

Special Issue

Deformation Behavior and Microstructure Evolution of Alloys

Message from the Guest Editor

The deformation behavior of metallic alloys and the accompanying evolution of their microstructure are fundamental aspects that dictate their mechanical performance across a variety of applications. From lightweight structural components in aerospace and automotive industries to high-temperature materials in energy and defense sectors, the ability to predict and control how alloys respond to external stresses is essential for designing materials that meet increasingly stringent performance demands.

This Special Issue of *Metals* seeks to consolidate cutting-edge research that explores the intricate relationship between deformation processes and microstructural evolution in alloys. By bringing together experimental studies, theoretical insights, and computational models, this collection will provide a holistic view of the current state of knowledge and highlight new directions for alloy development. The primary goal is to uncover the underlying mechanisms that govern alloy performance and pave the way for the design of next-generation materials with superior mechanical properties tailored for specific industrial applications.

Guest Editor

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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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