Special Issue

Catalysis for Biomass Materials Conversion

Message from the Guest Editor

This Special Issue focuses on cutting-edge science and technologies in biomass catalytic conversion, covering the following key areas:

- Catalyst Design: Development and mechanistic studies of novel homogeneous/heterogeneous catalysts (e.g., metal nanoparticles, enzymes, acid/base materials).
- Conversion Pathways: Optimization of catalytic reactions for biomass components (e.g., cellulose, lignin, oils), including depolymerization, hydrogenation, oxidation, and reforming.
- Process Integration: Coupling strategies combining catalysis with thermochemical, electrochemical, or biotechnological approaches, such as photocatalytic hydrogen production from biomass and integrated biorefining.
- Sustainability Assessment: Lifecycle analysis and techno-economic feasibility studies of catalytic processes.

In this Special Issue, original research articles and reviews are welcome, and research areas may include, but are not limited to, all of the abovelisted topics.

Guest Editor

Prof. Dr. Haoran Wu
School of Chemical Engineering, Zhengzhou University, Zhengzhou 450001, China

Deadline for manuscript submissions

20 December 2025

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/241295

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)