## <u>Design of Defect and Metallic Silver in Silver Phosphate Photocatalyst Using the Hydroxyapatite and Glucose</u>

Title	Design of Defect and Metallic Silver in Silver Phosphate Photocatalyst Using the Hydroxyapatite and Glucose
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Abstract	The defect and metallic silver (Ag) in silver phosphate (Ag3PO4) photocatalyst were successfully generated using hydroxyapatite (HA) and glucose. Two steps of synthesis were done in these experiments. Firstly, the Ag/HA powder was prepared by reacting AgNO3 and HA, followed by the addition of a glucose solution. Secondly, the suspension of Ag/HA was reacted with AgNO3 aqueous solution. The yellow product of Ag/Ag3PO4 photocatalyst was produced. The products were characterized using X-Ray Diffraction (XRD), Diffuse Reflectance Spectroscopy (DRS), Scanning Electron Microscope (SEM), Brunauer $\hat{A}$ ¢ $\hat{A}$ € $\hat{A}$ "Emmett $\hat{A}$ ¢ $\hat{A}$ € $\hat{A}$ "Teller (BET) and X-ray Photoelectron Spectroscopy (XPS). The decreased ratio of O/Ag and metallic Ag formation observed by the XPS was detected as the possible defect and Ag-doping in the photocatalyst. The enhanced photocatalytic activity might be caused by the oxygen vacancy and metallic Ag in Ag3PO4 that enables the separation of photo-generated electrons and holes.
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