Electronic Supplementary Material (ESI) for RSC Advances.

Reducing the barrier effect of graphene sheets on Ag cocatalyst to further improve the photocatalysis performance of TiO_2

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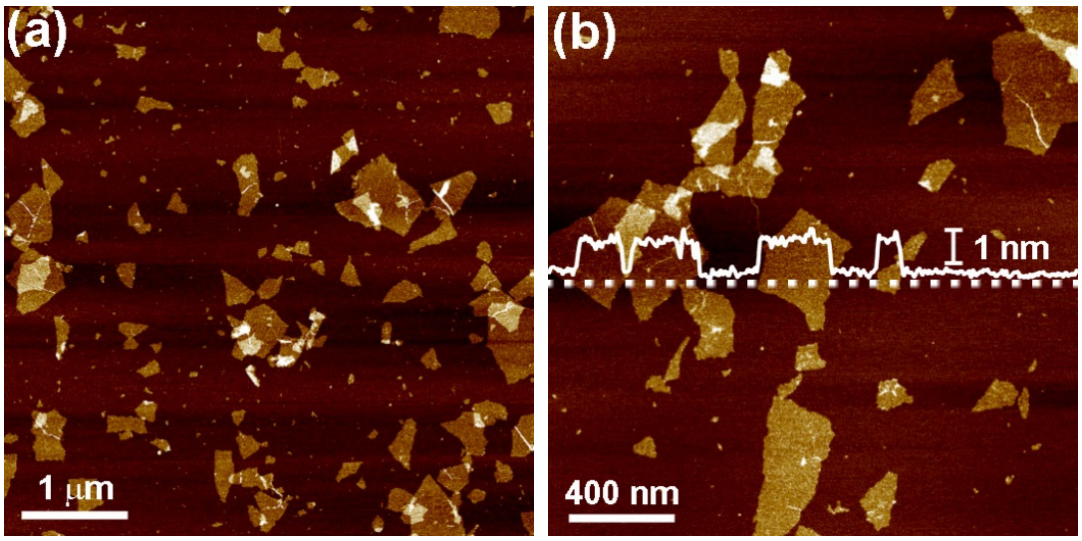

Fig. S1. AFM images of small GO sheets. White curve in Figure (b) is the height profile taken along the dotted line (scale bar, 1 nm). Samples were prepared by drop-casting dilute GO sheet dispersions onto mica plates.

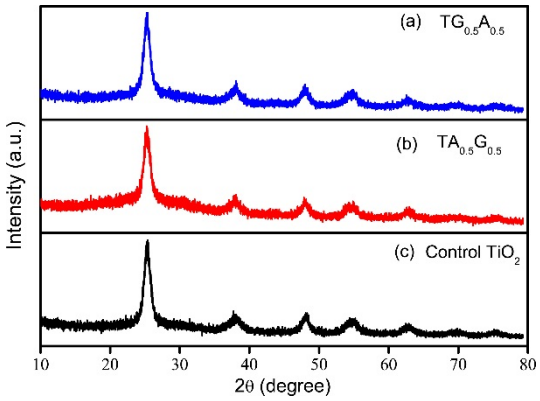

Fig.S2. XRD patterns of samples. (a) $TG_{0.5}A_{0.5}$, (b) $TA_{0.5}G_{0.5}$ and (c) control TiO_2 spheres

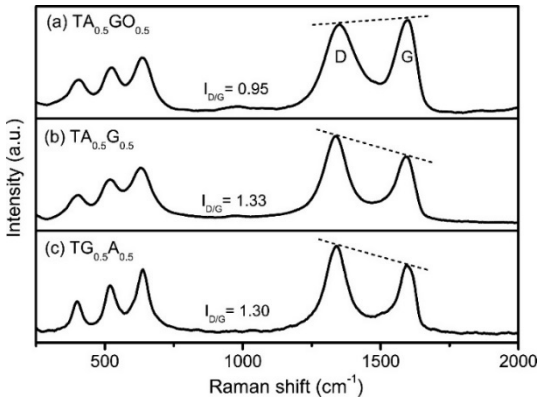

Fig. S3. Raman spectra of samples. (a)$TA_{0.5}GO_{0.5}$, (b) $TA_{0.5}G_{0.5}$ and (c) $TG_{0.5}A_{0.5}$

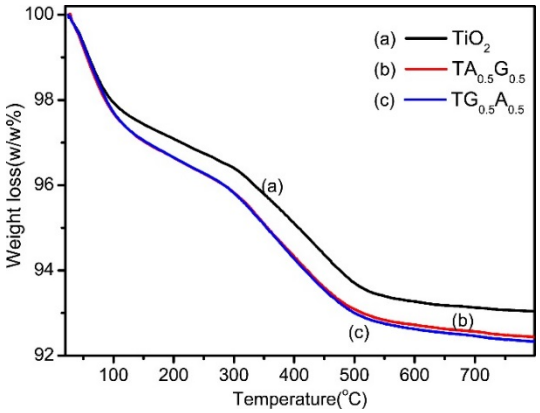

Fig. S4. Thermogravimetric analysis of (a) TiO_2, (b) $TA_{0.5}G_{0.5}$ and (c) $TG_{0.5}A_{0.5}$ samples

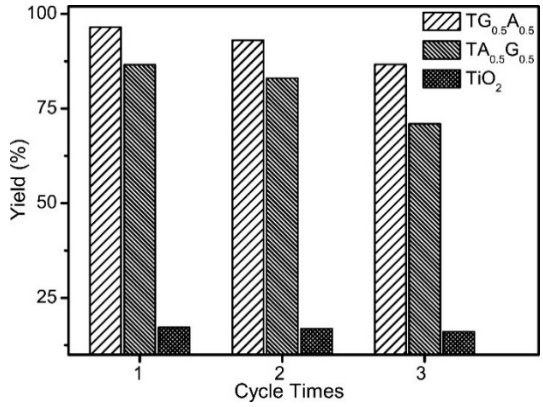

Fig. S5. Yields of 4-aminophenol of recycle experiments using $TG_{0.5}A_{0.5}$, $TA_{0.5}G_{0.5}$ and TiO_2 as photocatalysts.

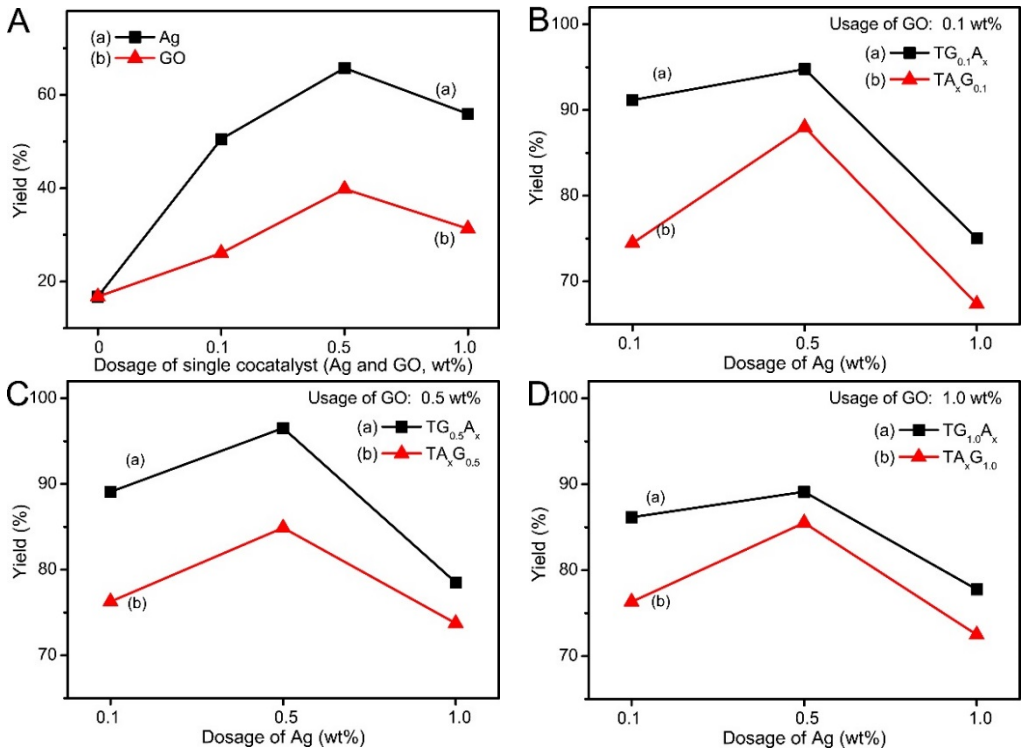

Fig. S6. Yields of 4-aminophenol using different composites. (A) TiO_2 with different dosage of single cocatalyst (a) Ag nanoparticles and (b) graphene; (B-D) The usage of GO sheets in each figure is fixed, which is 0.1, 0.5 and 1.0 wt % in (B), (C) and (D) respectively. While the dosage of Ag is adjusted from 0.1 to 1.0 wt % in two kinds of ternary composites: (a) TGA and (b) TAG samples.