Special Issue

New Advances in High Entropy Alloys

Message from the Guest Editors

High-entropy alloys (HEAs) have emerged as a transformative class of materials characterized by their unique multi-principal-element compositions, which often lead to exceptional mechanical, thermal, and chemical properties. This Special Issue explores recent advances in HEA design, processing, characterization, and applications, with a focus on understanding their underlying atomic-scale mechanisms, phase stability, and performance in extreme environments. Contributions cover theoretical and experimental approaches to HEA development, including novel alloying strategies, additive manufacturing techniques, and the role of entropy in governing material properties. Special attention is given to the potential of HEAs in structural, aerospace, energy, and biomedical applications, while additional technological areas can also be included. By bringing together interdisciplinary research, this Special Issue aims to accelerate the discovery and deployment of HEAs in next-generation engineering solutions.

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Message from the Editor-in-Chief

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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