Synthesis and Characterization of TiO2 nanoparticle by Sol-Gel and Hydrothermal Processing

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A titanium dioxide sol with narrow particle size distribution was synthesized using TiCl4 as a starting material. The resulting sol was subjected to hydrothermal processing at a reaction temperature of 95°C for 20 min and dried at 80°C for 24 h. X-ray and TEM were used to characterizing the synthesized sol and particles. The average size and size distribution of the synthesized sol and particles were 5-15nm and narrow respectively.

Keywords: TiO2, nanoparticle, Sol-Gel, Hydrothermal Processing