

## **Biosynthesis of TiO<sub>2</sub> nanoparticles using natural extract of citrus sinensis and investigation of their optical properties for the photocatalytic application**

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The aim of this present study report on the biosynthesis and the main optical properties of titaniumdioxide (TiO<sub>2</sub>) nanoparticles (NPs) by a completely green chemistry process using orange skin natural extract as an effective chelating agent. TiO<sub>2</sub> metal oxide NPs shows special properties like hydrophobic nature, non-wet ability and high energy band gap. TiO<sub>2</sub> have been the focus of many promising applications due to their low-cost availability and biocompatible such as solar cell, photo catalysis, charge spreading devices, chemical sensors, microelectronics, and electrochemistry. In addition to the X-ray diffraction investigations, the Raman, attenuated total reflectance (ATR ; ) and Fourier Transform IR (FTIR) and infrared as well as the scanning electron microscopy (HR-SEM) while (TEM) and the Photoluminescence (PL) emission spectra confirmed the phase tetragonal of the TiO<sub>2</sub> nanoparticles. This green synthesis method involving TiO<sub>2</sub> NPs explores the advantages of inexpensive and non-toxic precursors.

**Key words:** Biosynthesis, Titanium Oxide Nanoparticles, Citrus Sinensis.

### **Biography**

A. Fall is a PhD student at UNISA from Senegal. I have 32 years. I got my master II in science of material geniuses at University of Cheikh Anta Diop of Dakar of Senegal

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