Mechanical Systems and Signal Processing

CALL FOR PAPERS

Special Issue on Interdisciplinary and Integration Aspects in Structural Health Monitoring

Structural health monitoring (SHM) has been becoming one of the most popular research areas in engineering fields recently. SHM is mainly a process of: (i) observing or tracing the performance of an engineering structure/system under environmental and operational loads by sensors and instrumentation devices, (ii) evaluating the performance of the structure/system for any development of defect or damage by use of the measured data and analytical tools, and (iii) issuing an alarm when the designated performance criteria are exceeded. An SHM system is in fact a synthetic application of various branches of engineering and science disciplines such as mechanical engineering, civil engineering, optical engineering, electrical engineering, electronic engineering, communication engineering, software engineering, computer science, material science, information technology, etc. In the past decades, lots of SHM systems have been devised, implemented and operated worldwide to monitor the structural performance and operational condition of various types of engineering structures under their in-service life. The monitoring results normally provide realistic and updated information for better understanding the performance of the structures and for establishing the priority in the planning and scheduling of inspection and maintenance works.

Mechanical Systems and Signal Processing (MSSP) (Impact Factor: 2.075 in 2009) is therefore launching a Special Issue on Interdisciplinary and Integration Aspects in Structural Health Monitoring. This special issue mainly aims to aggregate the latest research efforts contributing to theoretical, methodological and technological advances in the integration of various aspects of SHM applications from worldwide professionals within a broad range of disciplines. The specific topics of interest within the scope of this special issue shall include, but not be limited to, the following:

- Smart sensing materials for SHM;
- Wireless and remote sensing technology;
- Monitoring-based system identification and model updating;
- Diagnostics and prognostics of structural components and systems;
- Sensor placement and optimization strategies;
- Pattern recognition and statistical methods;
- Data fusion and information extraction techniques;
- Techniques of structural rating and their integration with SHM;
- Multidimensional clustering and management of data;
- Data acquisition, processing, transmission and control integration;
- Design and implementation of integrated SHM systems;
- Self-powered sensors and energy harvesting for sensor networks;
- Bio-inspired systems and nanotechnology applications.
Prospective authors are invited to submit their original works relevant to the above-stated scope of the special issue. The authors should follow the Journal guidelines for preparing and submitting their manuscripts:

http://www.elsevier.com/locate/ymssp

The manuscript should be submitted electronically to the Journal website using the web-based submission tool and indicating that the submission is intended for the Special Issue “Interdisciplinary and Integration Aspects in Structural Health Monitoring”. Each manuscript will be reviewed by at least three referees in accordance with the Journal requirements.

**SCHEDULE FOR SUBMISSIONS**

Manuscript Submission Deadline: 30 November, 2010  
Reviewers’ Reports and Decisions: 28 February, 2011  
Revised Manuscript Submission Deadline: 30 April, 2011

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