

## Facile Synthesis of Ag<sub>3</sub>PO<sub>4</sub> Photocatalyst with Varied Ammonia Concentration and Its Photocatalytic Activities For Dye Removal

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<b>Abstract</b>	The highly active photocatalyst of Ag <sub>3</sub> PO <sub>4</sub> could be synthesized under ammonia solution using the facile co-precipitation method with the starting material of AgNO <sub>3</sub> and Na <sub>2</sub> HPO <sub>4</sub> ·12H <sub>2</sub> O. The variation of ammonia concentration was designed at 0.00, 0.05, 0.15, and 0.30 M. The products were characterized using X-ray diffraction, UV-diffuse reflectance spectroscopy, and scanning electron microscopy. The photocatalytic activities were evaluated using the Rhodamine B degradation under blue light irradiation. The effect of calcination, pH condition, and visible light source irradiation was carried out in the experiment. The highest photocatalytic activity was found in the sample prepared using the addition of ammonia solution at the concentration of 0.05 M. This photocatalytic activity was 4.13 times higher compared to the Ag <sub>3</sub> PO <sub>4</sub> prepared without the ammonia. The effective condition of photocatalytic activity was achieved at the sample prepared without calcination, degradation at pH of 7 and under blue light irradiation.
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