

Dear Readers,

We are pleased to share with you papers covering research work on various alternative constituents of concrete and the performance of the mix. This edition is guest edited by Dr Suman Saha.

Dr Suman Saha is an Assistant Professor at the Department of Civil Engineering, National Institute of Technology (NIT) Durgapur, West Bengal, India. Prior to join NIT Durgapur, he worked as Assistant Professor in the Department of Civil Engineering at National Institute of Technology (NIT) Calicut, Kerala, India. He received PhD and M. Tech. degrees both from National Institute of Technology (NIT) Karnataka, Surathkal, India and B. E. from Jadavpur University, Kolkata, India. His research interest includes alternative construction materials towards sustainability and advancement in concrete technology.

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

Production Editor
Indian Concrete Journal



Dear Readers,

Greetings from the Indian Concrete Journal.

I am pleased to bring out the current edition with insight into the recent developments in the construction industry, and materials. This edition comprises five articles, namely, Performance of Cement Composite with GGBS and Alccofine as Partial Replacement; Study on post curing properties of concrete using Nano Silica as admixture; Evaluation of the chloride diffusion coefficient in blended concrete and service life prediction of RC structures; Impact of Recycled Waste Plastic Granules in Cement Concrete as Partial Replacements for M Sand; and Construction Delays in India: A Review of Shifting Focus, Mitigation, Methodologies and Research gap. The articles of this edition tried to address several important issues related to cement, aggregate, concrete, construction activities, etc., which is expected to provide significant insights to the readers.

The first article investigated the performance of the cement composite with GGBS and Alccofine as partial replacements for cement to enhance the composite's mechanical and durability properties. The outcomes of this research work indicated better mechanical and durability characteristics

of the cement composites. Thus, it reduces the negative impact on the environment caused by the production and consumption of cement.

The next article also focuses on reducing cement content in the concrete mixes to minimise the CO₂ emission to the atmosphere by the cement industries. This research work concentrated to find out the optimum incorporation level of nano-silica in M40 and M60 grade of concrete with an improvement of mechanical and durability properties of the same.

Binary and ternary blended concrete mixtures containing fly ash, silica fume and slag as replacement of cement were considered by the research work discussed in the following article with an aim to evaluate the chloride diffusion coefficient and predict the service life of reinforced concrete (RC) structures. This study concluded that RC structures containing binary/ternary blended concrete exhibit a service life double than that of concrete without a mineral admixture.

The authors conducted experimental research work to develop a sustainable concrete with the recycled plastic waste granules (RPWG) as partial substitute for fine aggregate (M-sand). M30 grade of concrete was produced with RPWG and examined the properties. In order to compensate the negative impact of plastic waste, concrete mixes are additionally modified with 10 % glass cullet incorporation by the weight of total aggregates. The outcome of this work indicated that RPWG aggregates can be effectively used as partial substitute for the conventional fine aggregate in normal strength concretes and for higher RPWG substitution levels, the concrete mixtures with glass cullet as additional substitute for total aggregate resulted with acceptable concrete properties. The article also helps to raise awareness and serve as a message about the alternative aggregate resources to the developing countries with depleting natural aggregate resources.

The last article presented a detailed review on construction delays, which directly impacts on the performance of construction and the economic aspects of any project. The trends and focus of research on construction delays over the last two decades were examined in a systematic manner. In this analysis, the delay factors are identified and indicated, which will be helpful to the readers, practicing engineers in better time management and increase construction performance. For further research works, research gaps are also highlighted.

On behalf of ICJ, I would like to extend our sincere appreciation to the contributing authors for choosing ICJ to publish their research works and to reviewers for their constructive comments and detailed review reports on time. Thanks to the coordinated efforts of all stakeholders, we are delighted to publish this edition of the ICJ with the hope that it would be of meaningful benefits to the researchers and the

practicing engineers involved in design, construction, and maintenance of concrete materials and structures.

Bets Regards,

Dr Suman Saha

National Institute of Technology Durgapur
suman.saha@ce.nitdgp.ac.in

REFERENCES

- [1] Reddy, S. S. P., Reddy, L. S., Srikanth, M., Murthy, N. R. D., and Anusha, J. (2023). "Performance of cement composite with GGBS and alccofine as partial replacement", *The Indian Concrete Journal*, Vol. 97, No. 2, pp. 5-12.
- [2] Vignesh, A., Thyaaanesh, K., Dighade, M. A., and Sofi, A. (2023). "Study on post curing properties of concrete using nanosilica as admixture", *The Indian Concrete Journal*, Vol. 97, No. 2, pp. 13-19.
- [3] Nair, K. G., Rathod, J. D., and Lad, S. D. (2023). "Evaluation of the chloride diffusion coefficient in blended concrete and service life prediction of RC structures", *The Indian Concrete Journal*, Vol. 97, No. 2, pp. 20-36.
- [4] Ponmalar, S. and Revathi, P. (2023). "Impact of recycled waste plastic granules in cement concrete as partial replacements for M sand", *The Indian Concrete Journal*, Vol. 97, No. 2, pp. 37-45.
- [5] Saxena, H., Mittal, Y. K., and Gupta, N. (2023). "Construction delays in India: A review of shifting focus, mitigation, methodologies and research gap", *The Indian Concrete Journal*, Vol. 97, No. 1, pp. 46-58.

CALL FOR GUEST EDITORS

Call for Proposals on Special (Thematic) Edition of the Indian Concrete Journal (ICJ)

The Indian Concrete Journal (ICJ) strives publishing high-quality papers on advancements in various broader disciplines of concrete materials and structures, covering technical developments both from the academia and profession. The ICJ calls proposal from researchers and practicing engineers to serve as Guest Editor for publishing special (thematic) edition on some latest topics within the scope of the journal. Those interested in serving as Guest Editors are requested to contact the Production Editor at info@icjonline.com for more details.

- Editorial Board, ICJ.