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Fatigue and Damage in Metallic Materials

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Message from the Guest Editors

Dear Colleagues,

Fatigue is believed to be one of the key factors that causes the failure of engineering structures. The various types of engineering applications, different kinds of fatigue failure and the accompanying complex mechanisms among different materials and structures make fatigue a complicated topic that fuels research into the fatigue design method.

The process of metal fatigue damage is complex, and there are significant differences in the mechanism, deformation characteristics, and failure modes of metal fatigue damage under different load types and service environments. The deformation characteristics and damage mechanisms are essentially a multi-scale process, which needs both cross-scale modeling and experiments.

The aim of this Special Issue is to highlight recent advances related to fatigue and damage of metallic materials to ensure safety, reliability and long-term stability of engineering components in extreme service environments.

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Message from the Editorial Board

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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