

The Effects of Surface Ligands on the Zinc Chalcogenide Nanocrystals Synthesized from an Aerosol Flow System

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Zinc chalcogenide nanocrystals were successfully synthesized from an ultrasonic-assisted aerosol flow system using a surfactant/solvent system of trioctylphosphine (TOP)/1-octadecene (ODE). The colloidal zinc chalcogenide nanocrystals were synthesized with zinc oxide (ZnO) as the Zn precursor and TOPS, TOPSe, and TOPTe as the S, Se, and Te source, respectively. We have systematically investigated the effects of surface ligands on the control of the crystal structures and optical properties in the aerosol system.