

Supporting Information

Biomimetic synthesis of TiO_2 - SiO_2 -Ag nanocomposites with enhanced visible-light photocatalytic activity

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Characterization

1. The thermogravimetry analysis (TGA) was measured by TGA-50, Shimadzu thermogravimetric analyzer with a nitrogen flow of 25 mL min^{-1} .
2. The size of lysozyme-synthesized TiO_2 was measured in water using a Malvern zetasizer nanoZS. Three parallel measurements were conducted for every sample, and the average value was calculated.
3. The surface area and pore-size distribution were evaluated by nitrogen adsorption-desorption measurements, operated at 77 K on TRISTAR-3000 surface area analyzer. All of the samples were degassed at 300 °C for 4 h prior to the measurements. The pore sizes were derived from the adsorption isotherm by employing the Barrett–Joyner–Halenda (BJH) method. The pore volumes were referred to single point adsorption total pore volume of pores and the surface areas were calculated through the BET equation.

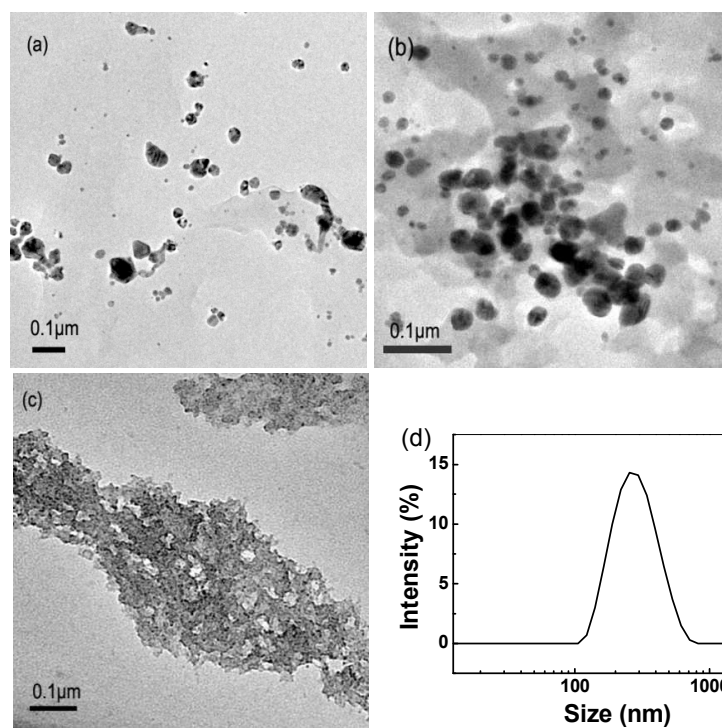


Figure S1. TEM images of lysozyme-synthesized Ag nanoparticles (a), TiO₂-Ag (b), SiO₂ formed through sol-gel process(c), TiO₂ particle distribution measured by DLS method (d).

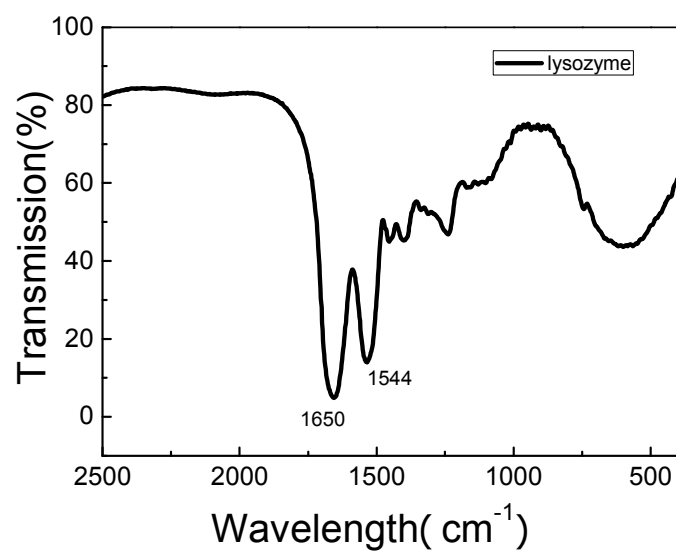


Figure S2. FT-IR of lysozyme

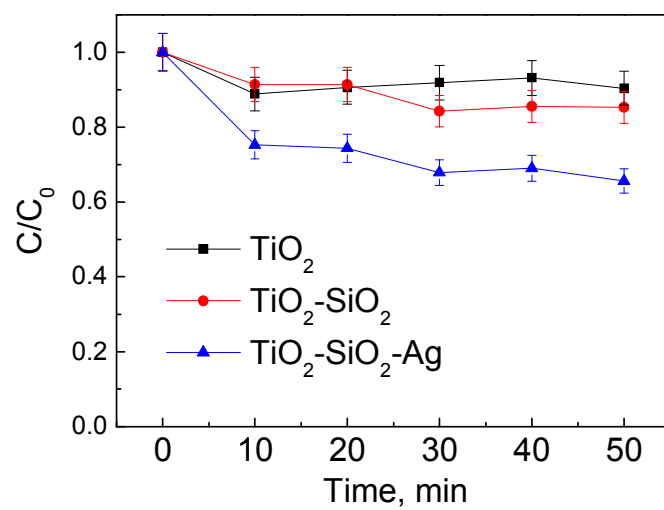


Figure S3. Adsorption of RhB (10mg/L) at room temperature with time on TiO_2 , $\text{TiO}_2\text{-SiO}_2$ and $\text{TiO}_2\text{-SiO}_2\text{-Ag}$ photocatalysts