

Foreword

Symposium on High-Entropy Alloys

High-entropy alloys (HEAs) are multi-principal element solid-solution alloys whose configurational entropy is extraordinarily high. As proposed by Yeh et al. in 1995, HEAs contain at least five major elements in equimolar ratios or near equimolar ratios with a concentration range between 5 and 35 atomic percents (at. pct). HEAs have been reported to exhibit many promising properties, such as high strength, outstanding fracture and wear resistance, excellent high-temperature performance, and good fatigue, oxidation, and corrosion resistance. Therefore, HEAs may be particularly suitable for high-temperature applications where thermal stability, oxidation resistance, and high strength are required.

In order to strengthen the communication within the HEA community, a symposium on high-entropy alloys has been held successfully at The Minerals, Metals & Materials Society (TMS) Annual Meeting since 2013. The TMS Structural Materials Division and the TMS/The Materials Information Society (ASM International): Mechanical Behavior of Materials Committee and the TMS Electronic, Magnetic, and Photonic Materials Division: Alloy Phases Committee, kindly sponsored our high-entropy alloys symposium. The symposium on high-entropy alloys was held at the 2014 TMS Annual Meeting & Exhibition, San Antonio, TX. The topics of the symposium on high-entropy alloys involved a wide range of research areas, such as the alloy development and application, mechanical behavior, microstructure characterization, and simulations and modeling.

We would like to express our sincere appreciations to all the attendees for contributing to the success of our symposium on high-entropy alloys. We want to acknowledge the sponsorship from TMS and ASM International. All submitted manuscripts were subject to the standard, rigorous peer-review procedures of *Metallurgical and Materials Transactions A*. A total of three papers were accepted for publication in the current issue. We are very grateful to all the key readers, the reviewers, and the staff of *Metallurgical and Materials Transactions A*, especially Ms. Dora Moscatello, Ms. Mary Lynn Brown, and Prof. David E. Laughlin, for their kind help in the preparation and approval of the symposium publication.

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