



Factors Effecting Visible Light Photocatalytic Degradation of Rhodamine-B using $ZnWO_4$ Synthesized by Combustion Method

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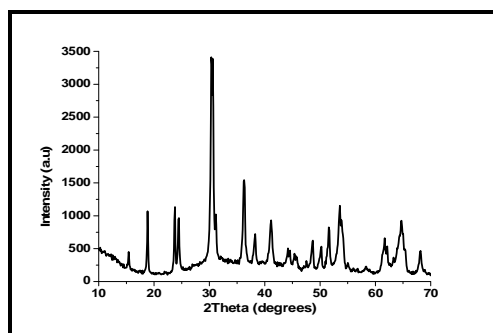
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ABSTRACT

$ZnWO_4$ photocatalyst was synthesized with the help of combustion method by taking $Zn(NO_3)_2$, $Na_2WO_4 \cdot 2H_2O$ are taken as oxidant and glycine as fuel. The photocatalyst was calcined at $400^\circ C$ for 4 h. After calcinations, resulting product was characterized by X-ray diffraction study (XRD), Scanning Electron Microscopy (SEM) and UV-visible diffuse reflectance spectra (UV-DRS) to get information about phase purity, morphology and activity of photocatalyst under UV or visible light respectively. The obtained phase pure monoclinic $ZnWO_4$ photocatalyst was used to degrade Rhodamine-B under visible light irradiation by using 400 W metal halide lamp as visible light source.

Graphical Abstract



XRD pattern of resultant powder from combustion followed by calcinations at $400^\circ C$ for 4h

Keywords: Combustion method, $ZnWO_4$, Rhodamine-B, X-ray Diffraction, Photocatalytic degradation.