

Special Issue

Synthesis, Characterization and Applications of High-Entropy Alloys

Message from the Guest Editor

High-entropy alloys (HEAs) are a class of new multicomponent alloys with five or more components in equal or near-equal concentrations and have been investigated extensively since they were first described in 2004. Unlike conventional alloys that are normally based on a single host metal, the high entropy of mixing and disordered solution of several elements in HEAs competes with the enthalpy of phase formation. As a result, either single- or multi-phase HEAs can be produced. Resulting from the multi-element environment, slower diffusion rates, high friction forces on dislocations, and the propensity for twinning contribute to the excellent mechanical properties in HEAs.

The aim of this SI is to comprehensively understand the latest developments on the synthesis, characterization, and application of multicomponent HEAs. It is my pleasure to invite you to submit manuscripts on the subject of HEAs for this Special Issue.

- high-entropy alloys
- characterization
- microstructure
- mechanical properties
- thermodynamic properties
- thin films
- nanoparticles
- melting and casting
- mechanical alloying and milling
- additive manufacturing

Guest Editor

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Deadline for manuscript submissions

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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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