

Supporting information

Enhanced Photocatalytic Activity of Hollow TiO₂-Au-TiO₂ Sandwich Structured Nanocomposite

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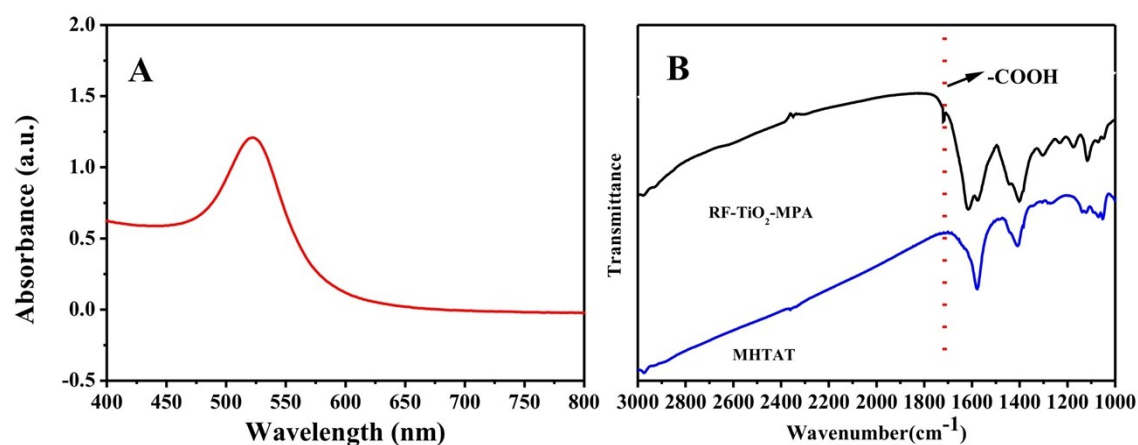


Figure S1. (A) UV-vis spectra of the Au nanoparticles (B) FTIR spectra of the RF-TiO₂-MPA and MHTAT nanocomposites.

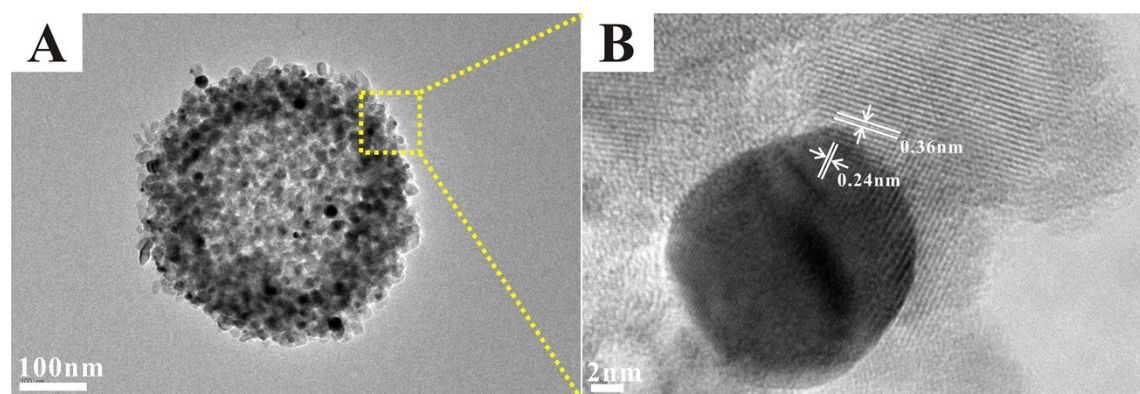


Figure S2. (A) TEM images of the MHTAT sandwich nanocomposites. (B–C) HRTEM images obtained from the area marked with as yellow ellipse from the left image.

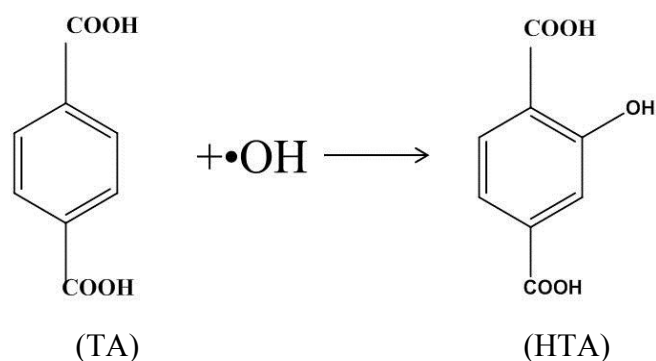


Figure S3. The reaction between $\bullet\text{OH}$ radicals and terephthalic acid

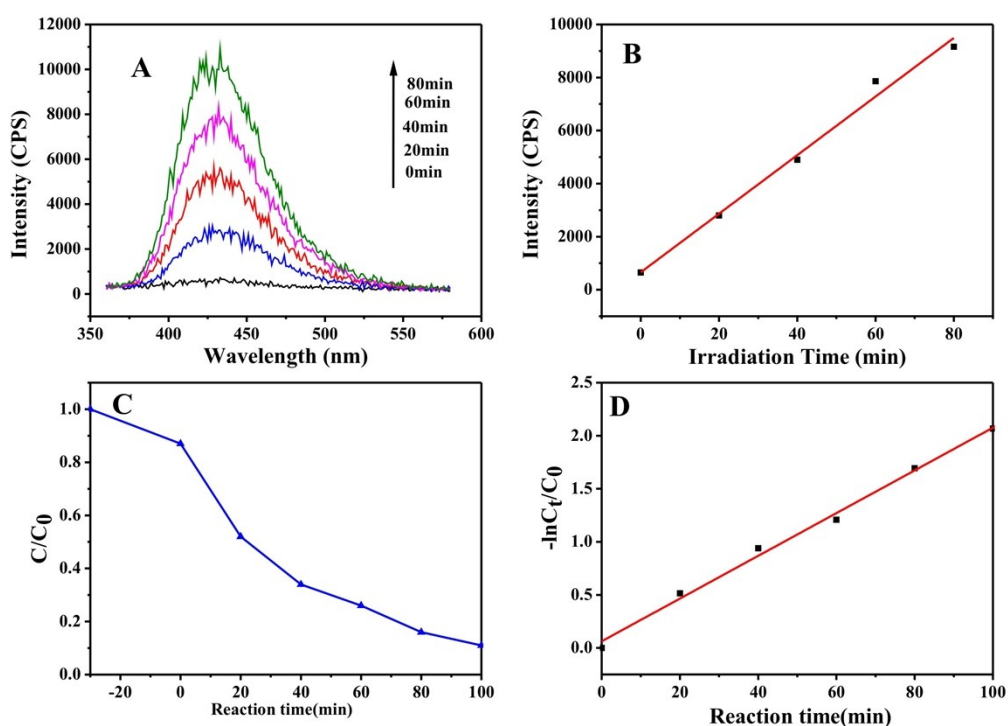


Figure S4. (A) Fluorescence spectral changes with visible-light irradiation time on the MHTAT composite sample in a 5×10^{-4} M basic solution of TA (excitation at 315). (B) Plots of the induced PL intensity (at $\lambda = 426\text{nm}$) against irradiation. (C) Evolution of MO concentration versus reaction time. (D) apparent reaction rate constant under simulated daylight irradiation in the presence of MHTAT.

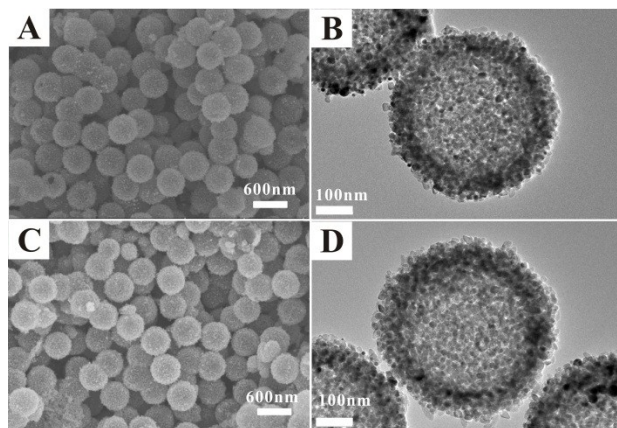


Figure S5. (A) SEM and (B) TEM image of MHTAT nanocomposites before photocatalytic reaction. (C) SEM and (D) TEM image of MHTAT nanocomposites after five successive cycles of reaction.

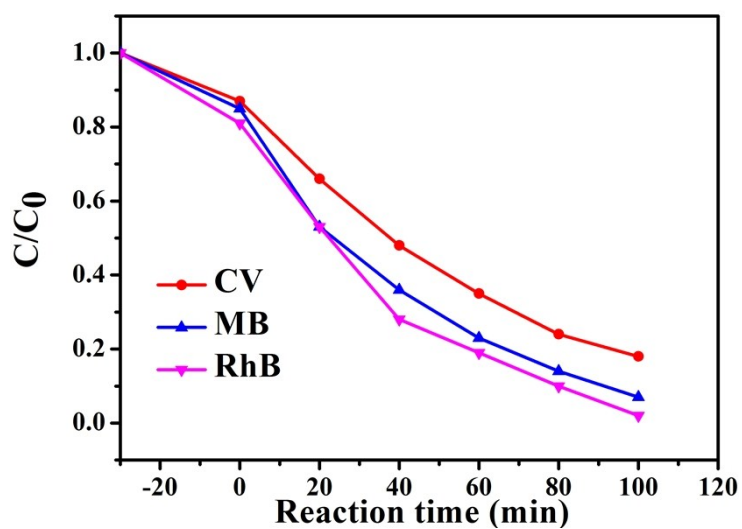


Figure S6. Photodegradation of RhB, methylene blue, crystal violet with MHTAT sandwich-structured catalyst under simulated daylight irradiation.