Special Issue

Research on Sustainable Materials in Building and Construction

Message from the Guest Editors

As the impact of climate change is causing great concern globally, there has been increasing pressure on cutting carbon emissions across all sections. The global annual consumption of cement reached 53 billion tonnes in 2023. Cement manufacturing accounts for about 5-8% of global CO2 emissions. With the increasingly prominent global energy problem and the high carbon emissions related to the production of ordinary Portland cement (OPC), acceptable alternatives to OPC are required. The usage of energy-saving and efficient materials has attracted increasing attention in the construction industry. The main topics of this Special Issue include—but are not limited to—sustainable construction materials, low-carbon materials, composite geomaterials, geopolymer, phase-change building materials, grouting materials, thermal insulation materials, and building integrated photovoltaics. Full papers, communications, and reviews are all welcomed.

Guest Editors

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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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