

Special Issue

Fluorescent Quantum Dot Nanomaterials

Message from the Guest Editors

Photoluminescent carbon quantum dots have excellent optical properties, good biocompatibility, high chemical stability as well as low toxicity, which are extensively applied in bioimaging, optoelectronics, photocatalysis and solar energy harvesting. Great efforts have been exerted on the preparation of carbon quantum dots from a variety of carbon precursors by various methods, such as arc discharge, electrochemical oxidation, combustion, thermal decomposition or oxidation, and microwave-assisted pyrolysis. However, most of these routes suffer from expensive equipment, harsh synthetic conditions, and tedious processes, leading to manufacturing difficulties and high costs for large-scale production. Moreover, the resultant carbon quantum dots usually show low photoluminescence quantum yields, which inhibits their widespread use. It is critical to search for new carbon sources to synthesize carbon quantum dots with high photoluminescence for application in various fields. The Special Issue is aimed at presenting the current state-of-the-art in the use of quantum dots as fluorescent materials in bioimaging, optoelectronics, photocatalysis and solar energy harvesting.

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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.

Editor-in-Chief

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