

Special Issue

Design, Processing and Characterization of Advanced Metallic Materials

Message from the Guest Editor

Advanced metallic materials are engineered metals and alloys with superior mechanical, thermal, electrical, or functional properties achieved via novel compositions, microstructure control, and processing innovations. This field includes high-entropy alloys, superalloys, refractory and lightweight alloys (Al, Mg, Ti), functional materials (shape memory alloys, metallic glasses), advanced steels, metal matrix composites, and nanostructured metals—key to advancements in aerospace, energy, biomedical, and electronics industries. This Special Issue, *Design, Processing and Characterization of Advanced Metallic Materials*, presents interdisciplinary research at the forefront of materials science. Topics include: **Materials Design:** Computational (CALPHAD, machine learning) and experimental strategies for next-gen alloys. **Processing:** Techniques like additive manufacturing, SPD, and hybrid methods for enhanced properties. **Characterization:** In situ TEM, synchrotron XRD, 3D EBSD for mechanism insights. **Performance:** Corrosion resistance, thermal stability, and sustainability. We welcome original articles, reviews, and perspectives advancing metallic materials research.

Guest Editor

Prof. Dr. Liping Bian

College of Materials Science and Engineering, Taiyuan University of Technology, Taiyuan 030024, China

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

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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.

Editors-in-Chief

Prof. Dr. Hugo F. Lopez

Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

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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