Special Issue

Magnesium Alloys for Biomedical Applications

Message from the Guest Editors

Magnesium is of interest mainly because of its biocompatibility, moderate corrosion rate, and appropriate mechanical properties, when the right alloying system is used. The focus in the development of Magnesium alloys is on alloy design, alloy's fatigue and stress corrosion properties, deformability, moderate corrosion rate, and uniform corrosion morphology. The community is highly discussing the relation between Magnesium alloys' in vitro and in vivo properties, which would help to reduce animal testing and support simulations to pre-select alloys. The mechanical properties are usually described by tensile tests and hardness tests. Furthermore, fatigue and stress corrosion data are needed to get a full picture of stability over degradation time. Magnesium is known for pitting corrosion. Since corrosion pits cause increased stress intensity under mechanical loading and early failure of implants, special attention should be paid to a uniform corrosion morphology. The aim of this Special Issue on Biodegradable Magnesium is to explore and introduce new alloys to overcome the current limitations of Magnesium applications.

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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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