Special Issue

Carbon Dots: Preparation, Properties and Applications

Message from the Guest Editor

Carbon dots (CDs) have garnered significant attention due to their exceptional optical properties, biocompatibility, and versatile surface chemistry. This Special Issue focuses on the synthesis, functionalization, and agricultural applications of CDs, particularly their role in enhancing crop productivity, stress resistance, and sustainable farming practices.
Scope and Topics of Interest:

- Tunable optical properties of CDs, including fluorescence, photoluminescence, and light-harvesting capabilities for agricultural applications.
- Surface modification of CDs with bioactive molecules (e.g., nutrients, plant growth regulators, pesticides) to improve their bioactivity and targeted delivery in crops.
- Mechanistic insights into how CDs interact with plants at cellular and molecular levels, influencing growth, photosynthesis, and stress tolerance.

This Special Issue aims to compile cutting-edge research on the design, functionalization, and practical deployment of CDs in agriculture, bridging the gap between nanotechnology and crop science. We welcome original research articles, reviews, and perspectives that explore the potential of CDs as next-generation agro-nanomaterials.

Guest Editor

Dr. Hao Li
Research Institute of Smart Agriculture, Yangzhou University, Yangzhou 225009, China

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Nanomaterials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
nanomaterials@mdpi.com

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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

Prof. Dr. Eugenia Valsami-Jones
School of Geography, Earth and Environmental Science, University of Birmingham, Birmingham B15 2TT, UK

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