Supporting Information

Promotion effect of free Ag^+ ions for photocatalytic dechlorination processes

Meng Tian, Jing Qian, Jiawei Hou, Yadi Bai, Hai-Ying Jiang*, Jingyun Ren*

Key Lab of Synthetic and Natural Functional Molecule Chemistry of Ministry of Education, and the Energy and Catalysis Hub, College of Chemistry and Materials Science, Northwest University, Xi'an 710127, People's Republic of China

jianghy@nwu.edu.cn, jyrenchem@nwu.edu.cn

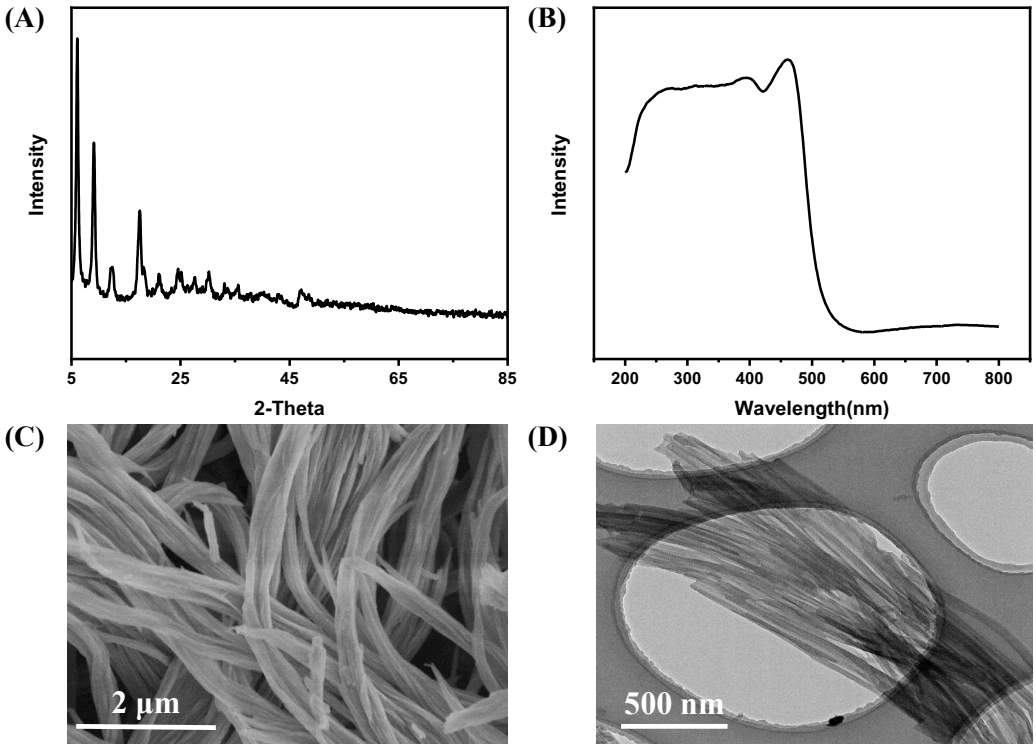

Figure. S1 (A) XRD pattern of PhC_2Cu; (B) UV-visible diffuse reflectance spectroscopy of PhC_2Cu; (C) SEM images of PhC_2Cu; (D)TEM images of PhC_2Cu.

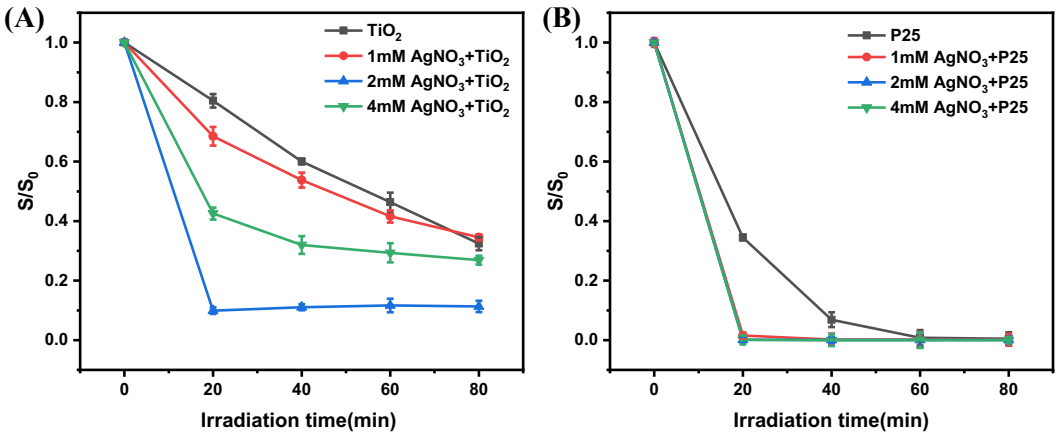

Figure. S2 Photocatalytic degradation of 2,4-DCP in the absence and presence of $AgNO_3$ by TiO_2 (A) and P25 (B).

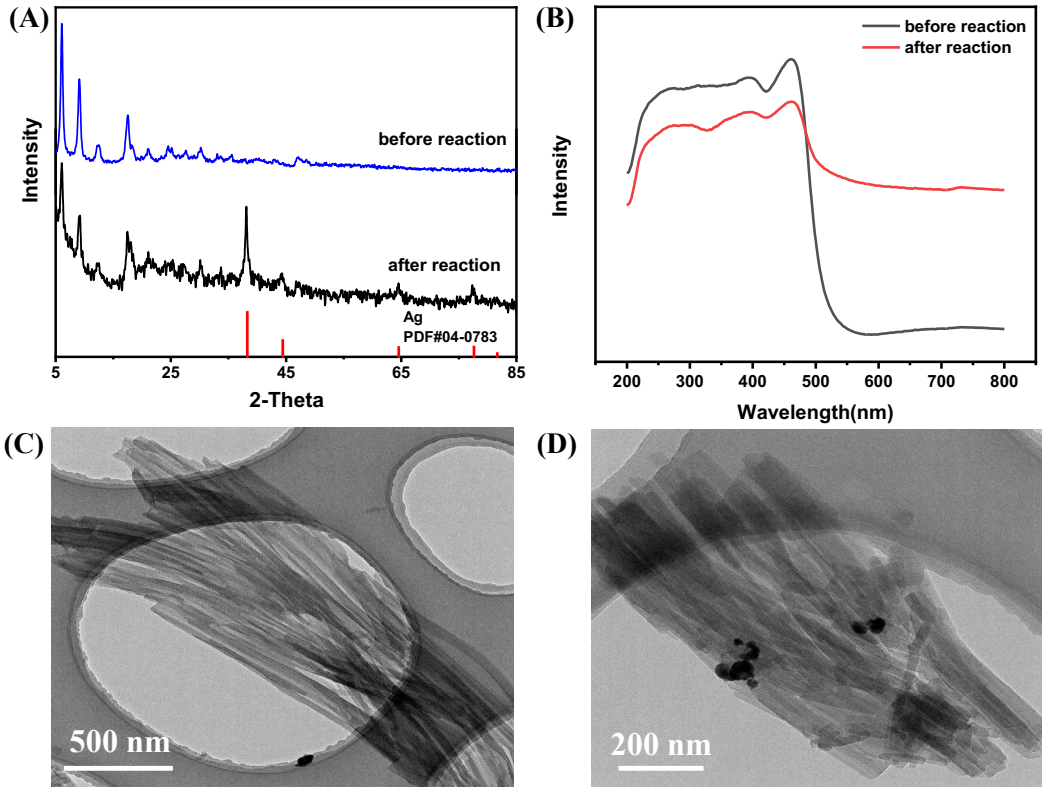

Figure. S3 (A) XRD spectra of PhC_2Cu before and after the photocatalytic reaction; (B) UV-visible diffuse reflectance spectroscopy of PhC_2Cu before and after the photocatalytic reaction; TEM images of PhC_2Cu before (C) and after (D) photocatalytic reaction.

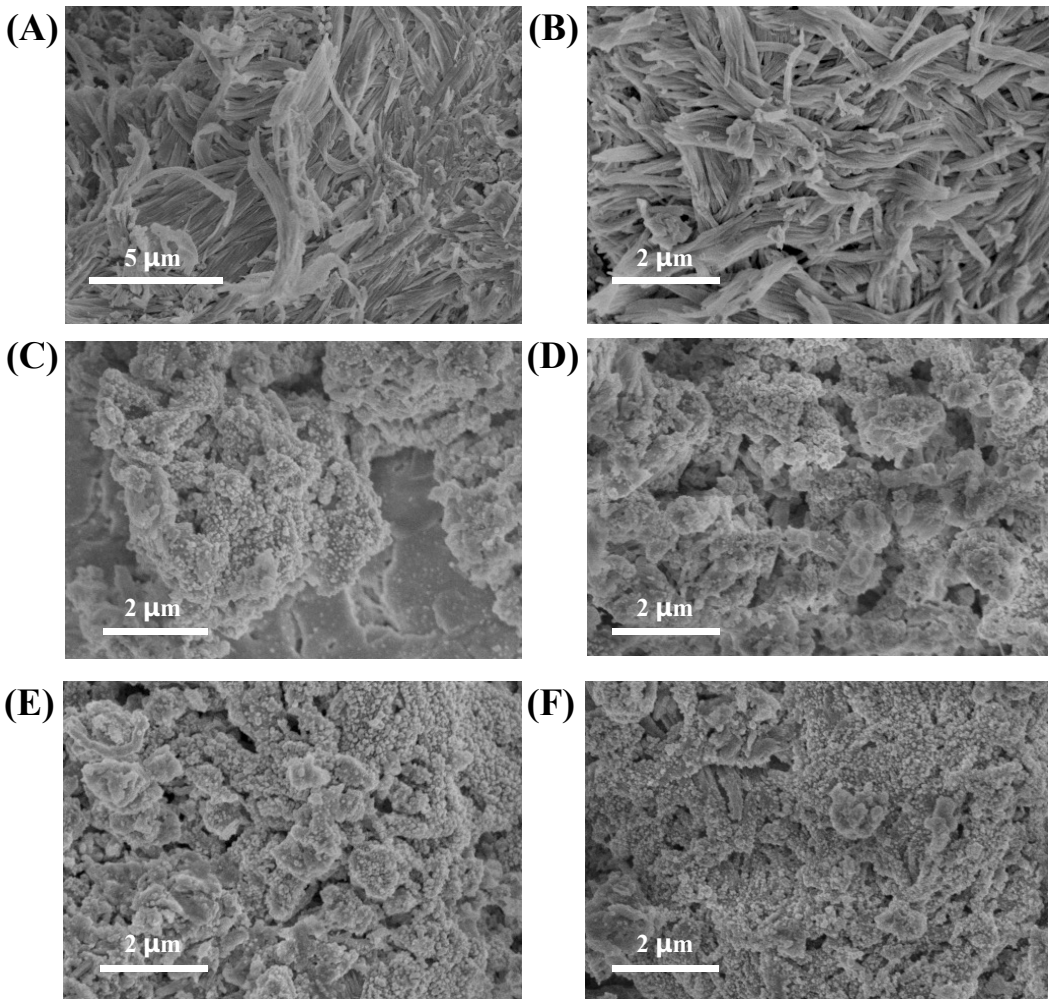

Figure. S4 (A) SEM images of PhC_2Cu sample; SEM images of the PhC_2Cu sample after the 1st cycling experiment (B), the 2nd cycling experiment (C), the 3rd cycling experiment (D), the 4th cycling experiment (E) and the 5th cycling experiment (F).

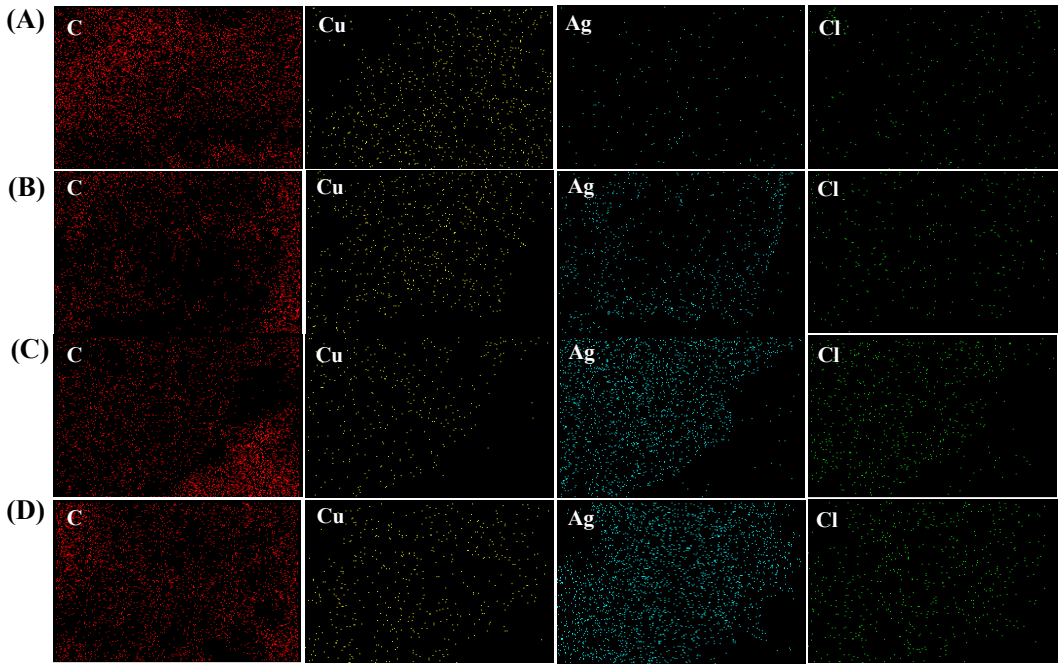

Figure. S5 (A) SEM mapping image of PhC_2Cu sample; SEM mapping images of the PhC_2Cu sample after the 1st cycling experiment (B), the 3rd cycling experiment (C) and the 6th cycling experiment (D).

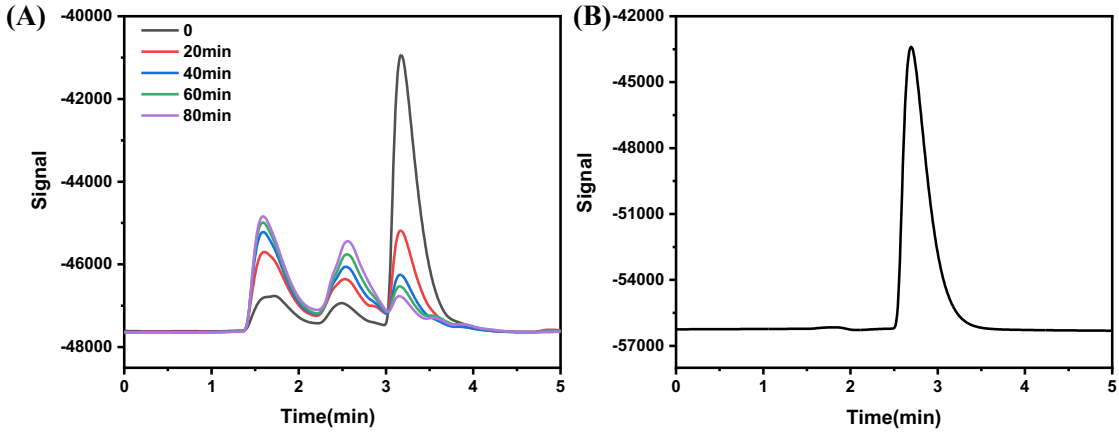

Figure. S6 (A) HPLC of 2,4-DCP solution during the photocatalytic degradation experiments in the presence of 2 mM $AgNO_3$; (B) Chromatograms of phenol standard solutions (2×10^{-4} M).

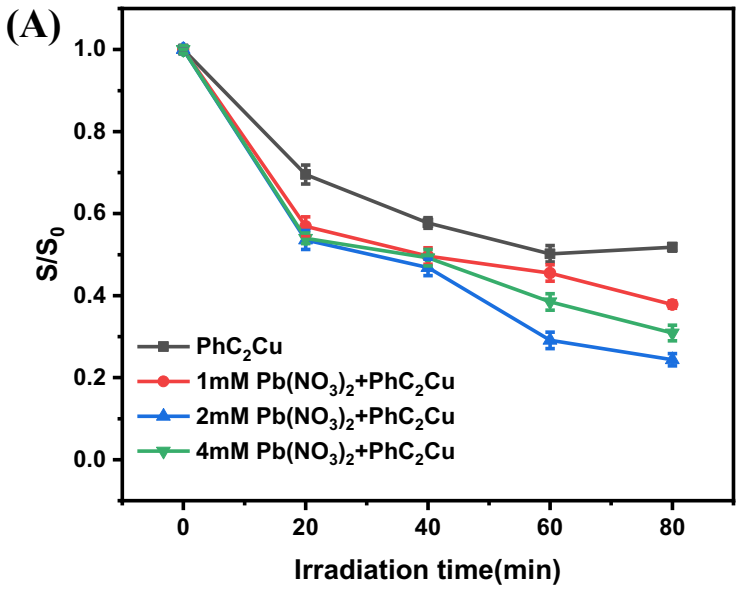

Figure. S7 (A) Photocatalytic degradation of 2,4-DCP over the PhC_2Cu sample in different $Pb(NO_3)_2$ concentration systems

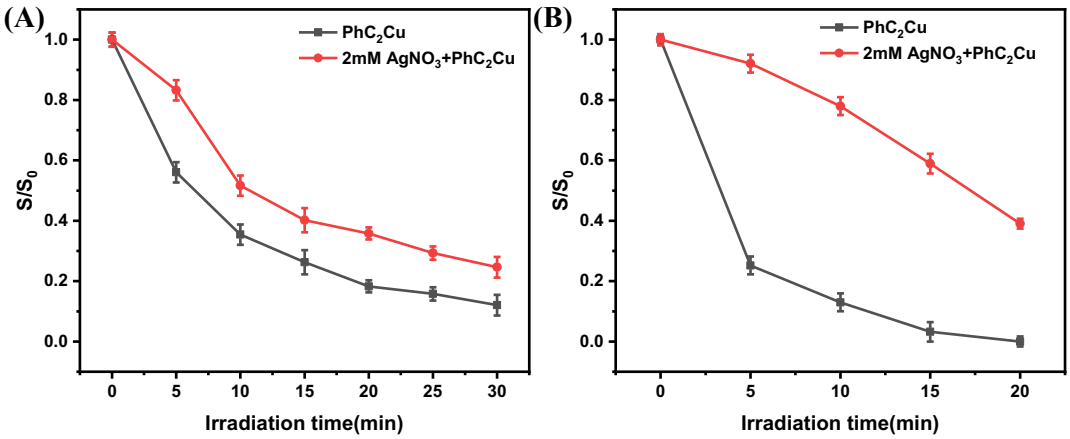

Figure. S8 (A) Photocatalytic degradation of PBP over the PhC_2Cu sample in different $AgNO_3$ concentration systems; (B) Photocatalytic degradation of 2,4,6-TCP over the PhC_2Cu sample in different $AgNO_3$ concentration systems.