Special Issue

High Utilization of Geopolymer Concrete for Sustainable Building Solutions

Message from the Guest Editors

Ordinary Portland cement (OPC) is an essential building material in civil engineering. However, the production process of OPC leads to increasingly severe energy consumption and environmental issues. To address these challenges, geopolymer- or alkali-activated materials, innovative types of inorganic cementitious material developed in recent years, have emerged as promising alternatives. Geopolymers not only facilitate the resource reuse of industrial solid waste, but also significantly reduce energy consumption and greenhouse gas emissions. As such, they are poised to become a sustainable alternative to ordinary silicate cement. Currently, a diverse range of raw materials is available for the preparation of geopolymers. Consequently, in-depth research is required to effectively enhance the mechanical properties of geopolymer concrete and improve its overall utilization efficiency, thereby establishing a solid foundation for modern green urbanization. For further reading, please follow the link to the Special Issue Website at: https://www.mdpi.com/journal/buildings/special_issues/V6IJ07UEP5

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Deadline for manuscript submissions

closed (30 June 2025)

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/224944

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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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