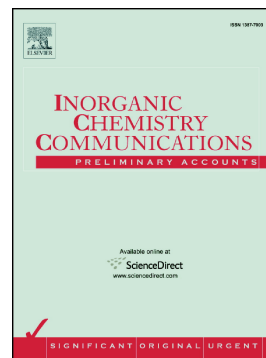


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Synthesis of Flake-like Bismuth Tungstate (Bi_2WO_6) for Photocatalytic Degradation of Coomassie Brilliant Blue (CBB)

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ABSTRACT

Bismuth tungstate (Bi_2WO_6) flake-like nanostructures with zigzag periphery and 30-40 nm thickness in high yield were produced by facile and efficient modified hydrothermal technique. The as-synthesized nanostructures were characterized by X-ray diffraction (XRD), energy dispersive x-ray spectroscopy (EDX), scanning electron microscopy (SEM) and Fourier transform infrared spectroscopy (FTIR). Bi_2WO_6 nanostructures were investigated as visible light photocatalyst to degrade model dye coomassie brilliant blue (CBB). The role of hydrogen peroxide (H_2O_2) used as initiator was also studied by varying concentrations during photocatalysis. It was observed that photocatalytic activity significantly enhanced for lower initiator concentrations. The growth mechanism for nanostructures was also discussed briefly.

Keywords: *Bismuth tungstate; Nanoflakes; Photocatalysis; Coomassie Brilliant Blue*

Introduction

Metal tungstates are considered to have immense potential for applications in different

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