



Photocatalytic Degradation of Amaranth Dye Using Bismuth Vanadate-Nickel Sulfide Composite

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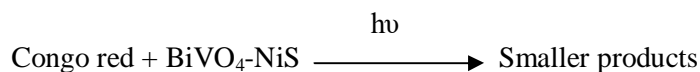
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ABSTRACT

The photocatalytic activity of $\text{BiVO}_4\text{-NiS}$ composite on photodegradation of amaranth has been studied. As-prepared photocatalyst was used for degradation of Amaranth in visible light. The characterization of composite was done on the basis of XRD, EDX and FESEM data. The progress of photodegradation reaction was monitored by spectrophotometer at definite time intervals. The effect of various parameters such as pH, concentration of dye, amount of composite and light intensity was observed to achieve optimum rate of photodegradation. It was observed that bismuth vanadate - nickel sulfide composite has the highest catalytic activity in almost neutral medium. A tentative mechanism for the reaction has been proposed.

Graphical Abstract:



Keywords: Photodegradation, Nanocomposites, Amaranth dye, XRD.