

Special Issue

Advancements in the Nanotribology of Two-Dimensional Layered Materials

Message from the Guest Editors

This Special Issue aims to cover the latest developments in the nanotribological characterization of 2D layered materials using FFM. **Original research articles and reviews are welcome. Research areas may include (but are not limited to) the following:**

- Nanotribology of 2D materials, as investigated by FFM and colloidal probe FFM techniques;
- FFM characterization of 2D materials heterostructures, including friction control by strain effects and friction of Moiré superstructures;
- Functionalization of AFM probes with 2D materials to systematically characterize the nanotribology of homo- and hetero-junctions;
- Nanoscale/mesoscale friction explored through the FFM-assisted manipulation of nanomaterials and micro-objects on 2D materials platforms;
- Electronic control of friction, e.g., by tuning surface trapped charges, doping charge levels, or strain levels in nanoscale/mesoscale contact junctions based on 2D materials.
- Impact of structural or chemical defects on the nanotribology of 2D materials;
- Nanotribology of solution-processed single-layer and few-layer 2D flakes.

I look forward to receiving your contributions.

Guest Editors

Dr. Renato Buzio

Italian National Research Council|CNR, Institute for Superconductors, Oxides and Other Innovative Materials and Devices SPIN, 16152 Genoa, Italy

Prof. Dr. Enrico Gnecco

Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, Krakow, Poland

Deadline for manuscript submissions

20 November 2026



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



mdpi.com/si/236044

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 Editorial Board

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.

Editors-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

Prof. Dr. Yuguang Ma

State Key Laboratory of Luminescent Materials and Devices, South China University of Technology, Guangzhou 510640, China

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)