

Supporting Information

Photoconversion of CO₂ over Ag/TiO₂ Nanocomposites Prepared with a Simple and Rapid Silver Mirror Method

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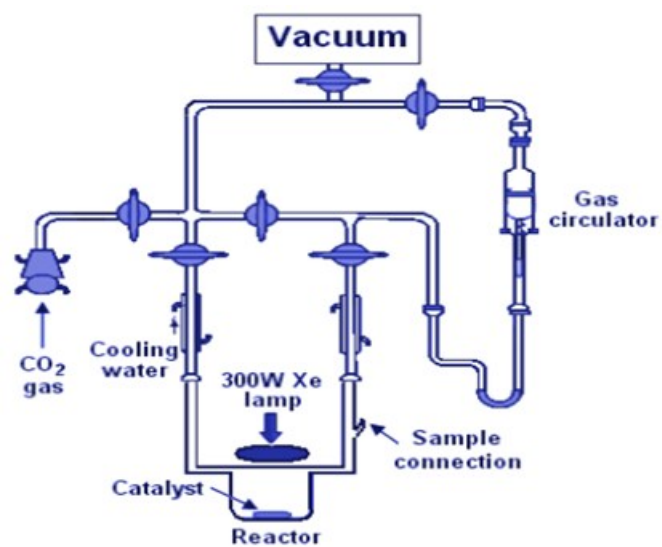


Figure S1 Reaction setup for evaluation of conversion rate of CO₂.

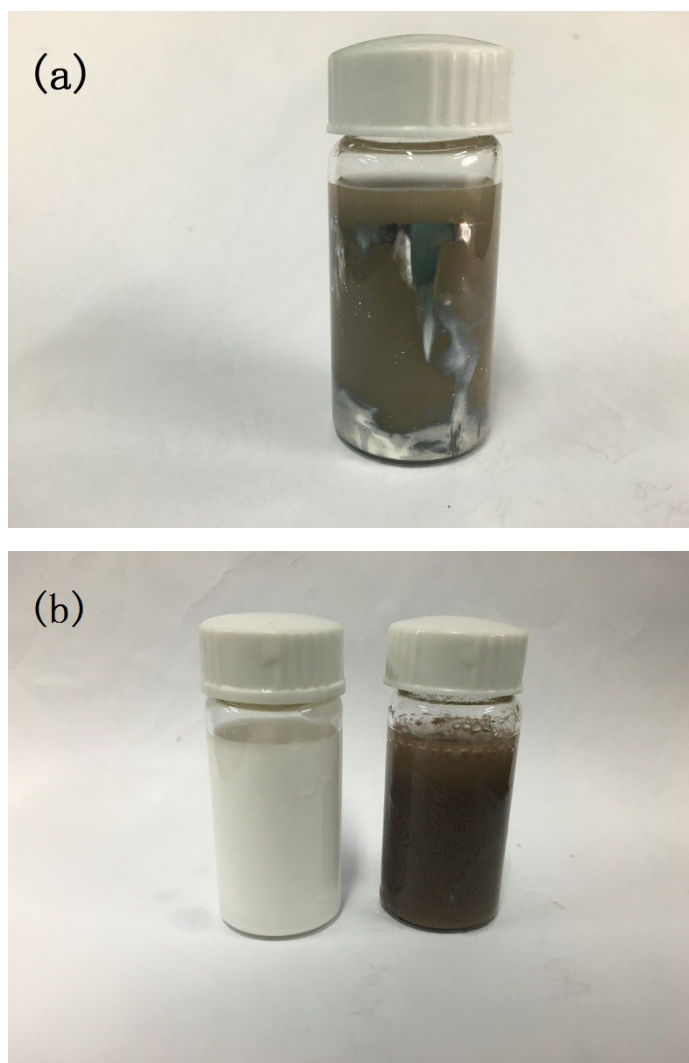


Figure S2 (a) Glass bottle shows the solution after common silver mirror reaction in absence of TiO_2 nanoparticles. (b) Left and right bottles show the solutions before and after silver mirror reaction in the presence of the TiO_2 nanoparticles, respectively.

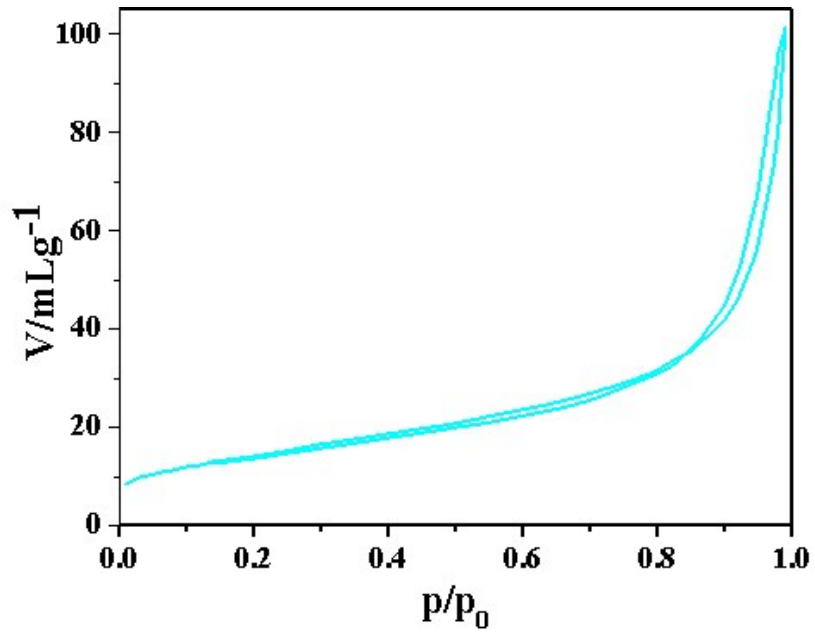


Figure S3 N₂ adsorption-desorption isotherm of Ag-TiO₂(1.5 wt%).

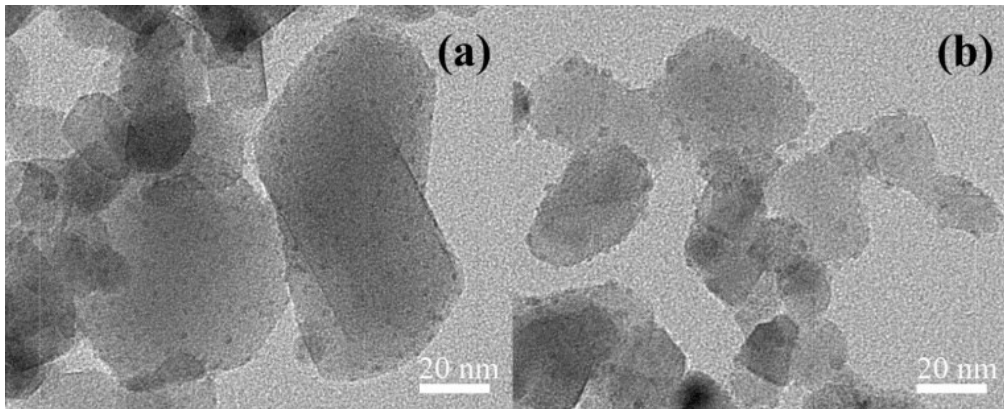


Figure S4 TEM images of A/TiO₂ composite material with (a) 1.0 wt% and (b) 2.0 wt% Ag, respectively.

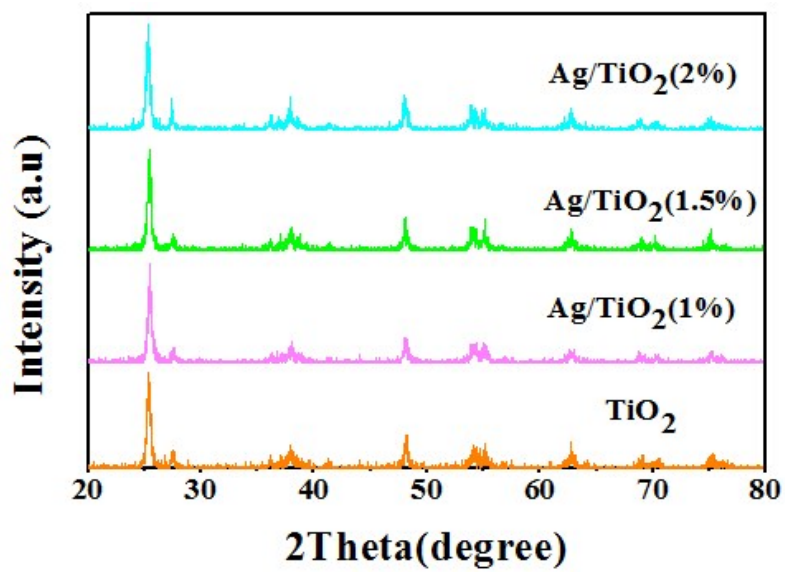


Figure S5 XRD patterns of TiO₂, 1 wt%, 1.5 wt%, and 2.0 wt% Ag/TiO₂.

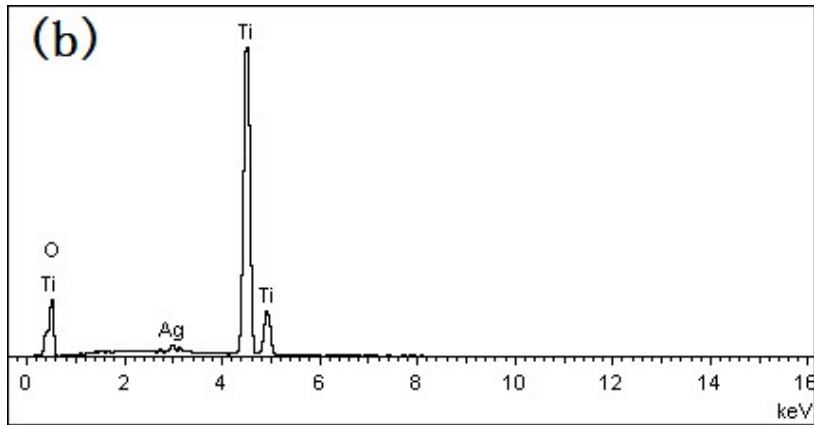
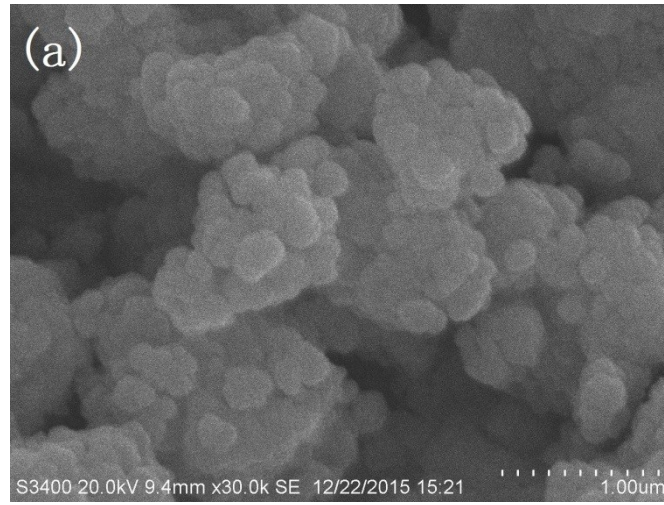


Figure S6 (a) SEM image and (b) the corresponding EDS of 1.5 wt% Ag/TiO₂.

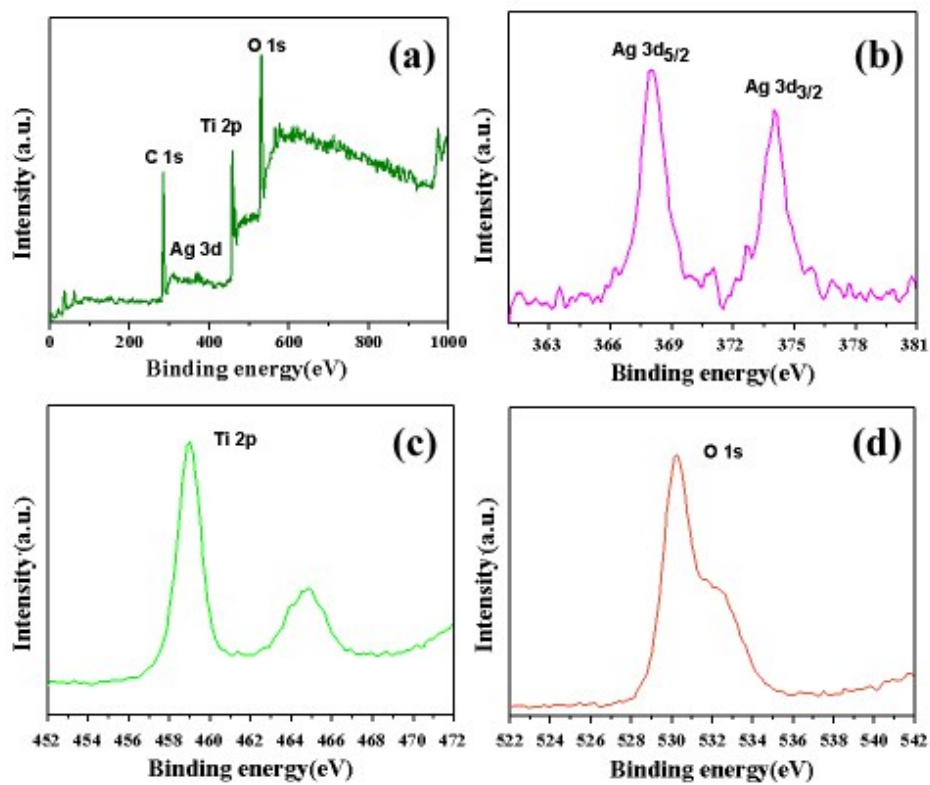


Figure S7 XPS spectra of Ag/TiO₂ composite with 1.5wt% Ag.

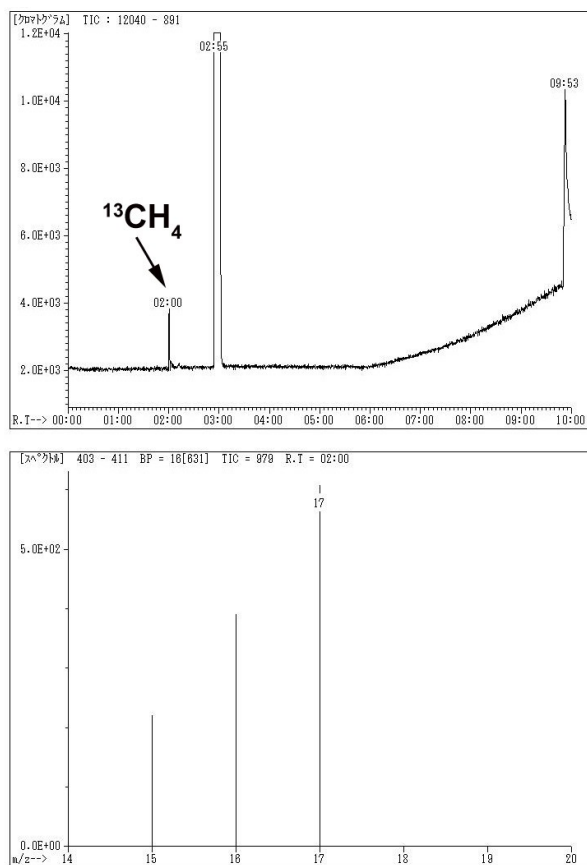


Figure S8 Gas chromatogram (down) and mass spectrum of $^{13}\text{CH}_4$ (top).

Carbon dioxide $^{13}\text{CO}_2$ was used.

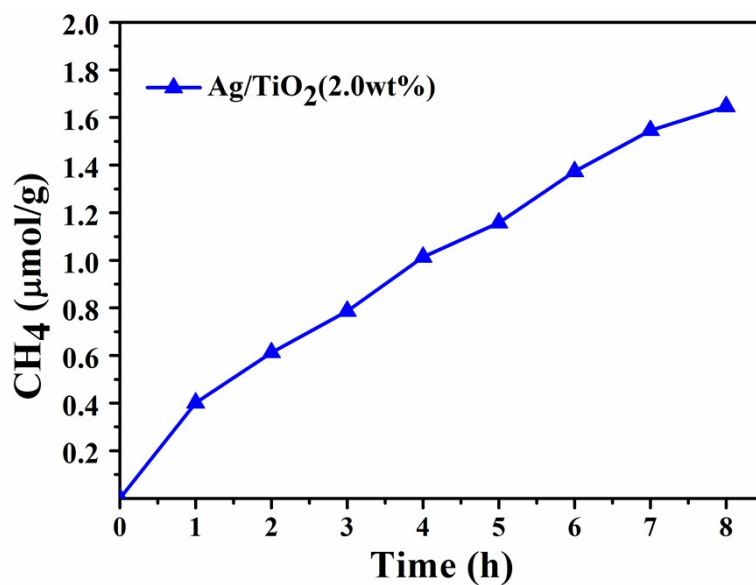


Figure S9 CH₄ evolved during the photocatalytic using 2.0 wt% Ag/TiO₂ under visible light irradiation in gas phase photoreactions.

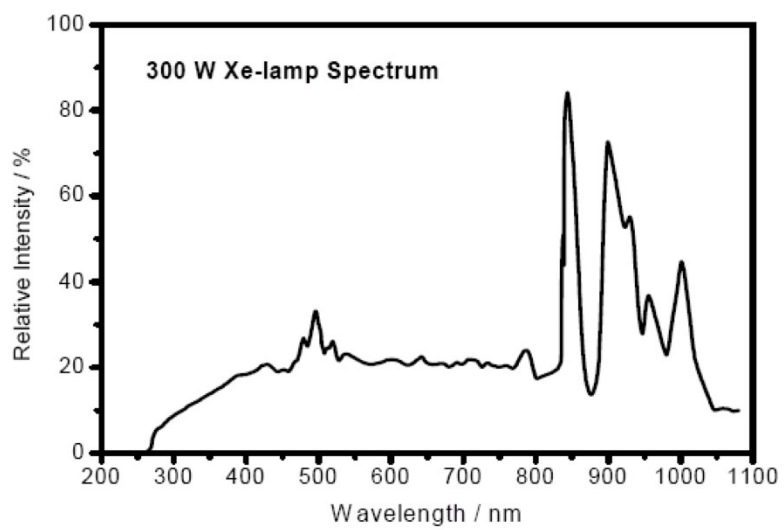


Figure S10 Spectrum of 300W Xe-lamp.

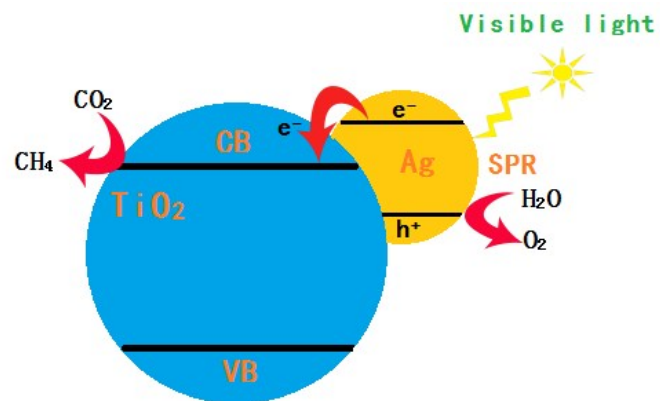


Figure S11 Schematic representation of the SPR effect under visible irradiation in gas phase photoreaction.