

Tuning the Morphology of Ag₃PO₄ Photocatalysts with an Elevated Concentration of KH₂PO₄

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Abstract	<p>Tuning the morphology of Ag₃PO₄ photocatalysts with an elevated concentration of KH₂PO₄ have been successfully conducted. This photocatalyst was prepared by starting material of AgNO₃ and KH₂PO₄. The KH₂PO₄ aqueous solution with five concentrations of 0.10 M, 0.15 M, 0.30 M, 0.45 M, and 0.60 M was reacted with AgNO₃ aqueous solution. The products were characterized using X-ray Diffraction (XRD), UV-Vis Diffuse Reflectance Spectroscopy (DRS), and Scanning Electron Microscopy (SEM). The concentration of KH₂PO₄ significantly affected the morphology, size, and crystallinity of catalyst. The morphology of Ag₃PO₄ may be tuned with the synthesis using an elevated concentration of KH₂PO₄. The sample with the synthesis using 0.15 M of KH₂PO₄ exhibited the excellent photocatalytic activity. The high photocatalytic activity was caused by the small size of mixed morphology of sphere and tetrahedron, high crystallinity and defect sites.</p> <p>Copyright (C) 2019 BCREC Group. All rights reserved</p>
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