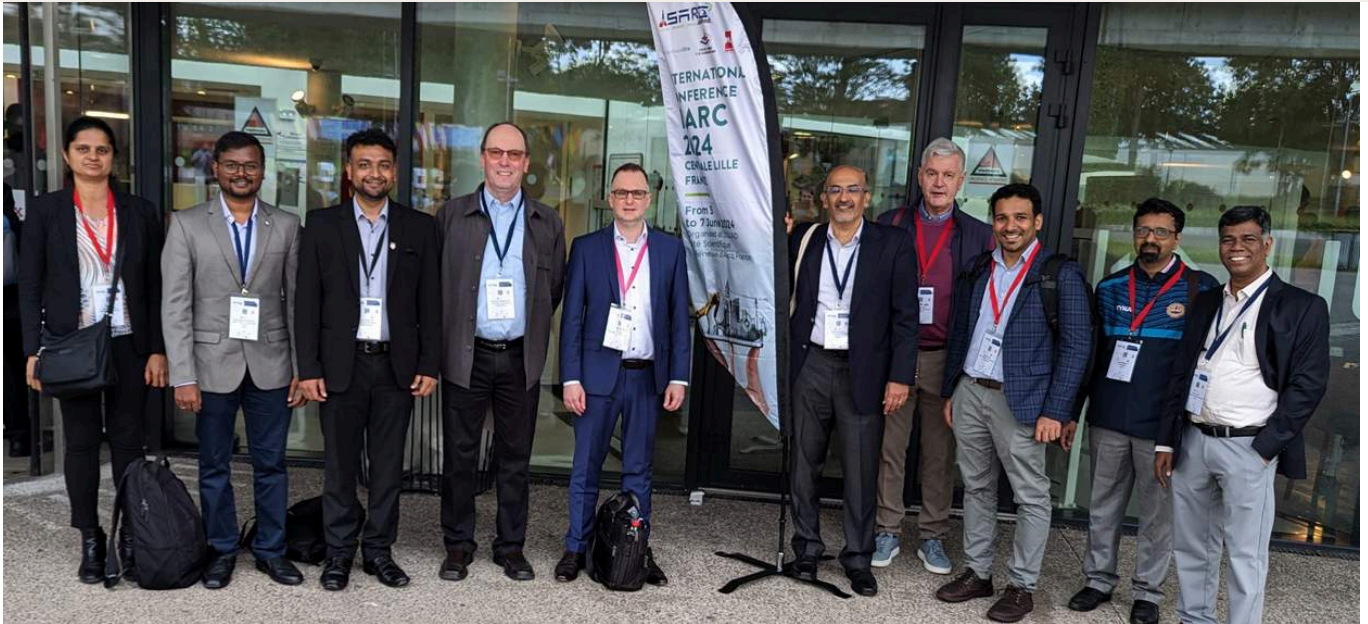
Dept. of Civil Engineering, IIT Madras, Chennai, India

# EVENTS

Prof. Koshy Varghese and Benny Raphael attended the 41st International Symposium on Automation and Robotics in Construction (ISARC 2024) in Lille, France with our research scholars Mr. Sivakumar and Mr. Shanmugaraj S.

Mr. Shanmugaraj presented his work on “Buildability Assessment of Concrete 3D Printed Elements through Computer Vision” (<https://doi.org/10.22260/ISARC2024/0129>)

Mr. Sivakumar presented his work on “SafeSense: Real-time Safety Alerts for Construction workers” (<https://doi.org/10.22260/ISARC2024/0056>)

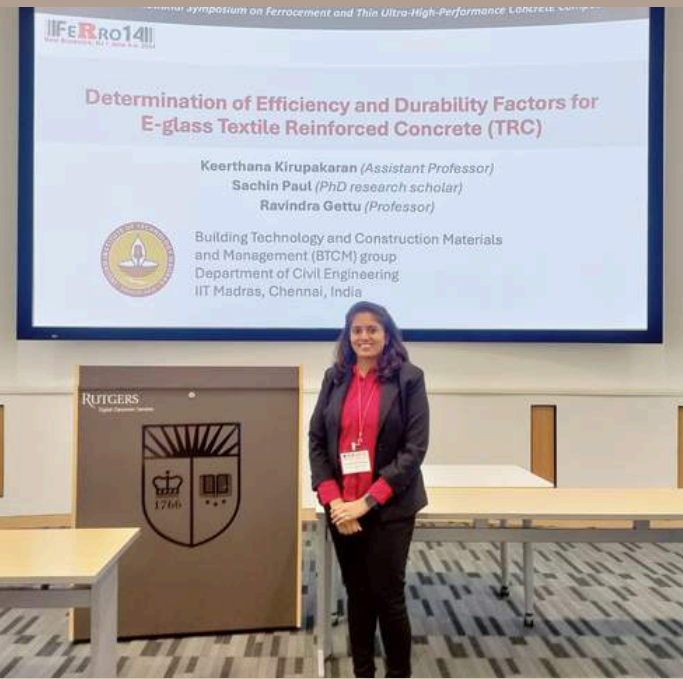


In picture (above) Prof. Miroslaw J. Skibniewski (fourth from the left), Distinguished Professor, IIT Madras and our alumni Dr. Varun Kumar Reja and Dr. Ranjith Soman with the IIT Madras team. (Picture Courtesy: Varun K. Reja)

Mr. Shanmugaraj S. had the opportunity to present his ongoing research on 3D Printed Concrete and our work in CoE on TLC2 in Loughborough University. He met Prof. Richard Buswell and his research team and visited their 3D Printing & Intelligent Automation lab



Dr. Varun Kumar Reja, Dr. Manu K. Mohan, Dr. Ranjith Soman, Prof. Meher Prasad Anumolu, Prof. Koshy Varghese, Dr. Johan Ninan and Mr. Shanmugaraj S at TU Delft, Netherlands (From Right to Left)



**Dr. Keerthana Kirupakaran, Assistant Professor at Indian Institute of Technology, Madras, attended the 14th International Symposium on Ferrocement and Thin Ultra-High Performance Concrete (UHPC) Composite in New Jersey, USA.**

The main objective of Ferro14 is to bring together researchers and practitioners in an international forum that addresses recent advances in ferrocement and thin Ultra-High-Performance Concrete (UHPC) Composites including materials such as Textile Reinforced Concrete (TRC), Textile Reinforced Mortar (TRM), Fabric Reinforced Cementitious Matrix (FRCM) and Fiber-Reinforced Concrete (FRC) composites. It also aims to serve as a vehicle that strengthens relationships between industry, research laboratories, and universities interested in the subject.

“It was a great opportunity for me to meet and network with the experts like Prof. Surender P Shah, Prof. Naaman, Prof. Barzin Mobasher in the Ferro cement society” said Dr. Keerthana Kirupakaran.



Dr. Aslam Kunhi Mohamed talked on "Understanding cementitious system at atomic Level" in ROC&TOK webinar organized by RILEM Association on June 6!! The full webinar is on [Youtube](#) !!



Thursday, June 6th, 2024  
3PM CEST/Paris Time



**ROC&TOK Webinar**

Understanding  
cementitious system at  
the atomic level (+Q&A)



**Presentation by Prof. Aslam Kunhi Mohamed,  
Indian Institute of Technology Madras, India**

# Pre-CONSEC24 Workshop

9 am to 5 pm, September 24, 2024 (Tuesday)  
Hotel Radisson BLU GRT Chennai (near airport), India

Organized by

IIT  
MADRAS



7<sup>th</sup> One-day workshop on

## Corrosion and its Control in Concrete Structures (C3S)



Dr. Deepak Kamde  
INSA Toulouse, France  
*Workshop Overview &  
Corrosion in concrete structures*



Prof. Piyush Chaunsali  
IIT Madras, Chennai, India  
*Performance specifications for  
concrete structures*



Prof. Carmen Andrade  
CIMNE/UPC, Spain  
*Duracrete model and input  
parameters for service life design*



Prof. Robert MELCHERS  
Univ. of Newcastle, Australia  
*Importance of concrete quality and  
placement on minimizing corrosion of steel*



Prof. Shwetha Goyal  
Thapar Inst., Patiala, India  
*Evolution and performance of  
organic corrosion inhibitors*



Prof. Mark Alexander  
Univ. of Cape Town, South Africa  
*Practical corrosion control:  
Influence of exposure  
conditions, material selection, and  
surface treatments*



Dr. Gino Ebell  
BAM, Berlin, Germany  
*Performance & failure  
mechanisms of galvanic anodes*



Prof. Burkan Isgor  
Oregon State Univ., USA  
*Technologies for field corrosion  
measurements with and without  
connection to steel*



Prof. Radhakrishna G. Pillai  
IIT Madras, Chennai, India  
*Optimising strategies for corrosion  
condition assessment and repairs*

### Registration Fee (including taxes)

On or before August 15, 2024 Spot registration is not allowed	Indian (INR)	Foreigner (USD)
	4000	50

### Coordinators

Dr. Deepak Kamde, INSA, Toulouse, France; [deepak.kamde89@gmail.com](mailto:deepak.kamde89@gmail.com)  
Dr. Shweta Goyal, Thapar Inst. of Engg. & Tech., Patiala, India; [shweta@thapar.edu](mailto:shweta@thapar.edu)  
Dr. Radhakrishna G. Pillai, IIT Madras, Chennai, India; [pillai@civil.iitm.ac.in](mailto:pillai@civil.iitm.ac.in)

Scan this QR code to register



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<https://consec24.com>