

## 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.

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### Guest Editor

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## International Journal of Molecular Sciences

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### Message from the Editor-in-Chief

The *International Journal of Molecular Sciences (IJMS)* 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, and molecular biophysics. *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.

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