

Special Issue

Functional Gels: Synthesis, Characterization, and Applications

Message from the Guest Editors

Functional gels are a kind of soft material with dynamic characteristics, with wideranging application potential in many scientific and engineering fields. Their unique three-dimensional networks, high solvent content, and tunable physicochemical properties make them an ideal candidate for designing advanced intelligent systems. This Special Issue aims to present cutting-edge research in this rapidly developing field. We invite contributions that focus on innovative synthetic methodologies covering precision polymerization, supramolecular chemistry, biofabrication, additive manufacturing, and other technologies to effectively regulate gel structure and function. We particularly encourage research exploring advanced characterization techniques, such as multi-scale rheology and scattering methods, which are vital for elucidating the complex structure–property relationships in gel behavior. We also welcome innovative research on the practical applications of functional gels, including advanced sensing technologies, intelligent lubricating materials (gel-based lubricants), smart responsive systems, and next-generation biological dressings and wound care solutions.

Guest Editors

Dr. Zhangpeng Li

State Key Laboratory of Solid Lubrication, Lanzhou Institute of Chemical Physics, Chinese Academy of Sciences, Lanzhou 730000, China

Dr. Tiandi Chen

Nanotechnology Center, School of Fashion and Textiles, The Hong Kong Polytechnic University, Hong Kong 999077, China

Deadline for manuscript submissions

20 September 2026



Materials

an Open Access Journal
by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed



mdpi.com/si/253168

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)