# Special Issue

# AI-Driven Health Monitoring and Management of Building and Energy Structures

## Message from the Guest Editors

This Special Issue will cover advances in the structural health monitoring and management of buildings, bridges, and aerospace structures, integrating monitoring information and artificial intelligence (AI) techniques, contributing to the development of smart monitoring and management systems. It will discuss major advances in the development of smart sensors (i.e., optical fiber sensors and acoustic sensors), efficient data processing and interpretation methods, AI-driven structural feature recognition, structural state assessment and life-cycle prediction, potential damage and risk prevention, and smart management. Themes of interests include, but not limited to, the following:

- Smart monitoring system for buildings, bridges and aerospace structures;
- Advanced sensors, i.e., optical fiber sensors and acoustic sensors;
- Structural parameter recognition and physical state assessment;
- Data fusion and model updating methods;
- AI driven structural feature identification;
- Vibration based structural state characterization;
- Monitoring data motivated model updating;
- Structural risk prevention and management;
- Sudden disaster warning techniques;
- Smart management of structural life-cycle.

## Guest Editors

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Prof. Dr. Ping Xiang

## Deadline for manuscript submissions

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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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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).