



Corrosion and Mechanical Properties of Mg Alloys for Biomedical Applications

Guest Editors:

Dr. Hamid Reza Bakhsheshi-Rad

1. Advanced Materials Research Center, Department of Materials Engineering, Najafabad Branch, Islamic Azad University, Najafabad, Iran
2. Faculty of Engineering, Universiti Teknologi Malaysia, Johor Bahru, Johor, Malaysia

Prof. Dr. Filippo Berto

Department of Chemical Engineering, Materials and Environment, Sapienza University of Rome, 00184 Rome, Italy

Deadline for manuscript submissions:

closed (30 November 2023)

Message from the Guest Editors

Dear Colleagues,

Mg, the lightest structural metal, has attracted the attention of researchers due to its excellent machinability, recyclability, electromagnetic shielding, damping response, specific mechanical characteristics and nutritional properties. Mg has fundamental characteristics that are similar to those of human bone, such as density and elastic modulus. Mg alloys have a high degradation rate and H₂ evolution in simulated body fluid (SBF), resulting in implant failure before the whole healing process. In addition, such an uncontrollable and rapid corrosion rate causes a major decrease in the mechanical properties of the bioimplants, resulting in premature failure. The most popular procedure to improve corrosion resistance in Mg is alloying, composite preparation and surface modification. This Special Issue, therefore, aims to present the latest research related to the creation and development of novel Mg-based alloy/composite and/or scaffolds with controllable corrosion/degradation rates for expanding their clinical and industrial applications.





an Open Access Journal by MDPI

Editors-in-Chief

Prof. Dr. Hugo F. Lopez

Department of Materials Science
and Engineering, College of
Engineering & Applied Science,
University of Wisconsin-
Milwaukee, 3200 N. Cramer
Street, Milwaukee, WI 53211, USA

Prof. Dr. Yong Zhang

Beijing Advanced Innovation
Center of Materials Genome
Engineering, State Key
Laboratory for Advanced Metals
and Materials, University of
Science and Technology Beijing,
30 Xueyuan Road, Beijing 100083,
China

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.

Author Benefits

Open Access: free for readers, with **article processing charges (APC)** paid by authors or their institutions.

High Visibility: indexed within **Scopus**, **SCIE (Web of Science)**, **Inspec**, **CAPLUS / SciFinder**, and **other databases**.

Journal Rank: JCR - Q2 (*Metallurgy & Metallurgical Engineering*) / CiteScore - Q1 (*Metals and Alloys*)

Contact Us

Metals Editorial Office
MDPI, St. Alban-Anlage 26
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/metals
metals@mdpi.com
[X@Metals_MDPI](https://twitter.com/X@Metals_MDPI)