

## Special Issue

# Graphene-Based Materials and Applications

### Message from the Guest Editors

Graphene's two-dimensional planar structure with atomic-layer thickness and unique physical and chemical properties endows graphene with various functions. The few-layer stacking, rotational misalignment, and curled folding of graphene all significantly alter its functions, while heteroatom doping, designable pores, selective edge structures, and grain boundary misalignment often confer special properties and applications to graphene.

Graphene can be specifically optimized for performance in practical use through chemical modification, structural optimization, and multi-component composites, thus playing an important role in secondary batteries, supercapacitors, solar energy utilization, and biosensing.

This Special Issue aims to capture the latest advances in graphene-based materials and applications and discuss current challenges. The topics of interest for this Special Issue include but are not limited to the following:

- Synthesis and characterization techniques;
- Controllable regulation of structure and properties;
- New energy conversion and storage;
- Challenges in the industrialization.

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### Guest Editors

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### Deadline for manuscript submissions

closed (10 July 2025)



## Crystals

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## About the Journal

### Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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### Editor-in-Chief

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