

Special Issue

Thermodynamics of High-Entropy Alloys

Message from the Guest Editor

High-entropy alloys (HEAs), a novel type of multi-principal alloys, have attracted increasing attention due to their high strength, decent ductility at extreme conditions (e.g., cryogenic temperature and high strain rate), good corrosion, and irradiation resistance. Essentially, these distinguished properties result from their unique microstructure, including severe lattice distortion, local chemical order, and complicated heterostructure. Thermodynamics analysis is an effective way of revealing the mechanisms for phase formation, predicting microstructure, and guiding alloy design. However, the complex multiple-principal components of HEAs challenge the establishment of thermodynamic models, thermodynamic databases, and phase diagrams. Thus, articles that highlight the recent advances and future directions of thermodynamics for HEAs are significant and meaningful. This Special Issue aims to report recent progress in the thermodynamics of HEAs, including but not limited to the development of thermodynamic parameters and models, the creation of phase diagrams, as well as the thermodynamical calculation of HEAs.

Guest Editor

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