Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Visible-light-driven TiO_2/Ag_3PO_4 heterostructure with enhanced antifungal activity against agricultural pathogenic fungi *Fusarium graminearum* and mechanism insight

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SEM Observation

Spores without or with photocatalytic treatment were collected by centrifugation. The pellet was fixed with 2.5% glutaraldehyde and 4% paraformaldehyde in 0.1 M phosphate buffer at 4 °C for 2 h. After fixation, the cell pellets were washed with phosphate buffer for three times to remove the excess fixative. Then, the samples were dehydrated by a successive soaking in 50%, 70%, and 90% ethanol for 10 min each and three soakings in absolute ethyl alcohol for 15 min each. The pellets were then soaked in isoamyl acetate for 1h. Critical point drying was performed by placing samples in hexamethyl disilazane for 45 min and allowing them to dry overnight at room temperature.

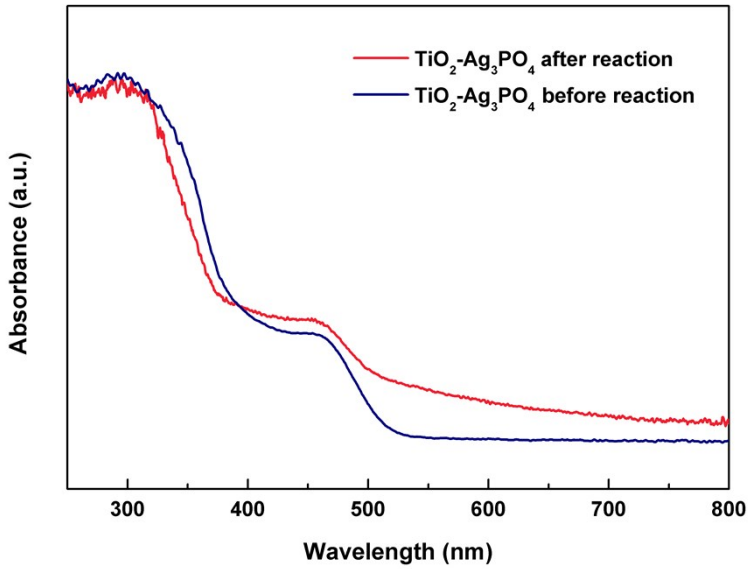

Fig. S1 UV–vis absorption spectra of TiO_2/Ag_3PO_4 composite before after recycling experiments.

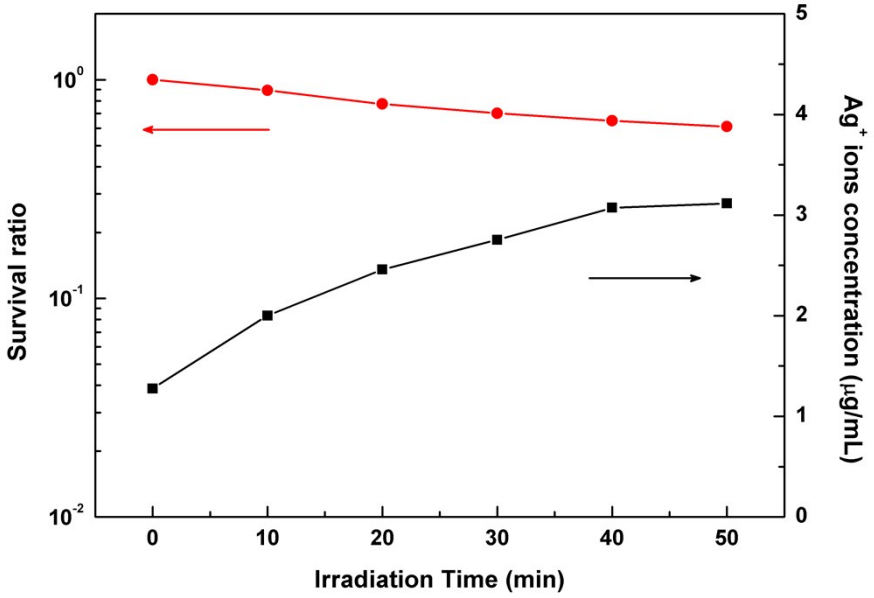

Fig. S2 Ag ions release into mixture of *E. coli* cells and TiO_2/Ag_3PO_4 composite； and inactivation curves with released Ag ions.

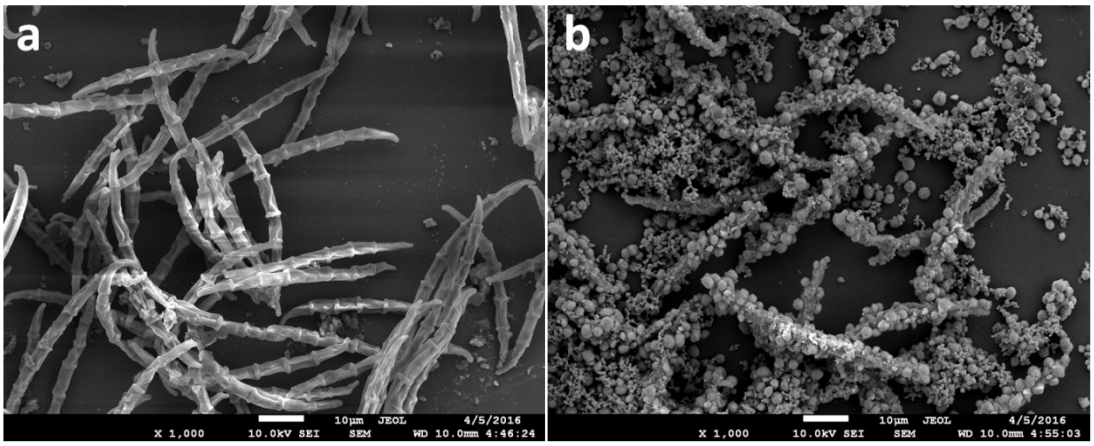

Fig. S3 SEM images of *F. graminearum* macroconidia (a) before and (b) after photocatalytic inactivation treatment for 100 min.