Synthesis and characterization and its conversion into zinc oxide nanoparticles via thiourea by solution process

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synthesis of tiny spherical shaped zinc oxide nanoparticles was successfully achieved via thermal annealing of as grown complex of zinc acetate di hydrate (Zn(CH3COO)2.2H2O) and thiourea (NH2CSNH2) at a temperature of about ~90ºC and reflux for 12 hours by the solution process. After refluxing the dark yellow powder sample was annealed in air for two hours at four different temperatures i.e., 300,500,700 and 900ºC.After annealing the dark yellow powder of zinc oxide changes into light yellow color. The morphological observation of obtained powder was done by the FESEM (field emission electron microscopy)and TEM (transmission electron microscopy) reveals that the obtained powder are in nanosized with the about ~50nm and its spherical shaped. The crystallinity of the product was characterized by the X-ray diffract meter, the composition analysis was done by the FTIR measurements.It shows a characteristic peak of zinc oxide at 523 cm-1.