



Recent Advances in Structural Health Monitoring and Maintenance of Buildings

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Message from the Guest Editors

Dear Colleagues,

Because of the need to continuously meet operational safety and functionality goals during their long service life, structural health monitoring (SHM) of full-scale civil infrastructures is an inevitable research trend. In the past two decades, with advanced technologies such as sensing networks, data acquisition, communication, signal processing, information management, and intelligent algorithms, SHM technologies and corresponding developments applied to civil infrastructures, especially buildings, have attracted the interest of scientists and engineers.

Therefore, this Special Issue aims to collate the most recent research trends and advanced technologies in buildings SHM to track operational safety and functionality under long-term service and evaluate structural performance. We welcome papers on the following and related topics, including but not limited to:

- Structural health monitoring of buildings;
- Sensing networks and optimization;
- Signal processing;
- System identification;
- Damage detection, location, and quantification;
- Structural performance evaluation;
- Numerical modeling and model updating;
- Modal analysis;
- Environmental effect





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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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