**HYDROTHERMAL SYNTHESIS AND CHARACTERIZATION OF TUNGSTEN OXIDE NANOPARTICLES**

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**Abstract**

In the present work, tungsten oxide nanoparticles were synthesized using a simple hydrothermal method. Detailed structural and microstructural investigations are carried out using Powered X-ray diffraction (XRD), The prepared metal oxide nanoparticles are characterized using XRD and UV-Visible spectroscopy analysis. The particle size is estimated using an XRD pattern. The optical band gap is calculated from UV-visible absorption measurement. The sharp peaks in the FTIR spectrum determined the purity of metal nanoparticles. The surface morphological studies will be performed by SEM analysis. The antimicrobial activity of tungsten oxide was also studied. The results suggest the materials in this study promote mediation of the inhibition of microbial growth in suspension.

Keywords: Nanoparticles, PXRD, FTIR, SEM