Dear Readers,

We bring to you the April edition with varied contributions from academia and professionals. This edition is guest edited by Prof. Dinakar Pasala. He is a Professor in Civil Engineering and Dean (Sponsored Research & Industrial Consultancy) at the Indian Institute of Technology (IIT) Bhubaneshwar. He is also the Chairman of the Indian Concrete Institute (ICI), Bhubaneswar Chapter, and is an active consultant to varied industries in the fields of design, repair, rehabilitation, and construction. Durability, corrosion of steel in concrete, and waste utilisation in concrete are his specialized areas, and he has published several papers in several national and international journals to his credit.
Happy Reading!

Production Editor
Indian Concrete Journal

Dear Readers,

We are extremely happy to bring to you the April edition of the Indian Concrete Journal (ICJ). In this issue, we delve into the fascinating world of concrete, focusing on its mechanical behaviour with four research/technical papers on different themes of concrete and its behaviour. Authors have explored the latest advancements in understanding and enhancing the behaviour of RC members reinforced with steel plates and developed using alternative construction materials such as ferro cement, to enhance the load-carrying capacity and cut the total costs. They have discussed on how new materials, technologies, and construction techniques are pushing the boundaries of what concrete can achieve. A small brief of the papers that were published in this issue are being presented here.

The first article by Mondal and his co-workers highlights the behaviour of an RC beam consisting of a pre-fabricated reinforcement cage consisting of a steel plate in the tension zone instead of tension bars, both with and without crank bars. influence of a steel plate. Their experimental study involved the flexural testing of the above-said beams and they concluded that using a steel plate in the tension zone instead of steel rebars enhances the ultimate load-carrying capacity of the beams by 8-10% as they fail by yielding of the plate rather than the plate separation.

An interesting review by Kandasamy and his co-workers has highlighted the importance of using a Controlled permeability formwork liner (CPF) to enhance the service life of concrete by 2.3 to 2.5 times as CPF improves the cover zone of concrete. The authors have compared the performance of different types of CPF systems and have presented the major findings reported by various studies, systematically. Apart from their performance, the authors have also compared the functioning principle and cost implication of CPFs. These findings may find direct applications in the construction sector as the engineers may use the CPFs as per the requirements of the project.

An experimental study by Chakravarty and his co-workers compared the behaviour of conventional RCC beams and ferro-cement beams when subjected to flexure by determining their load-carrying capacity and observing the crack patterns. This study highlights the importance of the use of double-layer ferro cement beams as they have enhanced resilience and are cost-effective when compared with traditional concrete beams.

The fourth article authored by Shankar and his co-workers, highlights the importance of minimum time required for formwork removal for different structural components, depending on the surrounding temperature. As per the results of experimental studies conducted by the authors, a minimum compressive strength of 3.50 MPa and 3.25 MPa must achieved by OPC concrete and PPC concrete respectively to remove vertical formwork.

In conclusion, I would like to highlight the diverse range of compelling and informative articles in this edition. These articles are sure to engage you and deepen your understanding of the subject matter. The successful compilation of this edition is largely due to the dedicated efforts of the editing team and the experts involved. I am confident that academicians and professionals will see the ICJ as a valuable platform to publish research that goes beyond the confines of laboratories and contributes to groundbreaking construction projects. Also, the journal publishes special issues devoted to topics of current or emerging interest and provides a unifying source for relationships between materials scientists, engineers, designers and fabricators. Please share your thoughts on the papers and ICJ as a whole; your feedback is invaluable to us. We eagerly await your suggestions and views.

Prof. Dinakar Pasala
Guest Editor, ICJ

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