

Electronic Supplementary Information

Ag/TiO₂ and Ag/SiO₂ Composite Spheres: Synthesis, Characterization and Antibacterial Properties

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CAPTIONS:

Fig. S1 SEM image of Ag/SiO₂ composite.

Fig. S2 XRD pattern of Ag/SiO₂ composite (the enlarged view of 2θ range from 5° to 35° in inset).

Fig. S3 XRD pattern of TiO₂ hollow spheres after calcined at 500 °C.

Fig. S4 EDX image of Ag/TiO₂ composite.

Fig. S5 TG curve of Ag₂CO₃/TiO₂·xH₂O.

Fig. S6 FT-IR spectra of (a) CaMg(CO₃)₂, (b) CaMg(CO₃)₂/TiO₂·xH₂O, (c) Ag₂CO₃/TiO₂·xH₂O and (d) Ag/TiO₂ composite.

Fig. S7 XRD patterns of samples obtained with different concentration of AgNO₃ solution.

Fig. S8 SEM images of samples obtained with different concentration of AgNO₃ solution: (a) 0.1 mol/L, (b) 0.3 mol/L and (c) 0.5 mol/L.

Fig. S9 EDX of Ag/TiO₂ composite obtained at different reaction time: (a) 4h and (b) 8 h.

Fig. S10 XRD patterns of Ag/TiO₂ composite obtained at different calcined temperature: (a) 400 °C, (b) 500 °C and (c) 600 °C.

Fig. S11 SEM images of Ag/TiO₂ composite obtained at different calcined temperature: (a) 400 °C, (b) 500 °C and (c) 600 °C.

Fig. S12 The relationship between antibacterial activity and concentration of Ag/TiO₂ composite.

Fig. S13 SEM images of Ag-NPs, SiO₂ and TiO₂ hollow spheres.

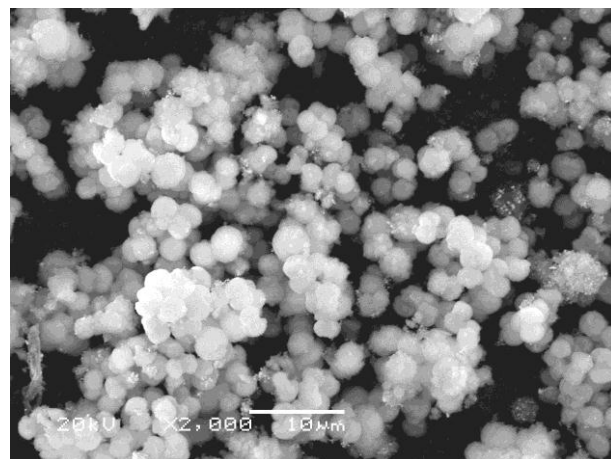


Fig. S1 SEM image of Ag/SiO₂ composite

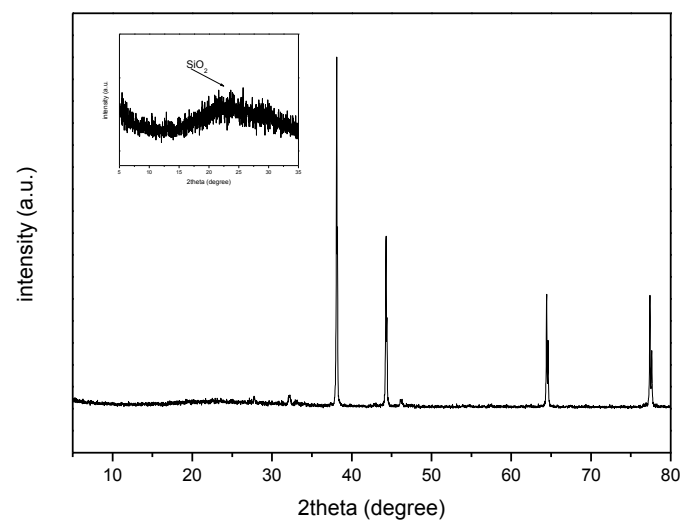


Fig. S2 XRD pattern of Ag/SiO₂ composite (the enlarged view of 2θ range from 5° to 35° in inset).

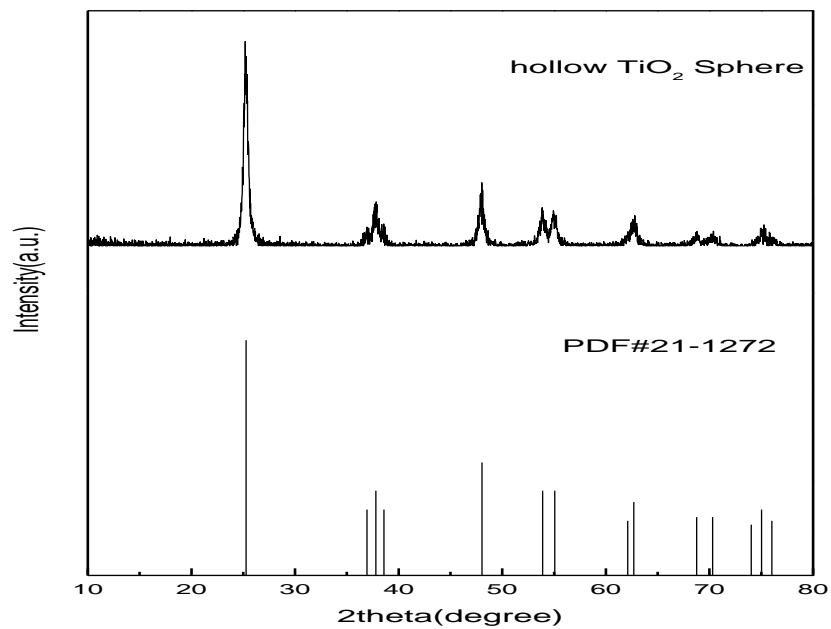


Fig. S3 XRD pattern of TiO₂ hollow spheres after calcined at 500 °C.

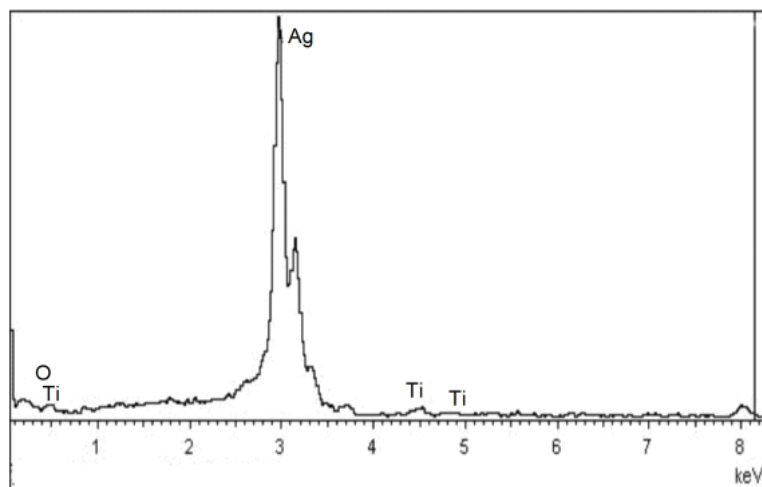


Fig. S4 EDX image of Ag/TiO₂ composite.

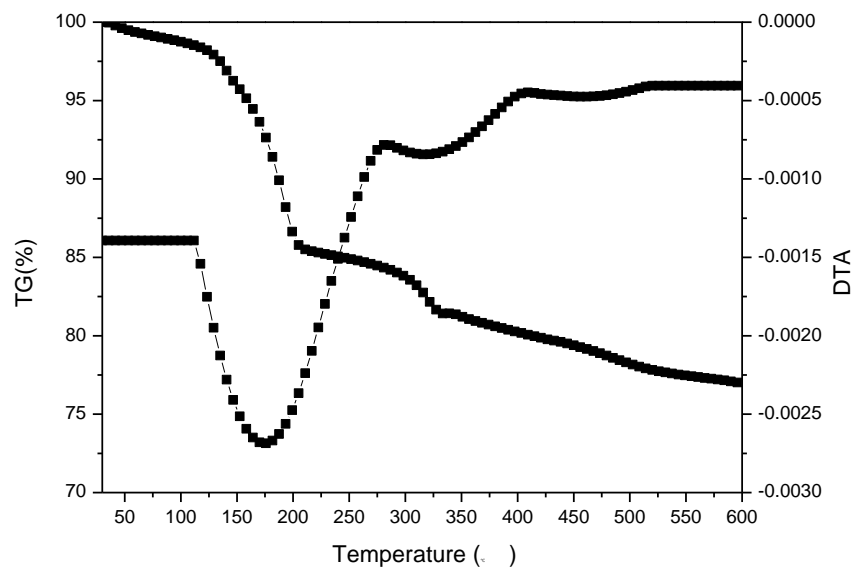


Fig. S5 TG curve of $\text{Ag}_2\text{CO}_3/\text{TiO}_2 \cdot x\text{H}_2\text{O}$.

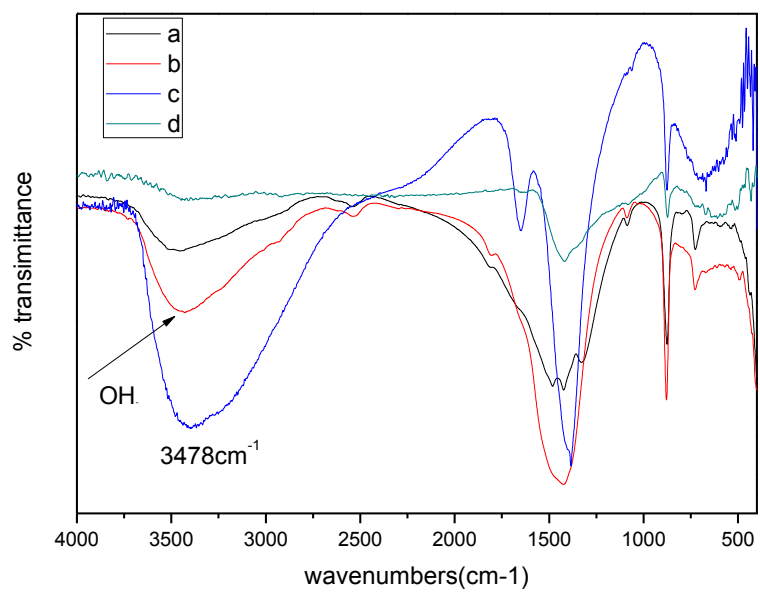


Fig. S6 FT-IR spectra of (a) $\text{CaMg}(\text{CO}_3)_2$, (b) $\text{CaMg}(\text{CO}_3)_2/\text{TiO}_2 \cdot x\text{H}_2\text{O}$, (c) $\text{Ag}_2\text{CO}_3/\text{TiO}_2 \cdot x\text{H}_2\text{O}$ and (d) Ag/TiO_2 composite.

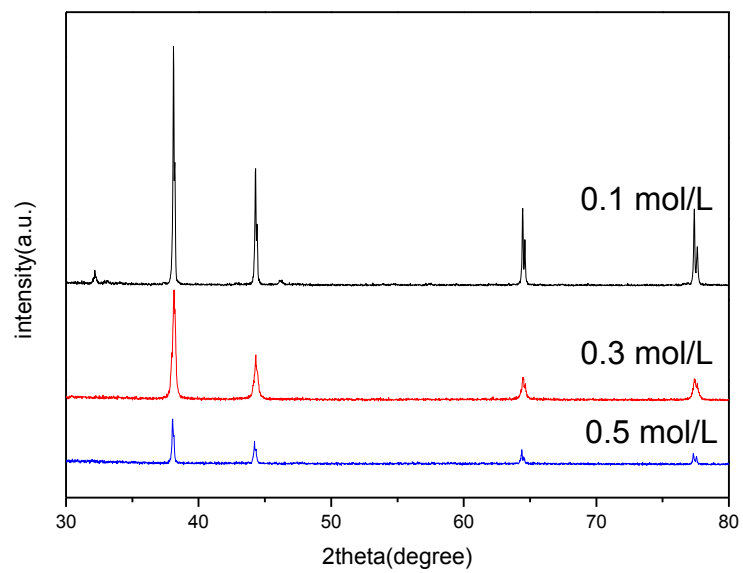


Fig. S7 XRD patterns of samples obtained with different concentration of AgNO_3 solution.

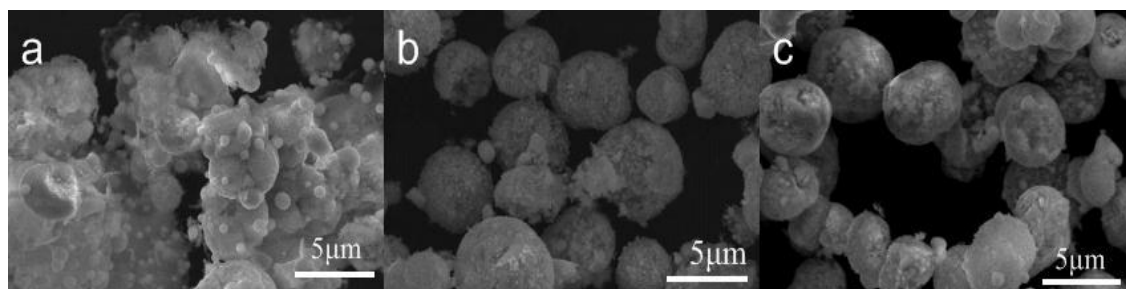


Fig. S8 SEM images of samples obtained with different concentration of AgNO_3 solution: (a) 0.1 mol/L, (b) 0.3 mol/L and (c) 0.5 mol/L.

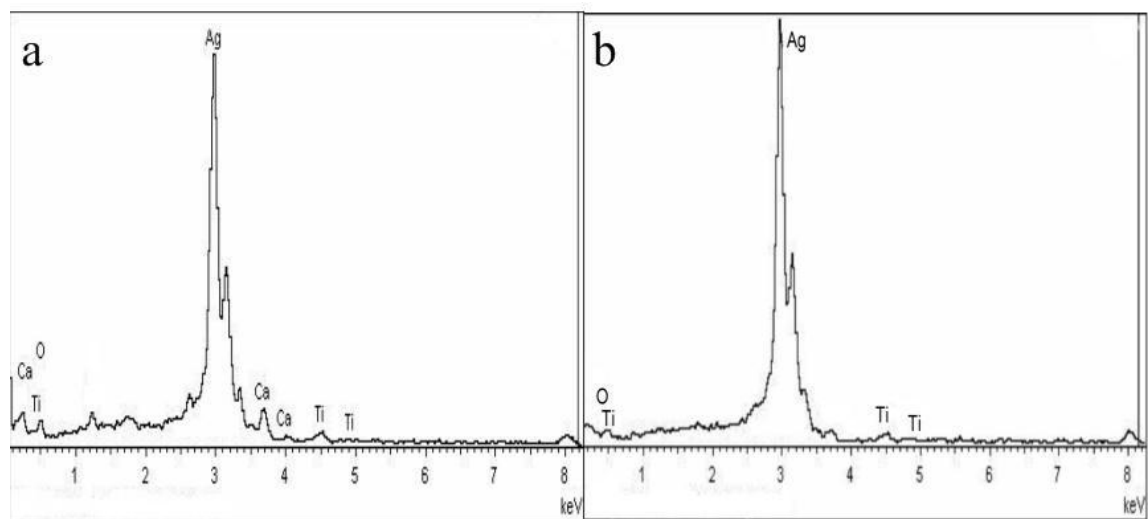


Fig. S9 EDX of Ag/TiO₂ composite obtained at different reaction time: (a) 4h and (b) 8 h.

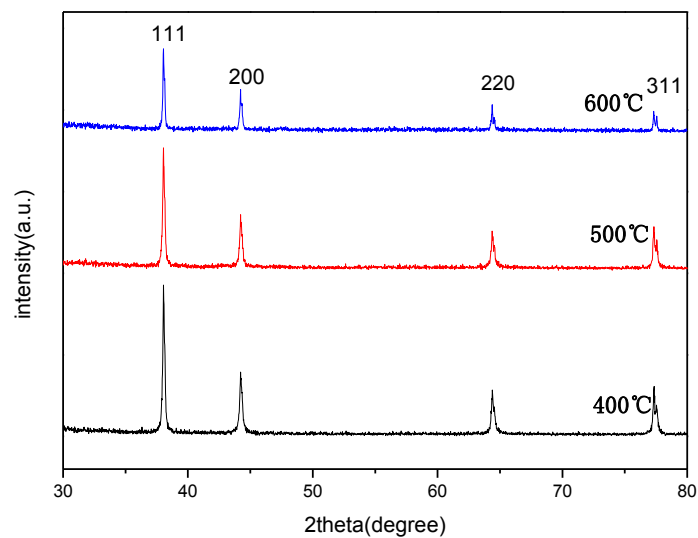


Fig. S10 XRD patterns of Ag/TiO₂ composite obtained at different calcined temperature: (a) 400 °C, (b) 500 °C and (c) 600 °C

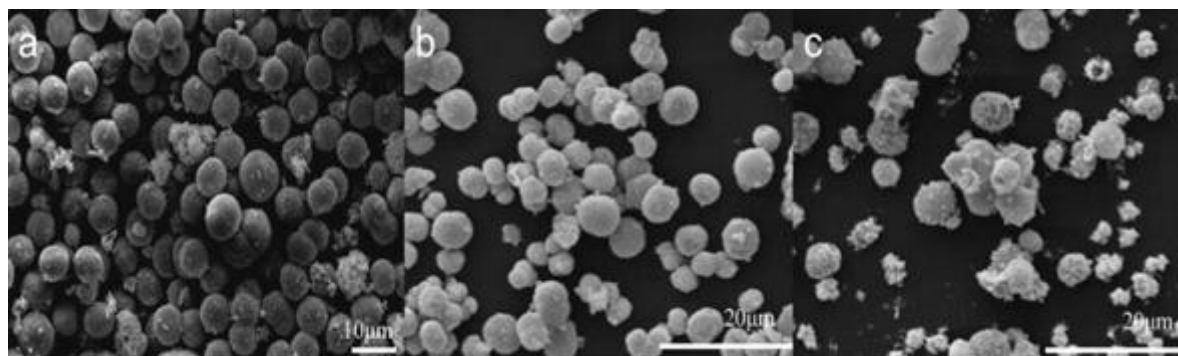


Fig. S11 SEM images of Ag/TiO₂ composite obtained at different calcined temperature: (a) 400 °C, (b) 500 °C and (c) 600 °C.

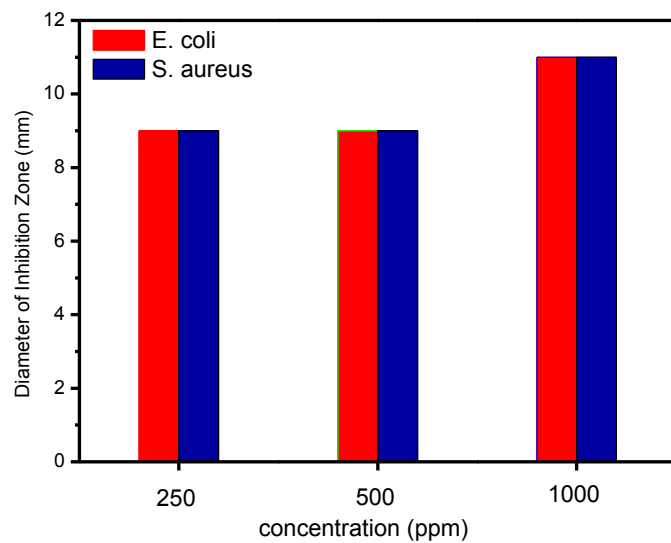


Fig. S12 The relationship between antibacterial activity and concentration of Ag/TiO₂ composite.

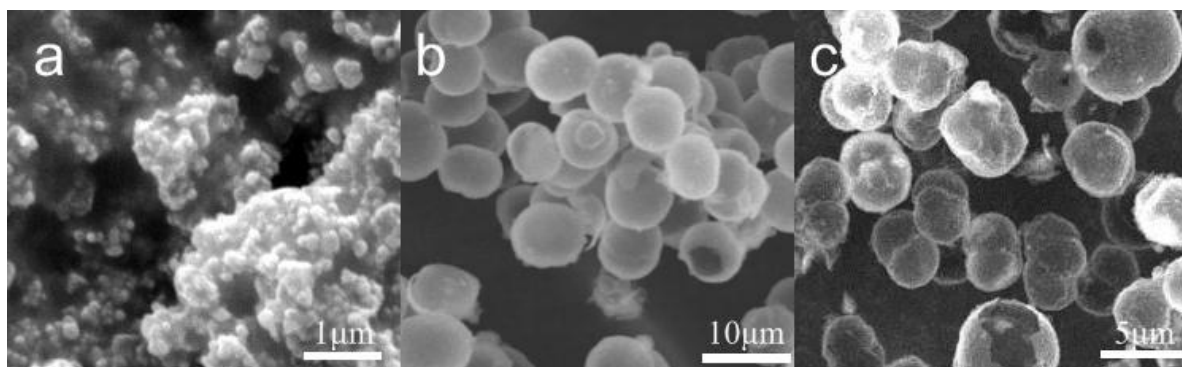


Fig. S13 SEM images of Ag-NPs, SiO₂ and TiO₂ hollow spheres.