



materials

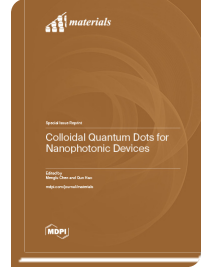


Special Issue Reprint

Colloidal Quantum Dots for Nanophotonic Devices

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Colloidal quantum dots (CQDs) have unique advantages on wide tunability of visible-to-infrared emission wavelength and low-cost solution-processibility. Therefore, they have become an important class of materials with great potential for applications such as biological medicine, optoelectronics, and quantum information. The performance of CQD-based photovoltaic and light-emitting devices has become competitive with other state-of-the-art materials. Benefiting from the advantage of compatibility with silicon-based readout-integrated circuits through solution processing, narrow-band semiconductor CQDs also hold unique promise for near- and mid-infrared technologies, with few semiconductor materials available. Thus, new and in-depth insights into CQD growth, chemical transformations, and physical properties would benefit not only the purely fundamental side but also commercialization. This Special Issue, “Colloidal Quantum Dots for Nanophotonic Devices”, presents recent and CQD-related information from CQD materials chemistry and characterization to processing and device fabrication. This Special Issue contains ten articles, including seven research articles and three review articles.



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