



## Preparation and Characterization of Nanocomposite Coatings of Materials

Guest Editor:

**Dr. Shuaijun Pan**

Department of Chemical  
Engineering, University of  
Melbourne, Parkville 3010,  
Australia

Deadline for manuscript  
submissions:

**closed (20 September 2023)**

### Message from the Guest Editor

The main purpose of coatings is surface reinforcement, from mechanical, chemical, performance aspects. For structural materials, anticorrosive coating is usually required while maintaining mechanical performance. For surface engineering of small objects such as NPs, interfacial selectivity is usually targeted via nanocomposite coatings.

The development of advanced coatings requires in-depth understandings of the interplay between microstructures and macroscopic properties, including long-term performance when subjected to relevant surrounding environments. The terminal applications of nanocomposite coatings exist in diverse fields, such as advanced manufacturing, chemical engineering, nanomedicine, catalysis, energy conversions, oil-water separations and self-cleaning.

This SI will cover various interesting topics in nanocomposite coatings and its interdisciplinary fields, such as preparation strategies and pathways, understanding of interfacial adhesion and cohesion mechanisms, systematic characterization techniques, interplay of individual components within the coating composite, instrumental techniques, molecular dynamics, perspectives and accurate tuning of surface properties.





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 - Q1 (Metallurgy and Metallurgical Engineering) / CiteScore - Q2 (*Condensed Matter Physics*)

## Contact Us

Materials Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/materials](http://mdpi.com/journal/materials)  
[materials@mdpi.com](mailto:materials@mdpi.com)  
[X@Materials\\_Mdpi](https://twitter.com/Materials_Mdpi)