Contribution ID: **102** Type: **Oral**

ZnO photocatalytic spheres obtained by Thermal oxidation of metallic Zn

In recent years, photocatalytic materials based on semiconductor metal oxides have been extensively studied due to their vast potential in applications such as environmental remediation and protection, including air purification, disinfection, and water purification, as well as the destruction of harmful compounds, etc. Among all photocatalytic oxides, TiO2 and ZnO stand out because they are excellent photocatalytic materials with high photosensitivity, no toxicity, and a large bandgap. Although TiO2 is universally accepted as a very good photocatalyst, ZnO is a very good alternative because it has a very similar bandgap and is low cost. Additionally, it has been reported that ZnO possesses better quantum efficiency and higher photocatalytic activity than TiO2. Furthermore, ZnO can be fabricated with numerous nanostructured morphologies such as wires, rods, tubes, sheets, columns, hedgehog-like structures, etc.
In the present work, the thermal oxidation of metallic Zn spheres is carried out with the intention of obtaining ZnO photocatalytic spheres. A Raman study is conducted to determine the times and temperatures at which the wurtzite phase of ZnO is obtained. Different obtained morphologies were studied using Scanning Electron Microscopy (SEM), as well as an elemental analysis using EDS to determine the purity of the obtained material.

Keywords

ZnO, thermal oxidatiom, Raman Spectroscopy

Reference

J. Y U, and X. Y U; Hydrothermal Synthesis and Photocatalytic Activity of Zinc Oxide Hollow Spheres; Environ. Sci. Technol. 2008, 42, 4902–4907; DOI: 10.1021/es800036n

This work was supported by

NA

Author approval

I confirm

Author will attend

I confirm

Author: CASTREJÓN-SÁNCHEZ, V.H. (TecNM/Tecnológico de Estudios Superiores de Jocotitlán)

Co-authors: ENRÍQUEZ-PÉREZ, Ma. de los Ángeles (TecNM/Tecnológico de Estudios Superiores de Jocotitlán); GARCÍA-GONZÁLEZ, Nidia (TecNM/Tecnológico de Estudios Superiores de Jocotitlán)

Presenter: CASTREJÓN-SÁNCHEZ, V.H. (TecNM/Tecnológico de Estudios Superiores de Jocotitlán)

Session Classification: RENEWABLE ENERGY

Track Classification: Renewable Energy: Materials and Devices