

Special Issue

Composite Building Materials with Minimal Thermal Conductivity for Enhanced Energy Efficiency

Message from the Guest Editor

It is estimated that over 25% of building energy loss occurs through building envelopes, and energy efficiency continues to be one of the most important building design criteria; therefore, the prevention of heat loss through conduction requires the use of materials with low thermal conductivity or high thermal resistance for manufacturing building components such as beams, columns, walls, floors, foundations, roofs, and envelopes. This Special Issue aims to consider developments in composite building materials. Such materials can be used for load-bearing structural components, non-load-bearing or non-structural/architectural components, building envelope components, interior finish components, and more. This Special Issue also welcomes contributions that, in addition to investigating methods for lowering thermal conductivity, also address lowering carbon footprints, as minimizing embodied energy is another prominent trend in innovative material design. For further reading, please follow the link to the Special Issue Website at: https://www.mdpi.com/journal/buildings/special_issues/6C80TT9KAJ

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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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