

Preparation and Characterization of Colloidal ZnO Particle by Sol-Gel Process

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Colloidal ZnO particles with narrow size distribution were prepared via a sol-gel process by base-catalyzed hydrolysis of zinc nitrate. The size of these ZnO particles were in the nanosize and their physical shape depends on HPC as a dispersing agent. Nanosized ZnO particles were also obtained by precipitation method based on zinc-2-ethylhexanoate. The precipitates were characterized by XRD, BET, TEM, FE-SEM, DLS and ELS. The ZnO colloids, i.e. the aggregates tend to self-assemble into well-ordered hexagonal close-packed structures. As a result ZnO nanoparticles with an average diameter was nearly 40 nm and the size distribution was narrowed.