SEMICONDUCTOR NANOCRYSTALS AS BUILDING BLOCKS OF HYBRID FUNCTIONAL STRUCTURES

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Abstract
Semiconductor nanocrystals of essentially every composition can nowadays be synthesized in large quantities by inexpensive and versatile solution based approaches. They are attractive for use as building blocks in different functional nanostructures. We provide an overview of strongly emissive semiconductor nanocrystals synthesized in our labs and demonstrate several approaches for nanocrystal’s assembly. Advanced optical spectroscopy provides important insights into fundamental photophysical properties of semiconductor nanostructures. Different application aspects of functional structures based on semiconductor nanocrystals ranging from energy transfer structures to biological markers will be discussed.

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