Special Issue

Advanced Materials and Systems for Energy Efficient Buildings

Message from the Guest Editors

Today, the most needed and active research and development area related to buildings is energy-efficient construction, which falls under the general sustainability goal for buildings. Energy efficiency can be considered from the perspective of embodied energy, encompassing the energy used in creating the materials and systems making up the building, or the operational energy, which deals with energy consumption when the building is in use. Accordingly, the Special Issue invites contributions related to the following areas: materials used for foundation, structural, and architectural components, including envelope and roofing systems; Advancements in innovative construction materials such as low/zero/negative embodied carbon materials; recyclable/reusable materials; thermal-insulation materials; and innovative systems related to load-bearing and non-load-bearing components, foundation, envelope, glazing, roofing, siding, solar panels, and building-integrated photovoltaics are of particular interest. Authors are invited to submit contributions related to these topics and to also discuss how the subject materials and systems lead to energy efficiency.

Guest Editors

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Dr. Ehsan Kamel

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Deadline for manuscript submissions

closed (31 October 2023)

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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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