

Dear Readers,

We are pleased to share with you, in this edition of the ICJ, papers ranging from the domain of materials research to that of structural design. The edition is guest edited by Dr Kaustav Sarkar.

Born and brought up in Chhattisgarh, Kaustav Sarkar obtained his B.E. (Hons.) in Civil Engineering from Pt. Ravishankar Shukla University, Raipur and M.E. (Hons.) in Structural Engineering from Chhattisgarh Swami Vivekanad Technical University, Bilai. He later earned his Doctoral degree from IIT Delhi. His primary research interests pertain to the analyses of moisture transport in porous building materials and of the durability of structural materials in tropical climates. He has made important contributions towards the mapping of exposure severity to facilitate the sustainable design and management of steel and concrete structures in India. Dr Sarkar is also a passionate teacher. He has developed and delivered courses related to materials, design, and computational aspects of structural engineering for under- and post-graduate students. Presently, Dr Sarkar is an Associate Professor in the School of Civil and Environmental Engineering at IIT Mandi. He is also a member of the ICI, IBC, ISTAM, ISCMS and ISTE.

We hope you enjoy reading this edition and look forward to your feedback!

Best Regards,  
The Production Editor  
Indian Concrete Journal

Dear Readers,



The Indian Concrete Journal (ICJ) is now in its 98<sup>th</sup> year of circulation and it gives me immense pleasure to present to you the ICJ October 2024 issue. This edition of ICJ comprises of four papers. The first three of these pertain to material centric research and the fourth is on structural design.

The first paper, by Divya S. Nair and T. Meena,<sup>[1]</sup> presents a preliminary investigation exploring the challenges and opportunities associated with the development of rubberized geopolymer concrete based on the utilization of discarded tyres. Ongoing research in the area of rubberized concrete indicates that it can serve as a viable option for applications where ductility and energy dissipation are the key requirements and this paper highlights the various techno economic factors that must be weighed in while considering its application.

The second paper, by Narendra Kumar B. and co-authors,<sup>[2]</sup> presents an experimental study investigating the influence of graphene oxide on the engineering properties and microstructure of high strength steel fiber reinforced self-compacting concrete. The results show that the use of graphene oxide improves the quality of hardened concrete, however, it also brings about a decline in its slump flow

in the fresh state. The paper reaffirms that graphene oxide is a highly promising additive for cement based composites, but careful research is needed to fully comprehend its effects.

In the next paper, Prince Singh and co-authors<sup>[3]</sup> study the possibility of using LD slag as a partial replacement of natural aggregates in concrete. Their results show improvements in the compressive, split tensile and flexural strengths of concrete. The authors also implement the Random Forest algorithm for the prediction of these properties which highlights how Machine Learning algorithms can be used to minimize experimental costs.

The last paper of this edition is by Bibhas Mandal and co-authors,<sup>[4]</sup> wherein a scheme is proposed to bridge the gap between strength and ductility designs of reinforced concrete sections under flexure. Besides several design charts, a simple equation for evaluating the ductility of a section has been proposed. These can serve as useful design aids for practicing engineers.

I believe that this edition of ICJ will be of interest to structural engineering researchers and practitioners alike.

Happy reading and advance greetings for Diwali and Vijayadashami!

With Best Regards,  
**Dr Kaustav Sarkar**  
Indian Institute of Technology (IIT) Mandi

## REFERENCES

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