## **Supplementary Materials**

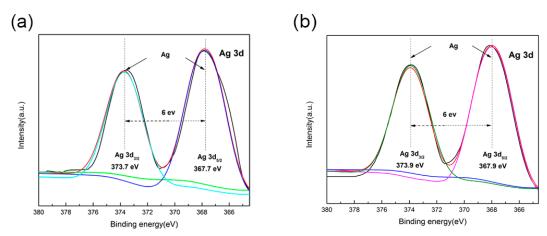


Figure S1. Ag 3d high resolution spectra of Ag@TiO2 NPs-1 (a) and Ag@TiO2 NPs-0.25 (b).

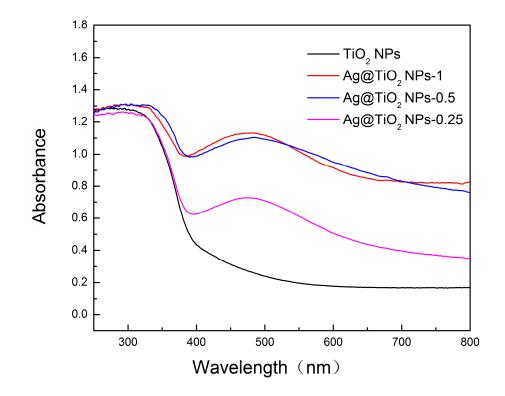


Figure S2. Optical absorption spectroscopy.

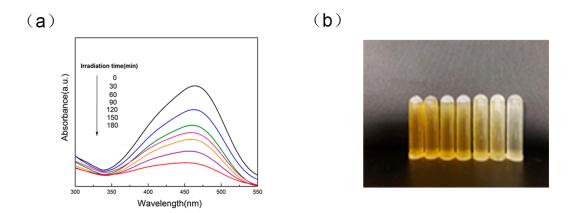
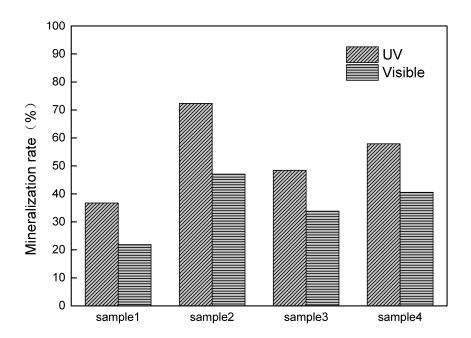


Figure S3. UV absorption spectrum during MO degrade process under UV light.



**Figure S4.** Mineralization rates of MO by the samples under UV and Visible light irradiation. Samples 1–4 denote pure TiO<sub>2</sub> NPs, Ag@TiO<sub>2</sub> NPs-0.5, Ag@TiO<sub>2</sub> NPs-0.25 and Ag@TiO<sub>2</sub> NPs-1.