*Available online at* www.joac.info

ISSN: 2278-1862

**Journal of Applicable Chemistry**

**2013, 2 (4):982-986**

(International Peer Reviewed Journal)

# Low Temperature Synthesis and Characterisation of Nanosized Vanadium Oxide

**Mahesha N[1] and Arunkumar Lagashetty[2]***

1. Department of Chemistry, Singhania University, Rajastan, **INDIA**
2. Department of Chemistry, Appa Institute of Engineering & Technology, Gulbarga, Karnataka, **INDIA**

Email: arun_lagashetty@yahoo.com

Received on 22nd June and finalized on 3rd July 2013.

## ABSTRACT

*Self propagating low temperature synthesis method for the synthesis of oxide nano materials integrates synthetic chemistry. The combustion process need an efficient fuel for complete conversion of the reaction mixture in to crystalline product Present work reports, synthesis of vanadium oxide by vanadium oxalate precursor employing polyvinyl alcohol as a fuel. The structure of as synthesised oxide is characterised by X-ray diffraction (XRD), bonding by Fourier transfer infrared (FTIR), morphology and particle size by Scanning Electron Microscope (SEM) tools. Crystallite sizes and density measurement of the sample is under taken. The crystallite sizes were calculated using X-ray line broadening and density measurements were under taken by various methods. Crystalline behaviour is observed by XRD pattern and vanadium – oxygen (V-O) bond formation was confirmed by FTIR study.*

**Keywords:** Self-propagating, Structure, Bonding, Morphology, Crystallite size, Density.