Special Issue

Advances in High-Performance Magnesium Alloys: Microstructure, Processing and Performance

Message from the Guest Editors

This Special Issue, entitled “Advances in High-Performance Magnesium Alloys: Microstructure, Processing and Performance,” aims to showcase cutting-edge research and comprehensive reviews addressing these critical challenges. We invite contributions focusing on novel alloy design strategies (e.g., rare-earth-containing systems and rare-earth-free systems), advanced processing techniques (including additive manufacturing, severe plastic deformation, thermomechanical processing, and novel heat treatments), and the precise characterization and control of microstructural features (such as grain refinement, texture modification, precipitation hardening, and phase distribution). Furthermore, we welcome studies elucidating the relationships between these microstructural characteristics and the resulting mechanical properties (strength, ductility, creep, and fatigue), functional properties (corrosion resistance, biocompatibility, and damping capacity), and performance under service conditions.

Guest Editors

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Deadline for manuscript submissions

31 January 2026

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/243625

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About the Journal

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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