

Special Issue

Structure and Properties of Refractory Medium/High-Entropy Alloys

Message from the Guest Editors

There is an urgent need for high-performance structural materials to withstand extreme conditions, as current materials fall short in meeting the advanced requirements of high-temperature applications. These applications span sectors such as ballistic impact resistance, aircraft engine components, and aerospace technologies. Research focuses on developing materials with superior mechanical strength, wear resistance, irradiation tolerance, and corrosion resistance under harsh environments.

Refractory Medium/High-Entropy Alloys have emerged as promising candidates due to their resistance to high-temperature damage. Studies show that certain MEAs and RHEAs combine high strength, toughness, and resistance to corrosion, irradiation, and extreme temperatures. Their performance can be enhanced with advanced fabrication techniques, such as additive manufacturing, 3D printing, and laser-plasma-driven routes.

This Special Issue will explore RHEAs and RMEAs for extreme environments involving high temperatures, pressures, corrosion, wear, impact, and irradiation. We invite research papers and reviews to accelerate the industrial application of these materials.

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Deadline for manuscript submissions

closed (25 May 2025)



Metals

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Impact Factor 2.5
CiteScore 5.3



mdpi.com/si/217027

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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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