



Theoretical and Experimental Investigations on Graphitic Carbon Nitrides

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Message from the Guest Editors

2D and other carbon nitrides are the subject of intense research, with diverse applications ranging from photonics, catalysts, and biosensors, to gas storage, separation, and energy technologies. The carbon nitride family of materials is broad and diverse, including polymeric to nanocrystalline polyheptazine chains and layers, nitrogen doped graphene, 3D architectures, and crystalline 2D materials. These N-rich materials show a wide range of structure-dependent properties and functionality that can be tuned through doping and structural control, useful for incorporation into devices for a wide range of applications based on readily available chemical precursors. Understanding the structure–properties–function of these complex systems involves significant experimental and computational challenges. This Special Issue of *Nanomaterials* is a celebration of the field, bringing together theoretical and experimental works at the frontier of carbon nitride research. We will cover the synthesis, processing, and assembly of carbon nitrides, along with building an understanding of their exceptional properties.





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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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