

Foreword

Symposium on High-Entropy Alloys

High-entropy alloys (HEAs) are multi-principal element solid-solution alloys configurational entropy of which 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 ranging between 5 and 35 at.pct. HEAs have been reported to exhibit many promising properties, such as high strength, outstanding 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 HEAs was held successfully at The Minerals, Metals & Materials Society (TMS) Annual Meeting in 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 HEAs symposium. The symposium on HEAs was held at the 2013 TMS Annual Meeting & Exhibition, San Antonio, TX, March 3 to 7, 2013. 37 presentations, including 24 invited talks, were given during the meeting. The topics of the symposium on HEAs 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 appreciation to all the attendees for contributing to the success of our symposium on HEAs. 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 five 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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