

**Supporting Information:**

**Nonmetal-Metal-Semiconductor-Promoted P/Ag/Ag<sub>2</sub>O/Ag<sub>3</sub>PO<sub>4</sub>/TiO<sub>2</sub>  
Photocatalyst with Superior Photocatalytic Activity and Stability**

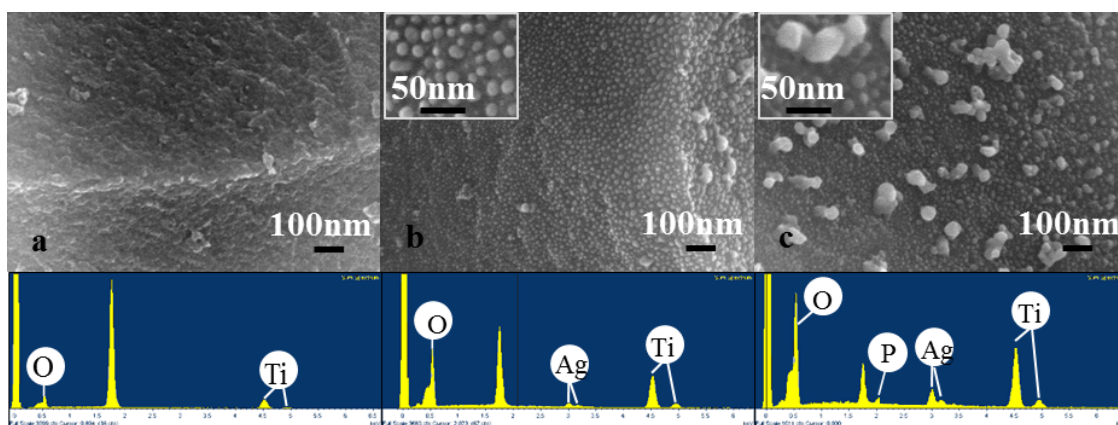
**Xiaohong Hu,<sup>a</sup> Qi Zhu,<sup>a</sup> Xinlong Wang,<sup>bc</sup> Naoki Kawazoe<sup>b</sup> and Yingnan Yang<sup>\*a</sup>**

<sup>a</sup> Graduate School of Life and Environmental Sciences, University of Tsukuba, 1-1-1 Tennoudai, Tsukuba, Japan

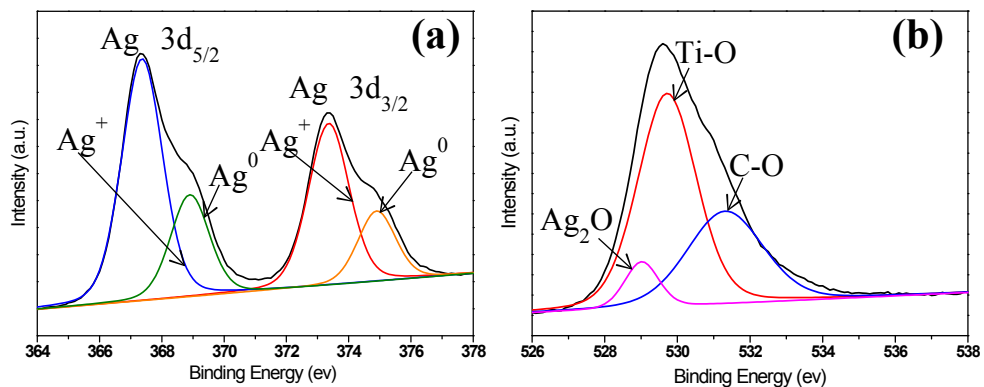
<sup>b</sup> Tissue Regeneration Materials Unit, International Center for Materials Nanoarchitectonics, National Institute for Materials Science, 1-1 Namiki, Tsukuba, Japan

<sup>c</sup> Department of Materials Science and Engineering, Graduate School of Pure and Applied Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Japan

\*E-mail: [yo.innan.fu@u.tsukuba.ac.jp](mailto:yo.innan.fu@u.tsukuba.ac.jp); Tel/Fax: +81-29-853-4650



**Fig. S1** SEM images of (a) TiO<sub>2</sub>, (b) Ag/Ag<sub>2</sub>O/TiO<sub>2</sub> and (c) P/Ag/Ag<sub>2</sub>O/Ag<sub>3</sub>PO<sub>4</sub>/TiO<sub>2</sub> composite photocatalysts (corresponding EDS patterns shown below)



**Fig. S2** (a) Ag 3d and (b) O 1s XPS spectra for as-prepared Ag/Ag<sub>2</sub>O/TiO<sub>2</sub> composite photocatalyst.

**Table S1** Binding energies of Ag 3d for as-prepared Ag/Ag<sub>2</sub>O/TiO<sub>2</sub> and P/Ag/Ag<sub>2</sub>O/Ag<sub>3</sub>PO<sub>4</sub>/TiO<sub>2</sub> composite photocatalysts.

Binding energy (ev)	Ag/Ag <sub>2</sub> O/TiO <sub>2</sub>	P/Ag/Ag <sub>2</sub> O/Ag <sub>3</sub> PO <sub>4</sub> /TiO <sub>2</sub>
Ag <sup>0</sup> 3d <sub>3/2</sub>	374.825	374.200
Ag <sup>0</sup> 3d <sub>5/2</sub>	368.856	368.182
Ag <sup>+</sup> 3d <sub>3/2</sub>	373.307	373.392
Ag <sup>+</sup> 3d <sub>5/2</sub>	367.318	367.391