## Fabrication of a three-dimensional visible-light-driven Ag-

## $AgBr/TiO_2/graphene$ aerogel composite for enhanced

## photocatalytic destruction of organic dye and bacteria

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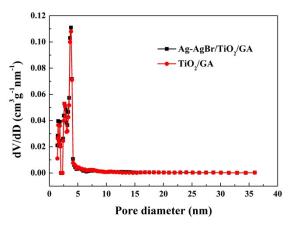
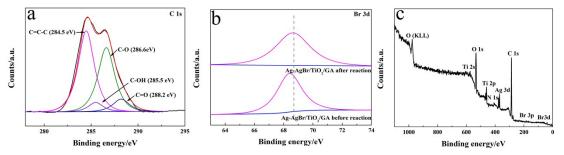


Fig. S1. pore size distributions of TiO<sub>2</sub>/GA and Ag-AgBr/TiO<sub>2</sub>/GA.



**Fig. S2**. (a) high-resolution XPS spectra of the C 1s regions for the GO. (b) high-resolution XPS spectra of the Br 3d regions for the Ag-AgBr/TiO<sub>2</sub>/GA. (c) Full-scale XPS survey spectrum for the Ag-AgBr/TiO<sub>2</sub>/GA.

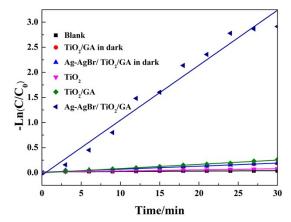


Fig. S3. Kinetic curves of the photocatalytic degradation for asprepared catalysts.

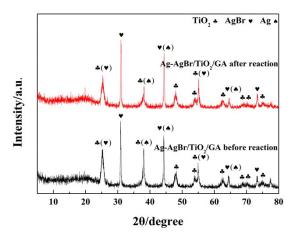
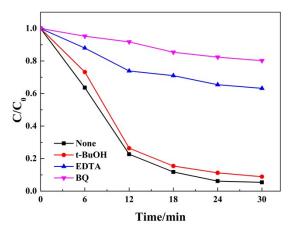


Fig. S4. XRD spectra of the Ag-AgBr/TiO $_2$ /GA before and after the repeated photocatalytic reactions.



**Fig. S5**. The photocatalytic activity of the Ag-AgBr/TiO<sub>2</sub>/GA towards MO degradation with different scavengers under visible light irradiation.