Special Issue

Sustainable Geopolymers and Low-Carbon Cementitious Materials for High-Performance Concrete

Message from the Guest Editors

The construction industry is under increasing pressure to address environmental challenges and reduce its carbon footprint. High-performance concrete (HPC), essential for modern infrastructure, often relies on conventional cementitious materials with significant environmental impacts. Sustainable alternatives, such as geopolymers and other low-carbon cementitious materials, offer a promising path to achieving high performance while meeting global sustainability goals. This Special Issue aims to provide a platform for state-of-the-art research on the development, characterization, and application of sustainable geopolymers and low-carbon cementitious materials in HPC. Contributions focusing on interdisciplinary approaches, innovative experimental techniques, and computational modeling are particularly encouraged. This Special Issue aspires to advance the knowledge base for sustainable, high-performance concrete technologies, fostering a transition to greener construction practices worldwide. For further reading, please follow the link to the Special Issue Website at:https://www.mdpi.com/journal/buildings/special_issues/8V07T80MF4

Guest Editors

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Deadline for manuscript submissions

closed (10 February 2026)

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/226702

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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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