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Microwave Assisted Growth of Varied Phases and Morphologies of Vanadium Oxides Nanostructures: Structural and Optoelectronic Properties

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Abstract : Transition metal oxides nanoparticles with different morphologies have attracted a lot of attention recently owning to their distinctive geometries, and demonstrated promising electrical properties for various applications. In this paper, we discuss the time and annealing effects on the structural and electrical properties of vanadium oxides nanoparticles (VO-NPs) prepared by microwave method. In this sense, transmission electron microscopy (TEM), X-ray diffraction (XRD), Raman Spectroscopy, Ultraviolet-visible absorbance spectra (Uv-Vis) and electrical conductivity were investigated. Hence, the annealing state and the time are two crucial parameters for the improvement of the optoelectronic properties. The use of these nanostructures is promising way for the development of technological applications especially for energy storage devices.

Keywords : Vanadium oxide, Microwave, Electrical conductivity, Optoelectronic properties
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