

Special Issue

Trends, Challenges, and Innovations in the Seismic and Vibration Performance of Structures

Message from the Guest Editors

One pioneering structural engineer once emphasized, "The essence of earthquake engineering lies not in predicting seismic events, but in ensuring structures remain functional when subjected to dynamic forces." Seismic and vibration performance is central to modern civil engineering, shaping public safety, infrastructure longevity, and community resilience. Defined by evolving trends, ongoing challenges, and transformative innovations, this Special Issue will highlight cutting-edge advances in seismic and vibration engineering. Original research and reviews may address seismic design trends, advanced vibration control strategies, innovative materials for resilient structures, performance-based design frameworks, real-time structural health monitoring, computational modeling and simulation techniques, artificial intelligence applications in vibration analysis, successful seismic retrofitting case studies, and insights from recent global seismic events. Contributions that combine theoretical advancements with practical implementation 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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