Special Issue

Smart Building Materials and Designs for Sustainable Built Environment

Message from the Guest Editor

This Special Issue aims to promote a debate on the recent advances in and future challenges for smart building materials and designs that aim to achieve a sustainable built environment. We invite international researchers to share their recent achievements in the development of smart building materials and novel (bioinspired and non-bioinspired) designs and their application at the scale of a building or city. The primary topics covered within this thematic cover the following aspects:

- building material development;
- building material properties;
- bioinspired materials;
- bioinspired designs;
- heat transfer mechanisms;
- energy estimation and analysis;
- micro-climatic analysis;
- urband heat island effect;
- optimisation;
- low-carbon buildings;
- net-zero energy buildings;
- thermal comfort;
- computational simulations;
- experimental measurements.

The above list of topics may not be exhaustive. As such, researchers should feel free to submit contributions on any additional topic that could be relevant to the field of sustainable built envrionment.

Guest Editor

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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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