

Rational Synthesis and Processing of High Quality Nanocrystals

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High quality nanocrystals must be nearly monodisperse in size and shape because of their size dependent properties. A lack of fundamental knowledge of crystal growth makes this as a challenge task. To solve this problem, growth mechanisms of colloidal nanocrystals have been extensively studied, which has helped the development of synthetic chemistry of these unique materials based on green chemistry principles. Processing of high quality nanocrystals depends on the understanding of ligand chemistry of nanocrystals, which will also be discussed. Complex nanocrystals grown by solution epitaxy and applications of various colloidal nanocrystals will also be briefed.

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