Special Issue

Fatigue Damage Mechanism and Fatigue Life Prediction of Metallic Materials

Message from the Guest Editors

Metals and alloys are widely used in engineering applications, often requiring careful consideration of complex loading conditions and usually limited by fatigue and fracture performance. The behaviour of metals and alloys under fatigue loading is a multi-scale, complex problem involving microscopic damage initiation, small crack formation, coalescence, propagation and eventually macroscopic fracture failure. This Special Issue aims to present recent research advancements regarding the fatigue of metallic materials. Potential topics may cover, but are not limited to, experimental testing, characterization, theory development and modelling of the fatigue behaviour of various metallic materials over different scales, with one or multiple physical processes. We also encourage the submission of research articles that integrate experimental or situational data with data-driven algorithms into the analysis of fatigue performance.

Guest Editors

Prof. Dr. Haitao Cui

College of Energy and Power Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China

Dr. Qinan Han

College of Energy and Power Engineering, Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China

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

mdpi.com/journal/ metals





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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

Prof. Dr. Yong Zhang

Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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