

Synthesis of Spherical TiO₂ Nanoparticles with Hierarchical Mesopores for Adsorption and Photocatalysis

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TiO₂ spherical particles were prepared using hydrothermal reaction at different temperatures of 110, 150, 190 °C for 5 h. The TiO₂ samples were characterized by BET, XRD and SEM surface area analysis. Specific surface areas and particle sizes are in the range of 148 ~ 240 m²/g and 323 - 450 nm, composed of tiny nanoparticles with a size of 5 ~ 7 nm [1,2]. It was found that photocatalytic degradation of methylene blue is highly sensitive to the influence of particle size on the adsorption and photocatalysis.