

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

Prof. Dr. Takeshi Fujita

School of Environmental Science and Engineering, Kochi University of Technology, Kami, Japan

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Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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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.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian

1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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