Supporting Information

Photoconversion of CO$_2$ over Ag/TiO$_2$ 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 $N_2$ adsorption-desorption isotherm of Ag-TiO$_2$ (1.5 wt%).
Figure S4  TEM images of A/TiO$_2$ composite material with (a) 1.0 wt% and (b) 2.0 wt% Ag, respectively.
Figure S5 XRD patterns of TiO$_2$, 1 wt%, 1.5 wt%, and 2.0 wt% Ag/TiO$_2$. 
Figure S6 (a) SEM image and (b) the corresponding EDS of 1.5 wt% Ag/TiO$_2$. 
Figure S7 XPS spectra of Ag/TiO$_2$ composite with 1.5wt% Ag.
Figure S8 Gas chromatogram (down) and mass spectrum of $^{13}$CH$_4$ (top). Carbon dioxide $^{13}$CO$_2$ was used.
Figure S9 CH$_4$ evolved during the photocatalytic using 2.0 wt% Ag/TiO$_2$ 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.