

**【NS-07】**

**Synthesis and characterization of monodisperse  
nanocrystals of transition metals, oxides, and  
sulfides**

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We developed a new generalized synthetic procedure to produce monodisperse nanocrystals of transition metals and oxides without a size selection process. Highly-crystalline and monodisperse metal nanocrystals were synthesized by the thermal decomposition of inorganic precursors in the presence of surfactant. These metal nanocrystals were transformed to the nanocrystals of the corresponding metal oxides. Particle size can be varied by controlling the experimental parameters. We also synthesized various anisotropic non-spherical oxide nanocrystals. Nanowires of maghemite, titania, and zinc oxide were synthesized and their physical properties will be discussed. Synthesis of monodisperse nanocrystals of metal sulfides will be also discussed.