Special Issue

Fatigue-Sensing Technologies for Manufacturing Materials and Machinery Parts

Message from the Guest Editors

With advanced sensing technologies, including various sensor types such as strain gauges, piezoelectric sensors, fiber optic sensors, and so on, the reliability and lifespan of critical industrial components and parts can be examined and measured. These sensors are integrated into machinery parts to provide the real-time monitoring of material conditions, allowing for the early detection of fatigue-related issues before a catastrophe occurs. These NDT methods are essential for routine inspections and quality control in manufacturing environments. Data analysis and machine learning techniques in fatigue monitoring can predict the onset of fatigue and estimate the remaining useful life of components. These predictive models are crucial for implementing condition-based maintenance strategies, which help prevent unexpected downtime and reduce maintenance costs.

- fatigue sensing
- predictive maintenance
- machine learning
- nondestructive testing (NDT)
- material fatigue
- digital manufacturing
- structural health monitoring

Guest Editors

Dr. Zepeng Liu

Dr. Matthew Armstrong

Dr. Libing Cao

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

mdpi.com/journal/sensors

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro
Dipartimento di Ingegneria Elettrica e dell'Informazione (Department of Electrical and Information Engineering), Politecnico di Bari, Via Edoardo Orabona n. 4, 70125 Bari, Italy

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