

## **Radio Frequency Sensing for Structural Health Monitoring**

Structural health monitoring (SHM) plays a critical role in ensuring the safety of large-scale structures during their operational lifespan, such as pipelines, railways, and buildings. It is a reliable, effective, and economical monitoring method to ensure structural safety. SHM of large-scale structures, which aims at structural integrity and faults diagnosis, is critically important.

In the last few years, radio frequency (RF) sensing and sensors have attracted increasing interest in SHM for the advantages of being low-cost, passive, and maintenance-free. The enormous promise of RF sensing technology in SHM, including RF sensing vibration and crack sensing, has been shown in numerous scientific publications. Even though RF sensing-based SHM has made significant development, many scientific issues still need to be solved, such as multi-parameter detection and RF sensing's low sampling rate.

This special issue aims to promote the application of SHM based on RF sensing from laboratory testing or modeling to large-scale realistic structures. The detailed discussion hopes to be instructive in promoting the application of RF sensing in SHM.

Potential topics include, but are not limited to:

- RF field modulation for earthquake monitoring
- Temperature monitoring using wireless RF sensing systems
- RF sensing for corrosion detection & characterization
- Structural damage detection based on RF technology
- RF sensing technologies for intelligent bus monitoring
- Multi-radio-frequency channels inspection system for bridges
- RF sensing for 3D structural health monitoring
- RF sensing for non-destructive testing of composite materials

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Guest editors:

Mudasir Mohd, University of Kashmir

Agusti Solanas, Rovira i Virgili University

Chin-Ling Chen, Chaoyang University of Technology

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Potential authors:

#1

Hong Zhang

Department of Information Engineering, Shanxi Conservancy Technical Institute,  
Yuncheng, China

#2

Ruizhi Chen

Intelligent Manufacturing College, Zhanjiang University of Science and Technology,  
Zhanjiang, China

#3

Guangyue Kou

Department of Information Security, Naval University of Engineering, Hubei, Wuhan,  
China

#4

Yafeng Chen

Department of Computer and Art Design, Henan Light Industry Vocational College,  
Zhengzhou, China