

Dear Readers,

We are pleased to share with you papers covering research on various constituents of concrete and the characteristics they impart. This edition is guest edited by Dr Dyana Joseline.

Dr Dyana Joseline is an Assistant Manager in the Quality Management department of Heavy Civil Infrastructure, Larsen and Toubro Construction, Chennai, India. She is a PhD degree holder in Civil Engineering from Indian Institute of Madras, India and M.Tech. degree holder in Structural Engineering from B.S. Abdur Rahman University, Chennai, India. Her PhD work focussed on improving the existing practices for service life-based design and assessment of prestressed concrete structures, based on scientific understanding of corrosion mechanisms in these systems. She has been involved in various technical activities of RILEM and aspires to contribute towards the field application of advancements in construction material science.

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

Production Editor
Indian Concrete Journal



Dear Readers,

Both chefs and concrete technologists would certainly agree that the physical and chemical properties of the ingredients strongly influence the finished product!

Aggregates constitute over 70 % of the volume of concrete. Their properties, which are in turn dependent on their mineralogy, have a significant effect on the characteristics of concrete. As a guide to select the right aggregates for the right application, Dr Swathy Manohar from Indian Institute of Technology (IIT) Bombay, Dr K. Mohammed Haneefa, Dr Bahurudeen A from Birla Institute of Technology and Science Pilani-Hyderabad campus, Dr B S Dhanya from Rajiv Gandhi Institute of Technology, Govt. Engineering College, Kottayam and Dr Manu Santhanam from IIT Madras present a detailed review on aggregate mineralogy and the effect on the properties of concrete. They also summarize various methods to characterize aggregate mineralogy and provide a colour atlas of common minerals in aggregates.

The binder choice and content can influence important aspects of a concrete mix such as workability, shrinkage, compressive strength and durability. Over the past decades, several new binders have been successfully introduced into the construction industry based on their performance and sustainability potential. The next paper, authored by Mr. Nanfu Qiao, Mr. Yizhen Wang, Mr. Qihua Liu and Mr. Mengyuan Zhao from Nanyang Normal University, China, presents a preliminary investigation carried out to optimize the proportion of ordinary Portland cement, with

volcanic ash as partial replacement, based on the workability and compressive strength, and throws light on the prospects of volcanic ash as a viable alternative to OPC.

The next two papers are on reinforcement – cementitious matrix combinations. The paper by Ms V. Roopa, Mr Abdul Latheef and Dr Haji Sheik Mohammed from B. S. Abdur Rahman Crescent Institute of Science and Technology, Chennai presents an analysis of the flexural and impact performance of ferrocement panels with combinations of mesh and mortar types, to select a suitable system for use in secondary roofing. The last paper of this edition is authored by Dr R Shanthi Vengadeshwari from Dayananda Sagar College of Engineering, Bangalore, Dr H N Jagannatha Reddy from Bangalore Institute of Technology, Bangalore, and Dr R Prabhakara from Visvesvaraya Technological University, Belagavi. Through experimental investigations, the authors demonstrate the effects of blended incorporation of steel and basalt fibers on selected properties of concrete. The optimum volume fraction for fiber hybridization was chosen based on the effect of mono fiber addition on the fresh and hardened concrete properties.

I thank ICJ for giving me the opportunity to guest-edit this issue and be a part of the endeavour to make the latest research findings available to practicing engineers and decision makers in the concrete industry, especially in India.

Regards,
Dr Dyana Joseline