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New Advances in High-Entropy Alloys

Guest Editor:

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Deadline for manuscript submissions:
closed (28 February 2019)

Message from the Guest Editor

Dear Colleagues,

High-entropy alloys (HEAs) are alloys with high-entropy of configuration in the liquid state, this high-entropy intend to make the disordered phases stable, such as random solid solution or amorphous phases. The first generation of HEAs is defined as alloys with more than five components with an equiatomic ratio and single phase, which include face centered cubic (FCC), body centered cubic (BCC), hexagonal close packed (HCP), and amorphous structured HEAs. The recent advances in HEAs mainly focus on the second generation of HEAs, e.g., the non-equiatomic ratio and dual phase HEAs, which include four kinds of HEAs: (1) eutectic HEAs, which have excellent casting properties; (2) precipitation hardening HEAs, which is potentially the next generation of superalloys; (3) phase transformation induced plasticity (TRIP) HEAs; and (4) ultrafine grain HEAs. HEAs potentially break the property limits of the traditional alloys.

This Special Issue specifically emphasizes research that addresses phase formation and alloys design, serration and noise behaviors, large fluctuation and collective phenomena, plastic flow, and flow units. We encourage submissions of the high-entropy films, high-entropy ceramics, etc.

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Guest Editor

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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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