Special Issue

Innovative Performance-Based Risk Assessment and Bio-Composite Applications for Disaster-Resilient Structures

Message from the Guest Editors

The increasing frequency and intensity of natural hazards have underscored the need for more resilient and sustainable building solutions. This Special Issue aims to gather original research and review papers focused on performance-based risk assessment methodologies for building structures that are subjected to various types of hazards, including seismic events, windstorms, floods, and fire. Emphasis is placed on analytical, numerical, and experimental approaches that quantify structural vulnerability and inform design or retrofit strategies. The integration of bio-composite materials is gaining attention as a sustainable alternative for enhancing structural performance and reducing environmental impact. This Special Issue welcomes contributions exploring the mechanical properties, durability, and application potential of bio-based materials in disaster risk mitigation. We invite researchers and practitioners to submit high-quality contributions that advance the state of the art in both structural risk assessment and the innovative use of bio-composite materials. Interdisciplinary approaches and case studies are particularly encouraged.

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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