metals

an Open Access Journal by MDPI

IMPACT FACTOR 2.9

CITESCORE 4.4

Rare Earth Free Permanent Magnets

Guest Editor:

Dr. João Amaral
Department of Physics and CICECO–Aveiro Institute of Materials, University of Aveiro, 3810-193 Aveiro, Portugal

Deadline for manuscript submissions:
closed (30 September 2019)

Message from the Guest Editor

Permanent magnets (PMs) have become our invisible companions, particularly in electrical motors, hybrid and electric vehicles, (aero) generators, transformers, and all sorts of consumer electronics. High-performance rare-earth (RE) based magnets are nowadays facing a world-wide resource problem. With the considerable increase of RE price in the last decade, the Nd-Fe-B PMs have been classified as 'critical' materials in supply risk. Therefore, a renewed interest in RE-free PMs resurfaced.

Currently, several strategies to develop new, competitive RE-free PMs are put forward. One is to take advantage of Fe-Co soft magnetic alloy. Recent works focused on increasing its coercivity either by distorting the atomic structure via chemical substitution, strain or epitaxy, or by exploring composites where the added hard phase pins the soft phase at nanoscale. Computational techniques, such as density functional theory, Monte Carlo and micromagnetism simulations, are also highlighted. We invite all researchers in the challenging area to contribute to the Special Issue "Rare Earth Free Permanent Magnets" in Metals.

metals

IMPACT FACTOR 2.9

CITESCORE 4.4

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 66
4052 Basel, Switzerland

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

mdpi.com/journal/metals
metals@mdpi.com
𝕏@Metals_MDPI