materials

IMPACT FACTOR 3.4

Indexed in: PubMed

CITESCORE 5.2

an Open Access Journal by MDPI

Magnesium and Its Alloys as Biodegradable Implants

Guest Editors:

Dr. Mirco Peron
Department of Information Systems, Supply Chain Management & Decision Support, NEOMA Business School, 1 Rue du Maréchal Juin, 76130 Mont-Saint-Aignan, France

Dr. Bertolini Rachele
Department of Industrial Engineering, University of Padova, Padova, Italy

Deadline for manuscript submissions:
closed (10 October 2022)

Message from the Guest Editors

Recently, magnesium has gained increasing interest for temporary biomedical applications, such as fixators and vascular stents, due to its high biomechanical compatibility with human bones. Specifically, its elastic modulus compatible with that of natural bone minimizes the risk of stress shielding and its corrosion process does not release toxic products. However, the accelerated corrosion of pure Mg hampers its usability in clinical applications because mechanical failure of the implant is prone to occur before the tissue has recovered and, during corrosion, hydrogen gas is produced at rates beyond the level that bone tissue is able to accommodate, ultimately causing severe host tissue damage. To solve this limitation, researchers have investigated different solutions, such as the addition of alloying elements, microstructure modifications and surface modifications.

This Special Issue aims to present the latest innovative strategies to overcome the current limitations and their impacts on corrosion resistance (in vitro and/or in vivo), osseointegration properties, and mechanical properties, especially in the corrosive environment.

materials

IMPACT FACTOR 3.4 | Indexed in: PubMed | CITESCORE 5.2

an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.
Journal Rank: JCR - Q2 (*Metallurgy & Metallurgical Engineering*) / CiteScore - Q2 (*Condensed Matter Physics*)

Contact Us

Materials Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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

mdpi.com/journal/materials
materials@mdpi.com
𝕏@Materials_Mdpi