

## Flame Synthesis of Nanostructured TiO<sub>2</sub> Thin Films

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We prepared titania thin films via the pyrolysis of titanium tetra-isopropoxide (TTIP) precursor by using aerosol flame deposition process. We analyzed the specific surface area, primary and secondary particle sizes, crystal structure, thin film morphology and thickness by Brunauer-Emmett-Teller method, electrophoretic light scattering, X-ray diffraction and scanning electron microscopy, respectively. An understanding of the various process parameters, such as the carrier gas flow rate and total gas flow rate through the center tube, that affects the particle size of as-deposited TiO<sub>2</sub> thin film is established. The effect of deposition height on deposition area was also investigated. As N<sub>2</sub> carrier gas flow rate to bubbler increases, the primary and secondary particle size increases, but decreases with increasing total gas flow rate through the central tube. The shorter the deposition height is, the smaller deposition area is, but the thin film is thicker in the central region.