Special Issue

Super Magnesium Alloys

Message from the Guest Editor

Due to their inherently light weight, Mg alloys are considered one of the most attractive structural materials for mobile goods, such as personal vehicles and portable devices. However, industrially using Mg-based products in a variety of weight-sensitive components is still rather limited because commercial Mg alloys have several drawbacks, especially in strength, formability, and corrosion resistance.

Thus far, extensive efforts in alloy development have been made to cope with these challenges and widen the application fields for Mg alloys. For example, Mg alloy systems containing Ca, RE, or Sn as the primary solute have been developed to satisfy the industrial requirements for more enhanced creep resistance than conventionally available Mg alloys. Furthermore, additions of some RE elements or Ca have been found to be influential in enhancing the room temperature formability of Mg or its alloys.

The scope of this Special Issue includes recent advances in the development of novel Mg alloys with superior physical, mechanical, or anticorrosion properties to conventional Mg alloys.

Guest Editor

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Deadline for manuscript submissions

closed (31 March 2021)

Metals

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.3

mdpi.com/si/43368

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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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