

# **Journal of Structural Engineering (JoSE)**

CSIR-Structural Engineering Research Centre  
(Council of Scientific and Industrial Research)

Chennai, India

## **Call for Papers on**

### **‘Advances in Structural Health Monitoring and Assessment’**

Critical infrastructure facilities such as important buildings, bridges, pipelines, nuclear reactors, pressure vessels in refineries, petrochemical plants, strategic structures, communication towers, power plant structures, etc. need to perform safely and satisfactorily during their full service life. Structures are victims of several adversities such as, temperature variation, seismic attack, over loading, fatigue cycling, environmental impacts, ageing, poor design, poor maintenance, etc. A great deal of effort is being made over the past couple of decades to timely detect damage/flaws in structures by developing/ investigating various types of techniques. This will enable to avert the catastrophic failures which the world has witnessed in several occasions. Due to the size, material, configuration, field condition and environmental variability, health monitoring of civil structures possesses huge challenge ranging from selection of sensor, data transfer, algorithms, non-availability of information related to pristine conditions etc. Various techniques such as static response, vibrational parameters, acoustic emission, bulk- and guide- wave propagation, IR thermography (using both contact and non-contact methods) are being attempted. Few of the techniques are able to provide the global information, others are superior for obtaining the local information. Recently, huge impetus is given for developing strategies for structural health monitoring using baseline-free methods as dependency of baseline information makes most of the techniques not feasible for implementation as the information, in most of the cases, not available or the response of the system may be affected by the change in the environmental and operational conditions. Therefore, dependency of the baseline information may unnecessarily lead to false positive conditions. Further data-driven models can provide the next-gen solutions for developing strategies for predictive maintenance of structures. Thus, integrated structural health monitoring (SHM) is taking the center stage for assessment and maintenance of built-in infrastructure through the as-needed maintenance regime by replacing the conventional schedule based maintenance.

Keeping this in view, the April – May 2022 issue of the Journal of Structural Engineering will be a special issue devoted to the topic of “Advances in Structural Health Monitoring and Assessment”. Topics to be considered (but not limited to) are:

- Advanced sensors and techniques for instrumentation, data transfer and acquisition
- Baseline-free and output-only real time SHM techniques
- Physics based and data-driven methods for SHM
- Forced and ambient vibration testing and experimental modal analysis
- Acoustic emission, Ultrasonics, IR thermography
- Smart materials and systems for SHM
- Full-scale implementation of SHM

### **Key Dates**

Last date of submission of abstract	October 31, 2021
Intimation of acceptance of abstract	November 15, 2021
Full length paper (for the accepted abstracts)	December 31, 2021

Instructions to authors, which will be helpful in preparing the final manuscript, can be downloaded directly from the website: <https://serc.res.in>.