Special Issue

Building Solutions: Harnessing Nanotechnology, Smart Materials, and Photocatalysis for Enhanced Durability and Sustainability

Message from the Guest Editors

Announcing the "Building Solutions: Harnessing Nanotechnology, Smart Materials, and Photocatalysis for Enhanced Durability and Sustainability" Special Issue. Thus, we invite researchers to contribute original and innovative research works. Articles addressing, but not limited to, the following subtopics are considered suitable for publication:

- Nanotechnology applied to the durability and strength of building materials;
- Eco-efficient building materials and the use of geopolymers;
- Development of smart glass with nanoparticles for solar control in buildings;
- Repair techniques with phase change materials for energy efficiency in residential environments;
- Photocatalysis for the improvement of indoor and outdoor air quality;
- Integration of self-healing materials into heritage structures to extend their lifespan;
- Innovations in construction materials with self-healing capabilities for maintenance and durability;
- Advances in photocatalytic paints and concrete for the reduction in urban pollutants.

We look forward to contributions that will undoubtedly enrich this Special Issue and aid in pursuing a more sustainable future. Kind regards,

Guest Editors

Dr. Iran Rocha Segundo
Dr. Claver Pinheiro
Prof. Dr. Joaquim Carneiro

Deadline for manuscript submissions

closed (20 July 2025)

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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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Author Benefits

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JCR - Q2 (Construction and Building Technology) / CiteScore - Q1 (Architecture)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 15.1 days after submission; acceptance to publication is undertaken in 2.9 days (median values for papers published in this journal in the second half of 2025).