Special Issue

Heterogeneous Catalyst Materials: Research Advances and Characterization Techniques

Message from the Guest Editors

This Special Issue focuses on recent advancements in heterogeneous catalytic materials tailored for chemical, petrochemical, and environmental applications. Particular attention is awarded to the rational design, synthesis, and performance evaluation of advanced catalysts such as transition metal oxides, mixed-metal spinels, supported solid acids, and magnetically recoverable nanomaterials. Contributions focusing on reaction kinetics, rate-determining steps, mass transfer limitations, and thermodynamic feasibility are strongly encouraged, particularly when coupled with process modeling, reaction mechanism elucidation, or optimization strategies such as Design of Experiments (DoE) approaches and computational simulations. By bridging materials science, catalysis, and chemical engineering, this Special Issue aims to offer a cutting-edge platform for developing efficient, selective, and sustainable catalytic systems that address the current industrial and environmental challenges.

Guest Editors

Dr. Rami Doukeh

Department of Well Drilling, Extraction and Transport of Hydrocarbons, Petroleum-Gas University of Ploiesti, 39 Bucharest Blvd., 100680 Ploiesti, Romania

Dr. Ionut Banu

Department of Chemical and Biochemical Engineering, Polytechnic University of Bucharest, Bucharest, Romania

Deadline for manuscript submissions

20 February 2026

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/248373

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)