Special Issue

Microstructure, Mechanical Properties and Manufacturing Techniques of Advanced High-Entropy Alloys

Message from the Guest Editor

High-entropy alloys (HEAs) are a new class of materials that have garnered significant attention due to their unique composition and superior properties. HEAs exhibit remarkable mechanical performance and are typically composed of multiple principal elements, including high strength, ductility, excellent corrosion resistance, impact resistance, oxidation resistance, and thermal stability. These characteristics make HEAs particularly promising for applications in various industrial fields, including aerospace, energy, and automotive sectors. This Special Issue welcomes original research manuscripts, review articles, and methodological contributions, particularly focusing on the following topics: Microstructural evolution and characterization of HEAs; The relationship between microstructure and mechanical performance, especially strength and ductility; Manufacturing and applications of HEA fibers; The influence of temperature and strain rate on the mechanical behavior of HEAs; Phase transformations and their effects on the performance of HEAs; Applications of HEAs in extreme environments; Advanced manufacturing techniques in HEA research.

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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