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Fabrication of nanocomposite photocatalyst $\text{CuBi}_2\text{O}_4/\text{Bi}_3\text{ClO}_4$ for removal of acid brown 14 as water pollutant under visible light irradiation

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Highlights

- $\text{CuBi}_2\text{O}_4/\text{Bi}_3\text{ClO}_4$ nanocomposites have been successfully prepared by an improved Pechini.
- Effects of the various parameter on the morphology of the $\text{CuBi}_2\text{O}_4/\text{Bi}_3\text{ClO}_4$ products were examined.
- Ultrafine sphere-like, irregular polyhedral-like, polyhedral-like plate-like and cubic-like were achieved.
- Photocatalytic efficiency for acid brown 14 azo dye under visible light irradiation was evaluated.

Abstract

In the present study, $\text{CuBi}_2\text{O}_4/\text{Bi}_3\text{ClO}_4$ nanocomposites have been fabricated via an improved Pechini sol-gel process using the mixtures of various gelling agents and polybasic acids. This work shows that by controlling the reaction conditions such as kind of polybasic acids, gelling agents, pH and mole ratio of polybasic acid to

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