Special Issue

Conventional and Emerging Methods in Structural Monitoring: Bridging the Past and Future

Message from the Guest Editors

Structural monitoring is crucial for ensuring the safety, durability, and resilience of civil infrastructure, including bridges, buildings, dams, and tunnels. While traditional methods (e.g., strain gauges and accelerometers) have long been the backbone of structural health monitoring (SHM), rapid advancements in sensing technologies, data analytics, and automation are revolutionizing the field. Many industries still depend on traditional systems due to their reliability; however, innovative techniques (e.g., computer vision, wireless sensor networks, and digital twins) offer unprecedented precision, scalability, and cost efficiency. The rise of AI/ML, IoT, and big data analytics has enabled predictive maintenance and real-time decision-making. This Special Issue seeks to critically examine the synergies and trade-offs between conventional and emerging approaches, fostering a multidisciplinary dialogue to address pressing challenges in infrastructure resilience, sustainability, and safety. Potential topics for this issue include, but are not limited to, the following:

- **Traditional techniques**
- **Innovative solutions**
- **Hybrid approaches**
- **Case studies**

Guest Editors

Dr. Tengjiao Jiang

Dr. Shaorui Wang

Dr. Junlin Heng

Dr. Ming Wang

Dr. Kui Luo

Deadline for manuscript submissions

31 December 2025

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/237896

Buildings
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
buildings@mdpi.com

mdpi.com/journal/buildings

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/journal/buildings

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

Prof. Dr. David Arditi
Construction Engineering and Management Program, Department of Civil, Architectural, and Environmental Engineering, Illinois Institute of Technology, 3201 South Dearborn Street, Chicago, IL 60616, USA

Author Benefits

High Visibility:

indexed within SCIE (Web of Science), Scopus, Ei Compendex, Inspec, and other databases.

Journal Rank:

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

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.9 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).