Special Issue

Advanced Composite Materials: Innovative Molecular Design, Cross-Scale Materials Characterization and Integrated Engineering Applications

Message from the Guest Editor

Advanced composite materials (ACMs) with a cross-scale ranging from the molecular level to the macro level have emerged as a cornerstone of the vast modern material system. Over the past decade, major breakthroughs for ACM have been achieved in terms of their molecular design, characterization techniques, and practical applications, with their use having already enabled significant advancements in the fields of aerospace engineering, automotive industries, energy management, biomedicine, and sustainable infrastructures. Despite such encouraging progress, several formidable challenges persist, particularly regarding molecular design, scalable manufacturing, long-term durability, and environmental sustainability.

With a focus on molecular sciences, this Special Issue aims to consolidate the latest research on the molecular design, advanced manufacturing techniques, characterization methods, and broad applications of ACM. We welcome the submission of original research articles and reviews that address both fundamental scientific questions and practical engineering challenges, with a special focus on interdisciplinary innovation.

Guest Editor

Dr. Zhengzhi Mu

Key Laboratory of Bionic Engineering, Ministry of Education, Jilin University, Changchun 130022, China

Deadline for manuscript submissions

30 April 2026



International Journal of Molecular Sciences

an Open Access Journal by MDPI

Impact Factor 4.9 CiteScore 9.0 Indexed in PubMed



mdpi.com/si/256836

International Journal of Molecular Sciences Editorial Office MDPI, Grosspeteranlage 5 4052 Basel, Switzerland Tel: +41 61 683 77 34 ijms@mdpi.com

mdpi.com/journal/ ijms





International Journal of Molecular Sciences

an Open Access Journal by MDPI

Impact Factor 4.9 CiteScore 9.0 Indexed in PubMed





Message from the Editor-in-Chief

The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of Odontostomatologic and Specialized Clinical Sciences, Sez-Biochimica, Faculty of Medicine, Università Politecnica delle Marche, Via Ranieri 65, 60100 Ancona, Italy

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, MEDLINE, Embase, CAPlus / SciFinder, and other databases.

Journal Rank:

JCR - Q1 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Organic Chemistry)

