



Dear Readers,

We are glad to present before you the last (12th) edition of the Indian Concrete Journal (ICJ) in the year 2021. In this edition, some latest developments in cement and concrete materials are being reported through five manuscripts. These developments are based on experimental research works conducted by the authors at their respective laboratories essentially to improve properties of mortar/concrete, while recommending addition of some waste materials. Thus, these contributions in-turn help in taking the 'circular economy' efforts in cement and concrete industry forward through effective utilization of waste materials, which is anticipated to be the focus and need of future investigations.

Use of recycled concrete aggregate (RCA) is need of the time to address sustainability issues. For this, in the first manuscript, the authors have presented results on the mechanical properties of concrete having recycled aggregate. Reduction in compressive strength and elastic modulus of the RCA compared to conventional concrete has been highlighted, such that these parameters can form basis of member designed with the RCA. Moreover, equations given in different codes and standards have been assessed for their suitability in calculating mechanical properties of the RCA. It is important to investigate further on the RCA so that they are used routinely and extensively in the construction industry.

Properties of self-compacting concrete (SCC) at fresh and hardened states have been evaluated in the next article. A relation between split tensile strength and compressive strength has been proposed for the SSC. The effects of water-powder ratio and powder content on mechanical properties have been reported. Increased powder content is found to increase the slump flow in case of the SCC.

The use of ceramic waste along with silica flume and fly ash is dealt with in the next article and effect of their addition in concrete on compressive and flexural strengths has been

reported. It is claimed that the use of such materials in production of concrete will be beneficial if their optimum volume is added. The authors have conducted analysis of variance and highlighted the effects of ceramic waste, silica flume, and fly ash addition in concrete.

Concrete added with coal bottom ash (CBA) has been investigated and reported in the subsequent article, studying its chloride ingress and capillary water absorption properties. The effects of the CBA in concrete on various other properties have also been studied herein. Grinding of the CBA is seen to have no effect on the pozzolanic activity; however, it is found to enhance mechanical properties of concrete due to the increased specific surface area.

Finally, benefits of waste tires are reported through their use in making mortar in the last article. Size of the rubber fibers, dosage, and their treatment using $\text{Ca}(\text{OH})_2$ solution for roughing surface are shown to affect mechanical properties of the resulting mortar. The treated rubber fibers have helped in improving compressive and flexural strengths of the fiber-reinforced cement mortar.

We believe that the readers will find these research articles stimulating and informative. Especially, these contributions would help in our deeper understanding on various effects of adding some byproducts or waste materials emerging from industries and construction demolition wastes in making concrete and thereupon ascertaining gainful utilization of the waste for contributing to circular economy.

On the year-ending, at the outset we thank all the reviewers of the ICJ for their support extended in reviewing large number of manuscripts in a timely manner and giving constructive criticism, while facilitating decision-making eventually. Also, authors need to be thanked for deciding to publish their important outcomes of research in the ICJ. We also thank members of editorial board including guest editors, typesetters, and all the stakeholders as well as well-wishers for their intense patronage with the ICJ, as the progress of the journal depends on their contributions in various capacities. We look forward to your continued support in the new year as well to excel in the quality of research publications in the ICJ. While requesting for your continued support, the ICJ family wishes you Happy New Year 2022.

Vasant Matsagar
Editor-in-Chief, ICJ