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

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Abstract	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.Ã‚Â 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 ReflectanceÃ‚Â 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.Ã‚Â
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Author	ROY ANDREAS, S.Si, M.Si, Ph.D