

Sonochemical Synthesis and Characterization of ZnO Porous/Hollow Spheres

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ZnO is an important material in the applications of dye-sensitized solar cells and photocatalyst because of its wide band gap and high electron mobility. ZnO porous/hollow spheres with diameter of 300 nm consisting of ZnO nanoparticles with a diameter of approximately 15 nm have been successfully prepared by a facile and rapid sonochemical process. The main advantages of this sonochemical process are simple, rapid, and excellent reproducibility. The ZnO spheres were synthesized for various process variables and were characterized by XRD, SEM, TEM measurements in order to elucidate the particle growth mechanism.