

## Special Issue

# Synthesis and Applications of High-Entropy Nanomaterials

### Message from the Guest Editor

High-entropy alloys (HEAs) are near-equimolar alloys comprising five or more elements. In recent years, HEAs have been drawing attention from both theoretical and experimental perspectives, as the high degree of synergy therein leads to high entropy, lattice distortion, and the cocktail effect. Although the mechanical properties have been investigated, their application as functional materials, such as catalysts, has only recently been probed. However, grand challenges exist; (i) the controlled and efficient synthesis technique for targeted multi-elemental compositions; (ii) identification and understanding of the active sites through precise surface characterization; (iii) fundamental studies of surface dynamics under catalytic conditions. The data-driven strategy and high-throughput experiments are also desired to assist in further element optimization over high-dimensional composition space. This *Special Issue* is dedicated to providing the basis for designing high-entropy nanomaterials with diverse compositions and structures, also providing unprecedented opportunities for element selection for fabricating a desired catalyst for various applications/reactions.

### Guest Editor

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### Deadline for manuscript submissions

closed (20 October 2023)



## Materials

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### Message from the Editor-in-Chief

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