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Synthesis of TiO2 Nanoparticles by Sol-Gel and Sonochemical Combination

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Abstract : Nanocrystalline TiO₂ particles were successfully synthesized via sol-gel and sonochemical combination using titanium tetraisopropoxide as a precursor at lower temperature for a short time. The effect of the reaction parameters (hydrolysis media, acid media, and reaction temperatures) on the synthesis of TiO₂ particles were investigated in the present study. Characterizations of synthesized samples were prepared by X-ray diffraction (XRD) analysis. It was shown that the reaction parameters played a significant role in the synthesis of TiO₂ particles.

Keywords: crystalline TiO2, sonochemical mechanism, sol-gel reaction, XRD

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