

Special Issue

Graphene-Based Nanocomposites

Message from the Guest Editor

Graphene Nanocomposites: Molecular Engineering for Advanced Technologies

Graphene-based nanocomposites (Gr-NCs) combine graphene's unmatched conductivity, transparency, and strength with tailored nanomaterials to revolutionize biosensors, catalysts, and optoelectronics. Molecular design of secondary components (e.g., biomolecules, polymers, 2D materials) enables programmable chemo-selectivity, catalysis, and optical control while optimizing scalable fabrication. This Special Issue seeks studies on molecular design principles across Gr-NC architectures:

- 0D: Nanoparticles, protein assemblies
- 1D: Polymers, nanotubes
- 2D: COFs, MXenes, hBN

We prioritize research revealing structure–property relationships to advance heterostructures, biomimetic interfaces, and high-performance devices.

Contributions spanning synthesis, modeling, and applications are encouraged.

Guest Editor

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