

## Use of Mn doping to suppress defect sites in Ag<sub>3</sub>PO<sub>4</sub>: Applications in photocatalysis

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<b>Abstract</b>	The highly active Mn-doped Ag <sub>3</sub> PO <sub>4</sub> photocatalyst was successfully synthesized under coprecipitation method using AgNO <sub>3</sub> , Na <sub>2</sub> HPO <sub>4</sub> .12H <sub>2</sub> O, and MnSO <sub>4</sub> .H <sub>2</sub> O, followed by annealing. The products were characterized using the SEM, XRD, DRS, XPS, and BET. The results showed that the Mn doping decreased the broad absorption in the visible region and increased the atomic ratio of O/Ag. The hydroxyl defects and oxygen vacancies can be suppressed by Mn doping and the photocatalytic activity under visible light irradiation could be improved. This excellent photocatalytic activity was caused by decreasing the recombination of electron and holes due to suppressing the defect sites in the surface of Ag <sub>3</sub> PO <sub>4</sub> .
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