

## Synthesis and characterization of lance-shaped CuO nanostructures

Paper Presenter: Mohadese Beigtan<sup>1</sup>

Mohadese Beigtan<sup>1</sup>, Fereshteh Rashchi<sup>2</sup>, Cyros Zamani<sup>3</sup>,

Mohammad Navid Haddadnezhad<sup>4</sup>

1- School of Metallurgy and Materials Engineering, University of Tehran, Iran

2- Associate Professor School of Metallurgy and Materials Engineering University of Tehran, Iran

3- Assistant Professor School of Metallurgy and Materials Engineering University of Tehran, Iran

4- School of Metallurgy and Materials Engineering, University of Tehran, Iran

Corresponding Author's E-mail: [rashchi@ut.ac.ir](mailto:rashchi@ut.ac.ir)

### Abstract

In the present work, we have synthesized the lance-shaped CuO via a simple and cost-effective method using copper sulfate and ammonia solution (28 wt%) as starting materials. The prepared powder was calcined in different temperatures and calcination times. It was found that the morphology of the obtained structure depends strongly on the calcination time and temperature. Phase analysis was carried out using X-ray diffraction (XRD). The morphology was characterized by scanning electron microscopy (SEM) and energy dispersive X-ray spectroscopy (EDS). This lanced shaped CuO nanomaterial may have some potential value in nanoscale applications.

**Keywords:** Nanostructure CuO, Morphology, Synthesis, lance-shaped.

---

<sup>1</sup> - B. Sc. Student of Metallurgical and Materials Engineering

<sup>2</sup> -Associate Professor, School of Metallurgy and Materials Engineering, College of Engineering, University of Tehran, Extractive Metallurgy

<sup>3</sup> -Assistant Professor ,School of Metallurgy and Materials Engineering, College of Engineering, University of Tehran ,Molecular and materials science

<sup>4</sup> - M. Sc. Student of Metallurgy and Materials Engineering, University of Tehran, Characterization and Selection of Engineering Materials