

Special Issue

High-Entropy Materials: Challenges and Prospects II

Message from the Guest Editors

As a family of newly-emerged structural materials, high-entropy alloys are drawing extensive attention from materials scientists. These alloys are of great interest, firstly because they bring about the possibility of developing a greater amount of alloy species than ever before. Secondly, many extraordinary mechanical properties are being uncovered in these alloys. From these perspectives, high-entropy alloys are promising for next-generation structural materials. Therefore, world-wide efforts have been devoted to various aspects of high-entropy alloys, including synthesizing alloys with different microstructures and properties, appreciating their physical-metallurgy principles and evaluating their mechanical properties. However, important challenges still exist, such as establishing sound metallurgy physics of high-entropy alloys, clarifying their deformation and strengthening mechanisms and understanding how and why they are distinct from conventional crystalline alloys. This Special Issue welcomes reviews and articles in physical metallurgy, microstructures and mechanical properties of high-entropy alloys, achieved either by experimental techniques or theoretical calculations.

Guest Editors

Dr. Weidong Li

Department of Materials Science and Engineering, University of Tennessee, Knoxville, TN 37996-2100, USA

Prof. Peter K. Liaw

Department of Materials Science and Engineering, University of Tennessee, Knoxville, TN 37996-2100, USA

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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Prof. Dr. Hugo F. Lopez

Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

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Beijing Advanced Innovation Center of Materials Genome Engineering, State Key Laboratory for Advanced Metals and Materials, University of Science and Technology Beijing, 30 Xueyuan Road, Beijing 100083, China

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