Special Issue

Alloy Design

Message from the Guest Editors

The practice of alloy design has existed for thousands of years. The process of alloy design as applied currently covers many approaches, encompassing iterative "tinkering" with compositions, computational approaches using electronic structure or thermodynamic parameters, and many individual or in-house strategies. The breadth of strategies employed is reflective of the breadth in modern metallurgy. As well as the established alloy families, including extremely highly engineered examples such as TRIP/TWIP steels and nickel superalloys, recent years have seen the emergence of new concepts, including the ideas of bulk metallic glasses (BMGs) and High Entropy Alloys (HEAs). The successive untethering from the ideas of a defined structure and a dominant solvent that these systems have introduced has further widened the scope within which alloy design can operate, opening up further possibilities to familiar topics. This Special Issue of *Metals* will encompass all of these areas, giving a forum for reporting research on the development of new alloys, compositions, and treatments with the aim of improving the metallic materials available for any application.

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Message from the Editorial Board

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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