

# Synthesis of different TiO<sub>2</sub> nanostructures by using chemical vapor deposition (CVD) and anodize processes and their physical properties

Tahereh Hoseinzadeh<sup>1</sup>, Zohreh Ghorannevis<sup>2,\*</sup>

<sup>1</sup>Department of physic, Science and Research Branch, Islamic Azad University, Tehran, Iran

<sup>2</sup>Department of physics, karaj Branch, Islamic Azad University, karaj, Iran

Received: 06.03.2018    Final revised: 02.06.2018    Accepted: 02.07.2018

## Abstract

Titanium dioxide (TiO<sub>2</sub>) nanosheet and nanotubes are synthesized by using chemical vapor deposition (CVD) and anodize processes. Morphological and physical properties of nanostructures were studied by Scanning Electron Microscopy (SEM), X-ray diffraction (XRD) and diffuse reflection spectroscopy (DRS). Results revealed that different morphologies of TiO<sub>2</sub> nanostructures influenced their optical response and structure properties. Comparing the physical properties of these nanostructures such as structural, morphological and optical indicated that morphology, crystal structures and optical response can change which leads to applying these nanostructures in different applications.

**Keywords:** nanosheet, nanotube, anodization, chemical vapor deposition

---

\*Corresponding Author: ghorannevis@gmail.com