Special Issue

Sustainability and Next-Generation Building Materials: Innovations for a Greener Future

Message from the Guest Editors

The sustainability of building materials is a critical area of research, driven by the urgent need to mitigate environmental impact, conserve resources, and promote circular economy principles within the construction sector. This Special Issue aims to explore innovative approaches, advancements, and challenges in developing and implementing sustainable building materials across their entire life cycle, from extraction and manufacturing to use, reuse, and end-of-life management. Key themes include assessing environmental footprints (e.g., embodied carbon, water consumption), developing novel bio-based and recycled materials, optimizing material performance and durability, and integrating digital technologies for sustainable material selection and management.

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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