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Application of Functionalized Two-Dimensional Nanomaterials in Energy Storage and Catalysis

Guest Editor:

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Message from the Guest Editor

Graphene has an extreme attraction in the application fields of energy storage and catalysis owing to its exceptionally physical and chemical properties. Nevertheless, its weak electrochemical activity, poor hydrophobicity, easy agglomeration, and difficult processing greatly limit the application of graphene. Therefore, functional modifications and self-assembly of graphene can effectively modify the surface physical and chemical properties of graphene and avoid the agglomeration of graphene, thus greatly expanding their practical application in energy storage and catalysis.

The research topics of the present Special Issue include but are not limited to the following subjects:

- Design and synthesis of functionalized graphene and its composites;
- Surface modifications and functionalization procedures of graphene;
- Self-assembly of functionalized graphene;
- Application of functionalized graphene in advanced energy storage and catalysis (e.g. rechargeable batteries, supercapacitors);
- Functionalized graphene-based composites in energy storage and catalysis.

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Special Issue



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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal-organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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