Special Issue

Carbon Nanomaterials for Photonics and Optoelectronics

Message from the Guest Editor

Carbon-based nanomaterials, including graphene, carbon nanotubes (CNTs), graphene oxide (GO), fullerenes, and carbon quantum dots, have garnered significant attention for their unique electronic, optical, and mechanical properties, making them highly attractive for photonics and optoelectronics applications. In recent decades, substantial progress has been made toward high-performance light-emitting devices, photodetectors, and solar cells. Research efforts have focused on improving material quality and doping techniques, integrating optical microstructures, and designing new device architectures. Additionally, novel devices and optoelectronic systems have emerged, including skin-level applications, terahertz and single-photon sources, high-speed optical switches and modulators, and infrared photodetectors. This Special Issue of *Nanomaterials* aims to present the current state of the art in the use of carbon-based nanomaterials in photonics and optoelectronics. We invite original research articles and review articles that address recent advancements in carbon-based photonics and optoelectronics.

Guest Editor

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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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