Synthesis and characterization of zirconia doped nano titana by sol-gel method

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Nanosized titania has received much research attention because of its unique physico-chemical properties in the application of pigments, cosmetics, fine ceramics, photocatalysts for environmental purification, catalyst supports and dielectric materials. Doping of TiO_2 with transition elements produces crystal defects and surface modifications, which can change its properties. Recently, sol-gel method is proved to be a novel technique for the preparation of nanocrystalline TiO_2. Zr^{4+} doped nano titania was prepared by sol-gel method using titanium isopropoxide and zirconium nitrate as precursors. The materials were characterized by XRD, BET, FT-IR, and TEM techniques.