

Special Issue

Cement and Concrete Composites in Construction: Applications and Potential

Message from the Guest Editors

We are pleased to announce the Special Issue titled “Cement and Concrete Composites in Construction: Applications and Potential”, which aims to showcase cutting-edge research and practical advancements in the design, performance and deployment of cement- and concrete-based composite materials across diverse construction applications. Topics of interest include, but are not limited to:

- Design, formulation and characterization of cement and concrete composites
- Fiber-reinforced and particle-reinforced composites (steel, polymer, basalt, glass, natural fibers)
- Ultra-high-performance concrete (UHPC), lightweight composites and 3D printable mixes
- Durability, long-term performance and degradation mechanisms (corrosion, freeze–thaw, sulfate/ASR, carbonation)
- Functional and smart composites (self-sensing, self-healing and multifunctional materials)
- Sustainable and low-carbon solutions (supplementary cementitious materials, alternative binders, recycled aggregates, LCA/LCCA)
- Rheology, workability and processing for casting, pumping and additive manufacturing
- Structural applications: beams, slabs, shells, bridges, pavements and prefabricated systems

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About the Journal

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

Editor-in-Chief

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