

Special Issue

Mechanical Behavior of Metallic Materials in Extreme Environments

Message from the Guest Editor

Many technological and industrial fields, e.g., the manufacturing, machining, aerospace, and construction sectors, operate in extreme environments. Metals are used under challenging temperature, radiation, corrosion and several loading conditions (high strain-rate, fatigue, creep). Extreme environments strongly affect the mechanical responses that occur. Understanding the influence of extreme conditions on the mechanical behaviour of metals is a challenge in materials research that is of capital importance to ensure the safety and functionality of systems and applications.

For this Special Issue, we aim to include a collection of reviews and research articles on topics from the field of metal mechanical behaviour under extreme environments. This includes research related to the strength, ductility, and fracture of metals across a wide range of temperatures, from cryogenic to high, as well as studies on fracture and fatigue and strain-rate sensitivity at low to high strain rates associated with temperature and radiation. We welcome studies on the above subjects using either experimental or theoretical approaches.

Guest Editor

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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

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