Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A

Electronic supporting informations

Ti^{3+} self-doped TiO_X@anatase core/shell structure with enhanced visible light photocatalytic activity

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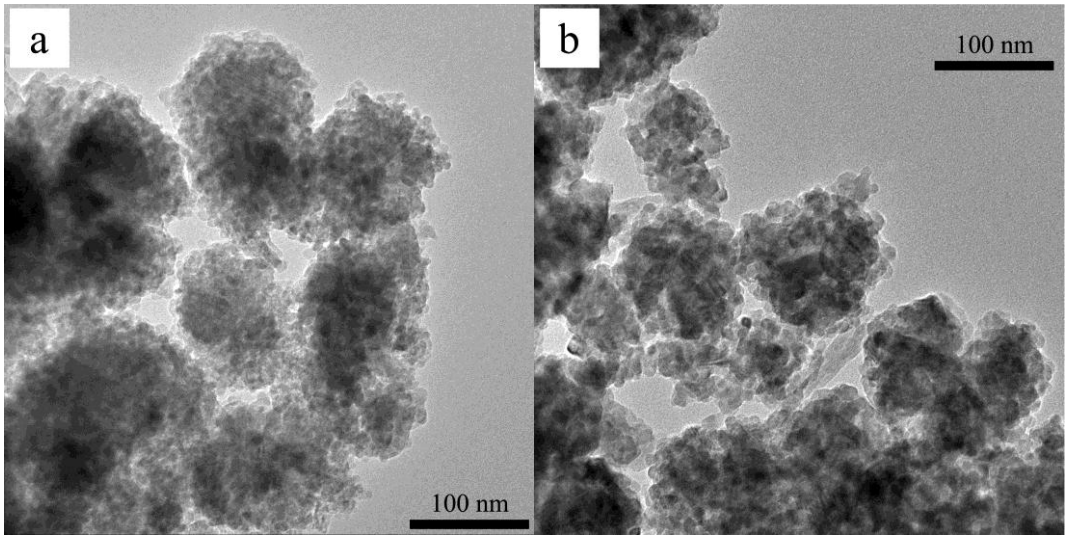

Fig. S1 The (HR)TEM images of T-723 and T-823.

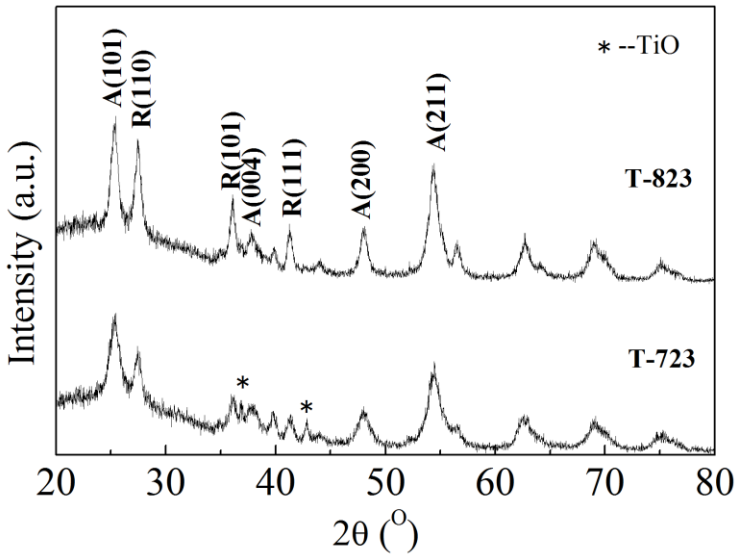

Fig. S2 XRD patterns of T-723 and T-823.

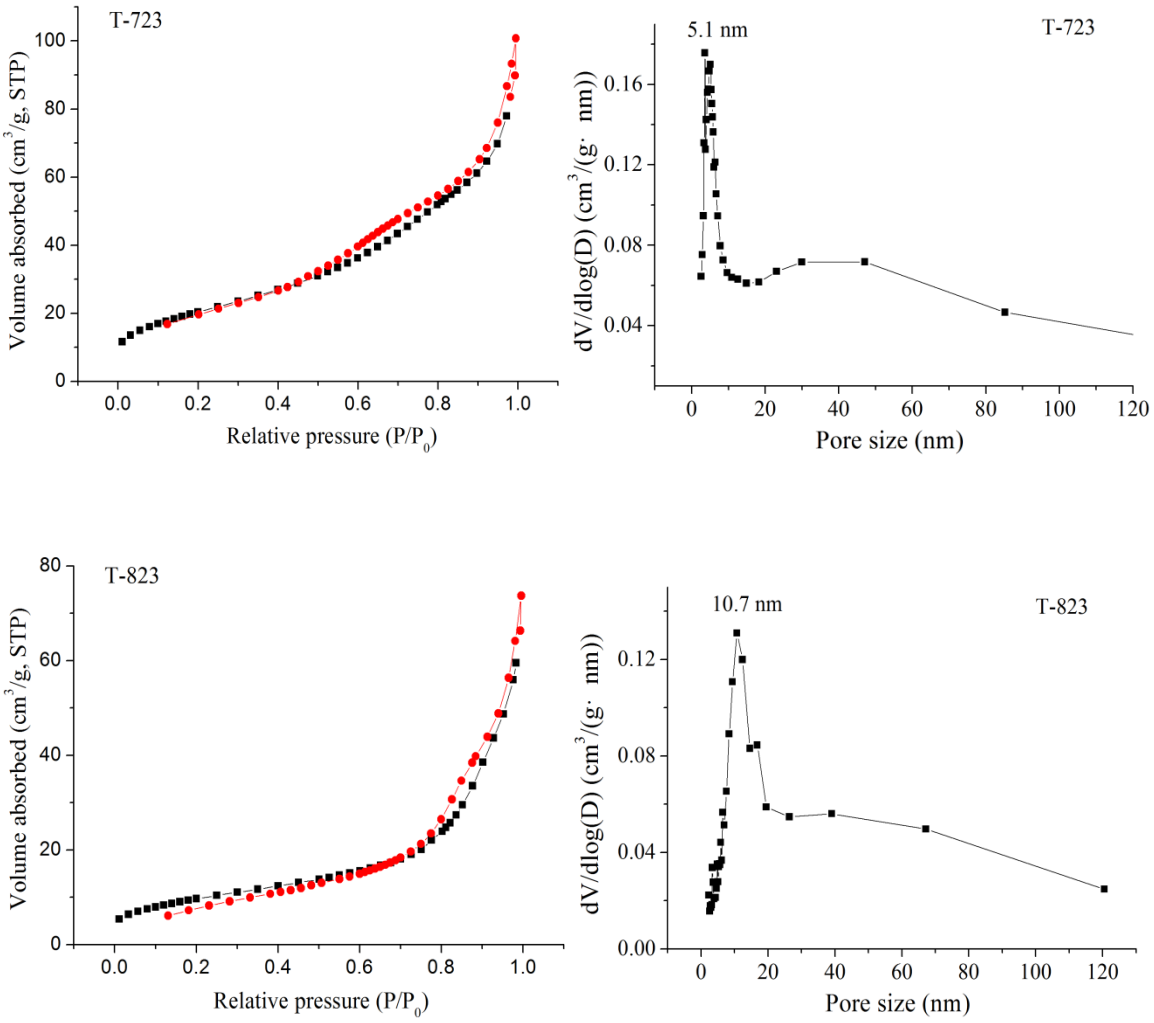

Fig. S3 N_2 adsorption-desorption isotherms (left) and corresponding pore size distribution (PSD) curves (right) of T-723 and T-823.

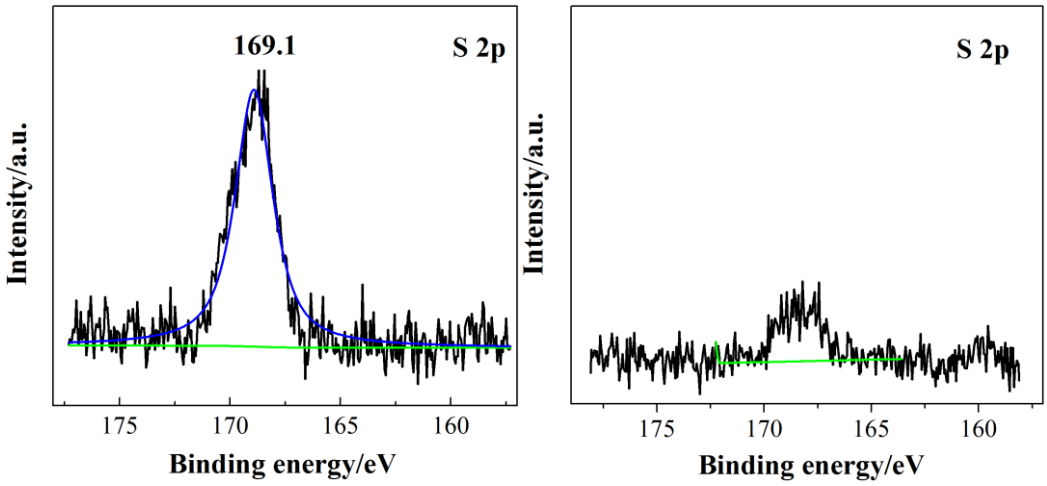

Fig. S4 S2p spectrum of T-773 before (left) and after (right) visible light irradiation in water for 3 h.

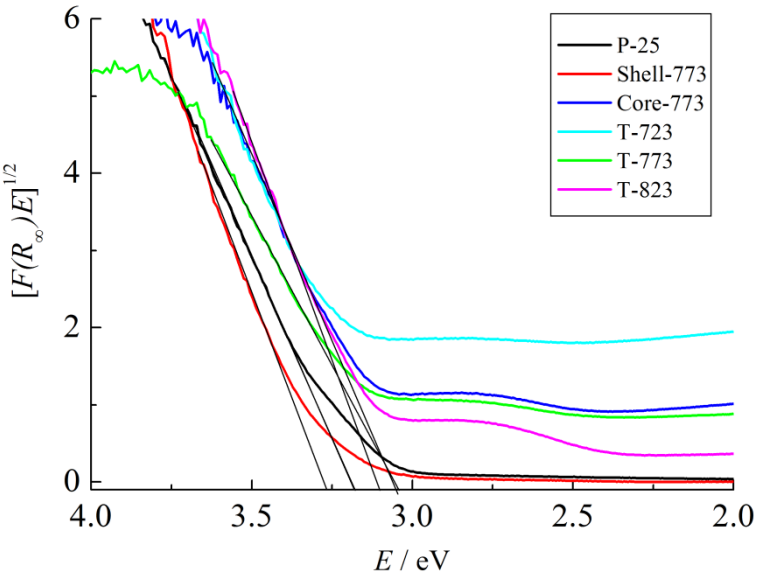

Fig. S5 The modified plot (E = energy of exciting light) leads to band gaps of P-25, TiO_x@anatase samples, Shell-773 and Core-773. $F(R_\infty) = (1- R_\infty)^2/2R_\infty$, $R_\infty = R_{sample}/ R_{standard}$.

To obtain the band gaps (E_g) of samples, the modified Kubelka-Munk function is plotted as function of E. Extrapolation of the linear part of the resulting curve affords the E_g of P-25(3.27 eV), Shell-773(3.18 eV), Core-773(3.03 eV), T-723(3.04 eV), T-773(3.04 eV) and T-823(3.10 eV).

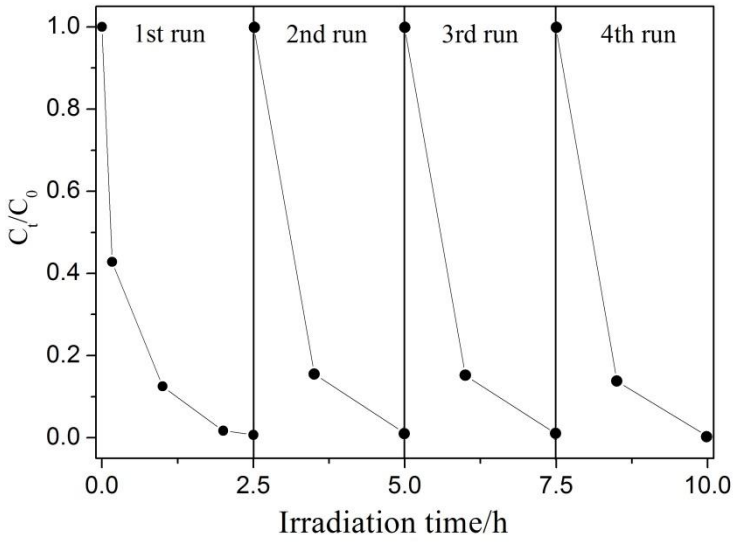

Fig. S6 Cycling runs in the photocatalytic degradation of Rh.B in the presence of T-773 under visible-light irradiation.