

# Special Issue

## Sustainable Cement-Based Materials and Low-Carbon Construction Technologies

### Message from the Guest Editors

The construction industry plays a pivotal role in global carbon emissions, prompting a pressing need for sustainable construction materials and technologies. This Special Issue aims to collect original research and review articles focused on recent advances in sustainable construction materials and low-carbon technologies. Emphasis is placed on the low-carbon design and durability enhancement of cement-based materials, the integration of carbon capture, utilization, and storage (CCUS) in construction practices, and the implementation of digital technologies for greener and more efficient construction. Topics of interest include, but are not limited to, the following:

- Development of low-carbon cementitious materials;
- Carbon capture, utilization, and storage (CCUS) in construction;
- Low-carbon design approaches for cement-based systems;
- Durability improvements of sustainable construction materials;
- 3D printing and digital manufacturing of cementitious components;
- Life-cycle assessments and environmental impacts of new materials;
- Integration of AI and digital tools for material design and process optimization.

### Guest Editors

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### Deadline for manuscript submissions

10 February 2026



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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.

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### Editor-in-Chief

Prof. Dr. David Arditi

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JCR - Q2 (Construction and Building Technology) /  
CiteScore - Q1 (Architecture)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.9 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).