Special Issue

Recent Progress in Electronic Phenomena in Two-Dimensional Materials

Message from the Guest Editors

Two-dimensional (2D) materials, such as graphene, transition metal dichalcogenides, and van der Waals heterostructures, are central to nanoscience and next-generation electronics due to their unique electronic properties. This Special Issue of *Nanomaterials* invites high-quality original research and review papers on electronic processes, interface phenomena, and functional devices based on 2D materials. We focus on synthesis and fabrication methods (e.g., CVD, MBE, solution-based synthesis, exfoliation), defect engineering, and device applications to bridge fundamental understanding with technological innovation. We encourage submissions elucidating structure-property relationships, charge transport, interface physics, and emerging device concepts (e.g., memristive devices, neuromorphic computing). Topics include material growth, band engineering, contact resistance, reliability, and advanced characterization techniques. This Special Issue aims to foster interdisciplinary exchange, advancing fundamental understanding and stimulating innovation in synthesis, characterization, and theoretical approaches for 2D electronics.

Guest Editors

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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. We are proud of our increasing impact factor and ability to provide rapid decisions to authors.

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