Special Issue

Preparation and Microstructural Analysis of Polymer-Based Nanocomposites

Message from the Guest Editor

The exploration and application of nanomaterials to customize the properties of various polymer types, whether conventional or bio-based, have yielded highly promising outcomes. These advancements encompass enhanced mechanical properties, improved electrical conductivity, captivating optical properties, antimicrobial capabilities, and more, where these properties are typically unattainable by the pristine polymer alone. The transformative potential of nanomaterials covers a wide spectrum, encompassing metallic and ceramic nanoparticles, carbon-based wonders such as carbon nanotubes and graphene, and bio-inspired nanomaterials such as chitosan nanoparticles and cellulose nanocrystals. This diverse repertoire of nanomaterials propels innovations, driving significant advancements in the development of polymer nanocomposites across various advanced applications. The interdependence between microstructure morphology and the final properties of the developed polymer nanocomposites is significant. This Special Issue focuses on the examination and study of microstructure tailored to both macro and nano levels in prepared polymer nanocomposites for achieving desired end-properties.

Guest Editor

Dr. Boon Peng Chang

School of Materials Science and Engineering (MSE), Nanyang Technological University (NTU), 50 Nanyang Avenue, Singapore 639798, Singapore

Deadline for manuscript submissions

20 August 2025

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/194450

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

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

MDPI

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)