

Special Issue

Smart Coatings for the Corrosion Protection of Alloys

Message from the Guest Editors

Corrosion of alloys is a significant issue that leads to substantial economic losses and performance degradation in various industries. Smart coatings have emerged as a promising solution in the field of surface engineering for the corrosion protection of alloys. These coatings possess unique properties that enable them to respond intelligently to environmental changes, thereby providing enhanced and long-term protection for alloys used in critical applications such as in the automotive, aerospace, and marine industries. The corrosion process of alloys is complex and influenced by multiple factors including temperature, humidity, chemical species in the environment, and mechanical stress. Smart coatings address these challenges by incorporating advanced materials and functional components. Their design and development require an in-depth understanding and integration of knowledge from multiple disciplines including materials science, chemistry, physics, and electrical engineering, spanning from the micro- to the macro-scale.

Guest Editors

Dr. Jibo Huang

School of Materials Science and Engineering, South China University of Technology, Guangzhou 510640, China

Dr. Huanjie Fang

Key Laboratory of Advanced Marine Materials, Ningbo Institute of Materials Technology and Engineering of the Chinese Academy of Sciences, No.1219 Zhongguan West Road, Ningbo 315201, China

Deadline for manuscript submissions

20 December 2025



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



mdpi.com/si/222459

Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

[mdpi.com/journal/
materials](https://mdpi.com/journal/materials)





Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



[mdpi.com/journal/
materials](https://mdpi.com/journal/materials)



About the Journal

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.

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

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 and Metallurgical Engineering) /
CiteScore - Q1 (Condensed Matter Physics)