Dear Readers,

We are pleased to share with you papers covering research on construction materials and field application. 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 Ph.D. 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 Ph.D. 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,

Over the years, concrete has changed tremendously to cater to the needs of the construction industry. For instance, the advent of chemical and mineral admixtures has enabled the development of special concretes that can be tailor-made to be the 'best-fit solution' to any specific requirement in a construction project-be it enhanced rheology, strength, durability or sustainability [1]. Likewise, various reinforcements are available in the market to enable the design of reinforced/ prestressed concrete structures with the desired structural capacities as well as service life [2]. The field application of each of these materials has been made possible through purpose-driven research contributions over several decades and the efforts of pioneering leaders in the construction industry who were willing to give new materials and technologies a chance. This issue of ICJ brings together contributions of authors from academia as well as industry who work towards this common goal.

The photograph on the cover page shows the reactors and cooling towers of Kakrapar Atomic Power Station (3&4) in Gujarat, India, where significant quantities of fly ash was used as partial replacement to ordinary Portland cement (OPC) in concrete. The first paper of this edition, authored by Mr. S. B. Kulkarni & Mr. S N. Bhat from the Nuclear Power Corporation of India Ltd., and Mr. A. Raghupathy & Mr. K. Kiran from L&T Construction, throws light on the practical aspects of this project. Through a case study on the development and usage of fly ash concrete the authors provide insights on the stringent quality assurance and quality control program followed to ensure consistent performance of about 1,75,000 MT of fly ash used. The paper also summarizes the additional considerations made and mockups that were carried out during the selection of concretes.

The next paper presents investigations on the performance enhancement imparted by concrete constituents whose potential was identified more recently. It is authored by Dr Swathy Manohar from Indian Institute of Technology (IIT) Bombay, Dr Haneefa from SecureTech LLC Abu Dhabi, and Mr. Sundar Rathinarajan & Dr Manu Santhanam from IIT Madras. Based on a comprehensive evaluation of various geopolymer systems at elevated temperatures, the authors demonstrate the potential of using calcined clay (largely available in the Indian subcontinent) to produce geopolymers with enhanced thermal behavior.

The last paper of this edition is on the development of axial force-bending moment interaction charts for seismic design of reinforced concrete slender shear walls. Authored by Ms. Shivani Sharma, Mr. Narsiram Gurjar, Ms. Aiswarya Menon, Mr. Ravi Kanth Sriwastav and Dr Dhiman Basu from IIT Gandhinagar, the design charts can be used in design offices.

Being a journal which is widely read by practicing engineers and decision makers in the concrete industry, especially in India, ICJ plays a huge role in taking laboratory research to field. I thank ICJ for giving me the opportunity to guest-edit this issue and look forward to guest editing another issue focussing on field application in the near future.

Regards,

Dr Dyana Joseline

REFERENCES

[1] Marios N. Soutsos, "Chapter 18: Special Concretes", *ICE manual of Construction Materials*, January 2009, pp. 203-218.

[2] ACI Education Bulletin E2-00 (reapproved 2006), "Reinforcement for Concrete-Materials and Application", Developed by Committee E-701, *Materials for Concrete Construction*, pp. 1-16.