

## Special Issue

# Quantum Dots Enabling Advanced Quantum Sensing, Photodetector and Photovoltaic Technologies

### Message from the Guest Editor

Quantum dots (QDs) have become one of the most versatile nanomaterial platforms, enabling precise control of optical and electronic properties through quantum confinement and compositional engineering. Since their discovery in the 1980s, QDs have transformed diverse fields, including optoelectronics, displays, and bioimaging. More recently, their tunable bandgap, strong light–matter coupling, and flexible surface chemistry have positioned them at the forefront of *quantum sensing*, *high-performance photodetection*, and *advanced photovoltaic conversion*. This Special Issue, entitled “*Quantum Dots Enabling Advanced Quantum Sensing, Photodetector and Photovoltaic Technologies*,” will provide a multidisciplinary platform that connects material innovation with device functionality. Potential topics include QD synthesis, surface passivation, heterostructure design, and their integration into sensing, detection, and solar-energy systems. We invite **original research articles**, **communications**, and **review papers** that address QD-related materials, mechanisms, or device demonstrations. Interdisciplinary studies combining QDs with perovskite, organic, or 2D materials are particularly welcome.

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### Guest Editor

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### Deadline for manuscript submissions

30 June 2026



## Nanomaterials

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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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### Editor-in-Chief

Prof. Dr. Eugenia Valsami-Jones

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