Photo-corrosion inhibition of Ag$_3$PO$_4$ by polyaniline coating

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**ABSTRACT**

In this paper, polyaniline-coated silver phosphate has been successfully prepared via a facile chemisorption method in order to improve the stability of Ag$_3$PO$_4$ under light irradiation. The crystalline phase, band gap energy, and microstructure of the obtained PANI/Ag$_3$PO$_4$ composites were characterized by X-ray diffraction, UV–vis diffuse reflection spectroscopy, scanning electron microscopy, and transmission electron microscopy, respectively. The photocatalytic degradation of methylene blue was performed to test the activities of PANI/Ag$_3$PO$_4$ composites with different coating amounts and the results indicate that the stabilities of PANI/Ag$_3$PO$_4$ composites were successfully enhanced. The correlation between photocatalytic performance and the properties of PANI/Ag$_3$PO$_4$ composites is discussed in detail.

**Keywords:** Polyaniline; Ag$_3$PO$_4$; Photocatalyst; Photo-corrosion inhibition; Structural characterization

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