

## **PHASE CONTROLLING IN THE SYNTHESIS OF TiO<sub>2</sub> NANOSTRUCTURES BY LITTLE VARIATION OF REACTION CONDITIONS**

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### **ABSTRACT**

We have reported here, the formation of spherical shaped anatase (5-20 nm) and flower like rutile (100nm-400nm) TiO<sub>2</sub> nanostructure by hydrolysis of TiCl<sub>3</sub> in semi-aqueous reaction medium and drying and calcination of obtained sol. Two different structures have been obtained by little variation of reaction conditions namely using and not using H<sub>2</sub>O<sub>2</sub>. Structure and size of synthesized particles have been characterized by XRD, TEM. Optical properties have been studied by absorption spectra.

**KEYWORDS:** Anatase and rutile TiO<sub>2</sub> Nanoparticles, Calcination, TiO<sub>6</sub> Octahedron