

P03

## DEPENDENCE OF V<sub>2</sub>O<sub>5</sub> NANORODS PROPERTIES ON SUBSTRATE TYPE PREPARED BY SIMPLE HYDROTHERMAL METHOD

N.M. Abd-Alghafour<sup>1,2,\*</sup>, Ghassan Adnan Naeem<sup>3</sup>, Sabah M Mohammad<sup>4</sup>

<sup>1</sup>*Iraqi Ministry of Education, Al-Anbar, IRAQ*

<sup>2</sup>*University Of Anbar, College of Applied Sciences, Al-Anbar, IRAQ.*

<sup>3</sup>*Biophysics Department, College of Applied Science, University Of Anbar, IRAQ.*

<sup>4</sup>*Institute of Nano Optoelectronics Research and Technology (INOR), Universiti Sains Malaysia, 11800 USM, Penang, MALAYSIA.*

(E-mail: na2013bil@gmail.com, Ghassanadnan105@yahoo.com, sabah@usm.my)

**ABSTRACT-** Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) nanorods were prepared on various substrates by simple hydrothermal method. The structural characterizations of V<sub>2</sub>O<sub>5</sub> nanorods (NRs) have been studied by using X-ray diffraction analysis. The influence of the different substrates on the surface morphology of V<sub>2</sub>O<sub>5</sub> NRs was investigated by field emission scanning electron microscopy (FESEM) technique. The results show that the preferred orientation along (001) plane. Raman spectra indicate that glass substrate has optimum results due to the size and number of the nanorods with lower defects. It can be found from the absorbance of the glass substrate increases compared with the other substrates.

**Keywords:** V<sub>2</sub>O<sub>5</sub>, nanorods, simple hydrothermal, Si substrate, Raman spectroscopy.