

Special Issue

Innovative Approaches in Asphalt Binder Modification and Performance

Message from the Guest Editors

Asphalt binders are essential to the performance and longevity of road pavements, yet traditional binders face challenges such as aging, temperature fluctuations, and increasing traffic loads. To overcome these limitations, innovative approaches in binder modification, using polymers, nanomaterials, and bio-based additives, have emerged, significantly improving the mechanical and rheological properties of asphalt. In parallel, sustainable practices in binder modification are gaining attention. Researchers are exploring the use of recycled materials and environmentally friendly additives to reduce the ecological impact of pavement construction without compromising performance. This Special Issue invites original research and reviews on innovative approaches in asphalt binder modification and performance, including the following topics:

- Novel modifiers for asphalt binders;
- Advanced technologies in binder modification;
- Performance evaluation and testing methods;
- Durability and aging studies;
- Sustainable approaches in binder modification.

We look forward to your valuable contributions to advance pavement engineering and infrastructure sustainability.

Guest Editors

Dr. Yong Wen

School of Highway, Chang'an University, Xi'an 710064, China

Dr. Xiaokang Zhao

School of Highway, Chang'an University, Xi'an 710064, 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/222242

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 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)