Special Issue

Damage Detection and Location of Structural Materials

Message from the Guest Editor

It is inevitable that structures under stress due to mechanical or environmental loading eventually develop damage. The detection of damage initiation and its location is crucial for taking earlier precautions and making timely repairs and decisions regarding the residual life of structural materials and preventing unexpected failures. With the advancement of modeling, data analytics, data acquisition systems, and sensors, there has been significant progress in real-time damage detection and localization in complex structural systems and materials. In this Special Issue, we aim to present the latest research and developments on the methods for damage detection and localization. Topics of interest include but are not limited to the following:

- Predictive models for damage localization
- Advanced signal processing methods
- Damage localization in complex structural systems
- Influence of anisotropy in damage detection and localization
- Innovative sensor technologies for improved damage localization
- Role of machine learning in damage detection
- Visualization in damage detection and location

Guest Editor

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Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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