Supplementary Materials

Sn(IV)porphyrin-anchored TiO_2 Nanoparticles via Axial-Ligand Coordination for Enhancement of Visible Light-activated Photocatalytic Degradation

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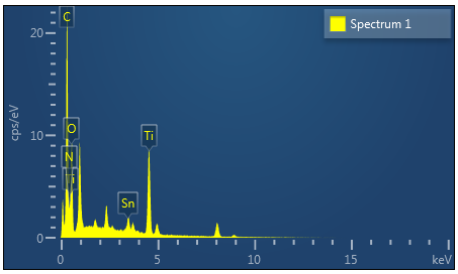

Element	Weight %	Atomic %
C	41.01	57.30
N	1.26	1.52
O	30.53	32.10
Ti	24.89	8.74
Sn	2.31	0.34
Total:	100.00	100.00

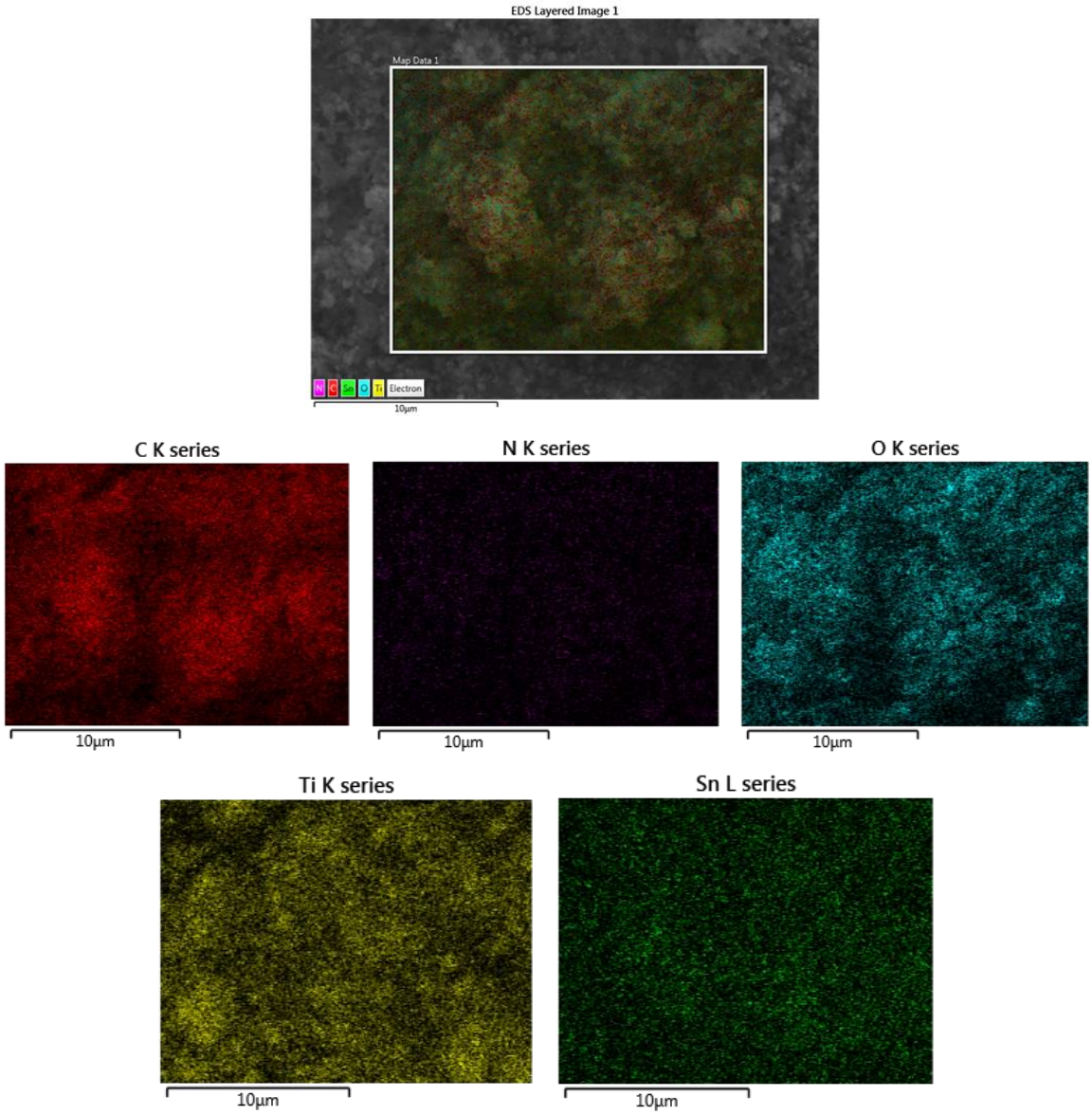

Figure S1. Energy dispersive X-ray spectroscopy (EDS) elemental maps (C, N, O, Ti, and Sn) of SnP/AA@TiO_2.

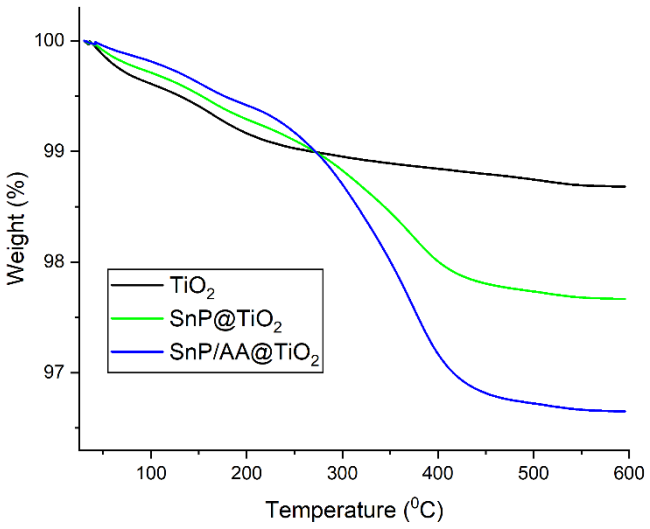

Figure S2. TGA curves of TiO_2, $SnP@TiO_2$, and $SnP/AA@TiO_2$.

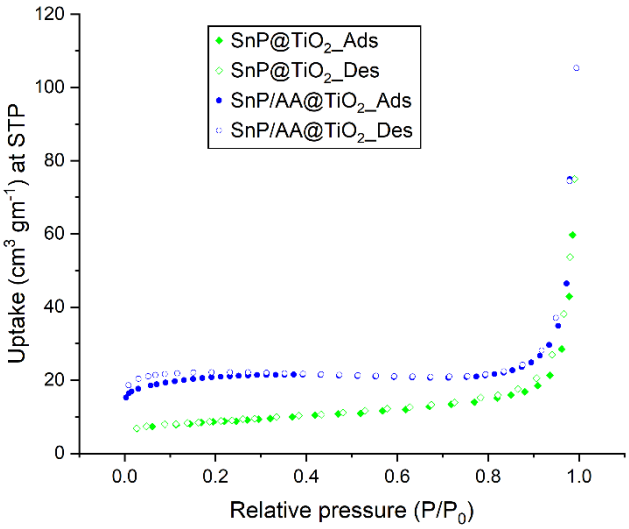

Figure S3. N_2 adsorption-desorption isotherms of $SnP@TiO_2$, and $SnP/AA@TiO_2$.

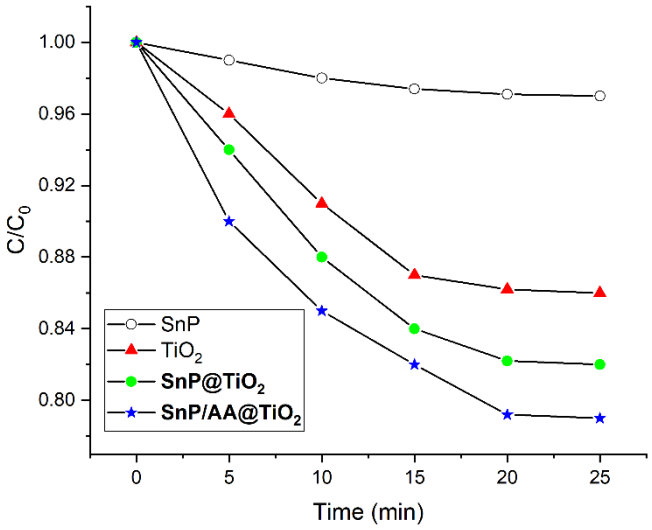

Figure S4. RhB adsorption ability of SnP, TiO_2, SnP@TiO_2, and SnP/AA@TiO_2.

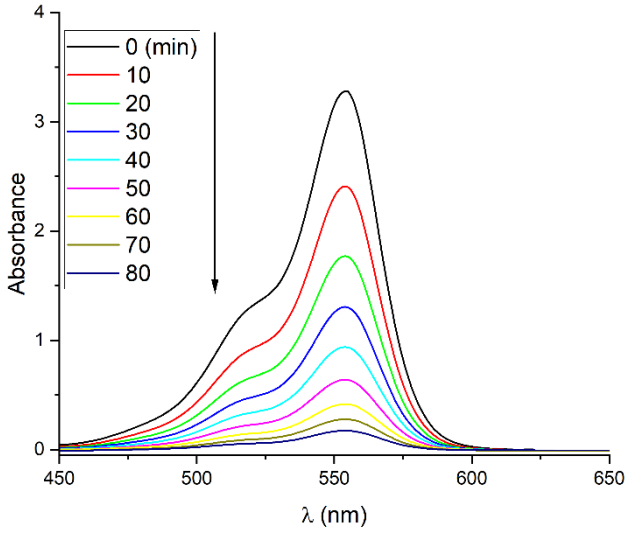

Figure S5. Photocatalytic degradation of RhB dye in aqueous solution by SnP/AA@TiO_2 under visible-light irradiation.

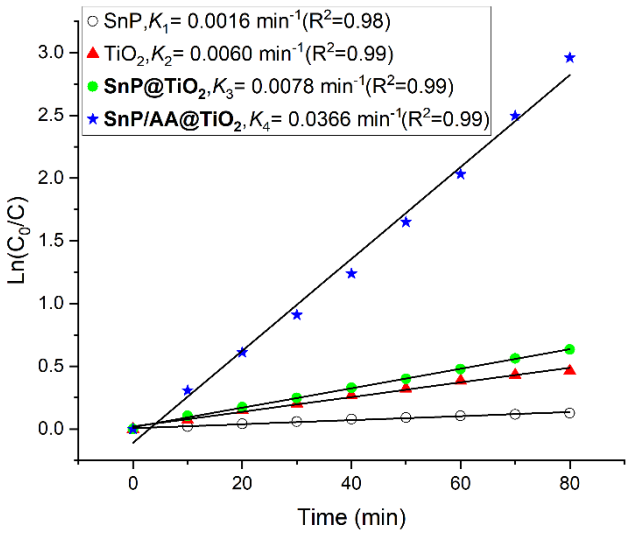

Figure S6. Kinetics for the photocatalytic degradation of RhB dye by SnP, TiO_2, SnP@TiO_2, and SnP/AA@TiO_2 photocatalysts under visible-light irradiation.

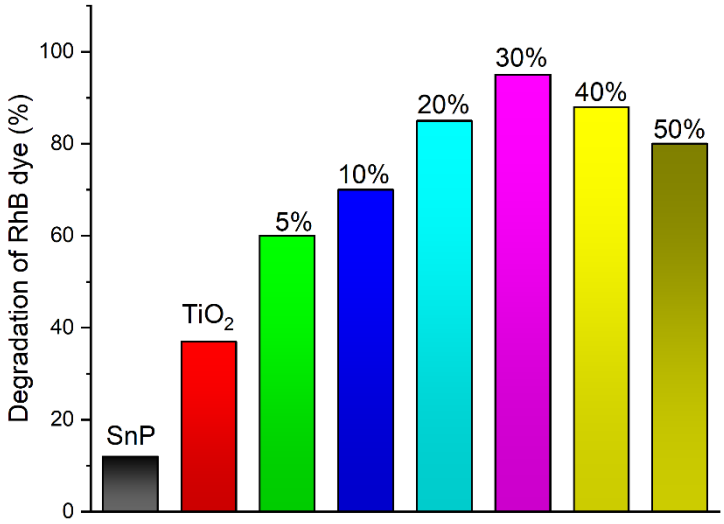

Figure S7. Comparison of RhB dye degradation in presence of SnP, TiO_2, and SnP/AA@TiO_2 with various wt% of SnP with respect to TiO_2.

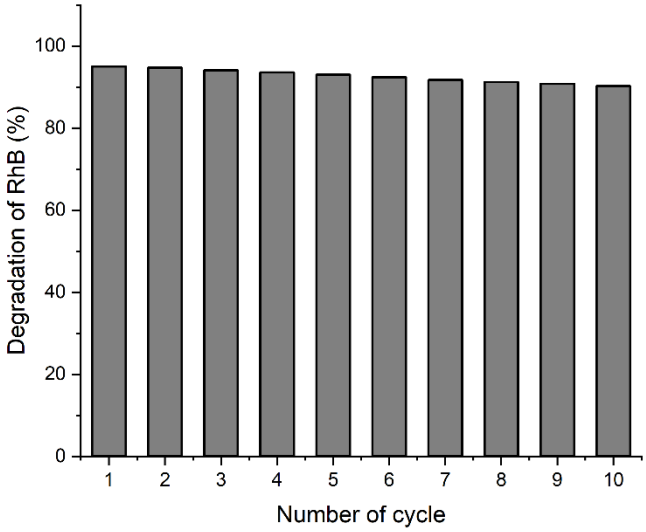

Figure S8. Recyclability of SnP/AA@TiO_2 composite photocatalyst in RhB degradation.

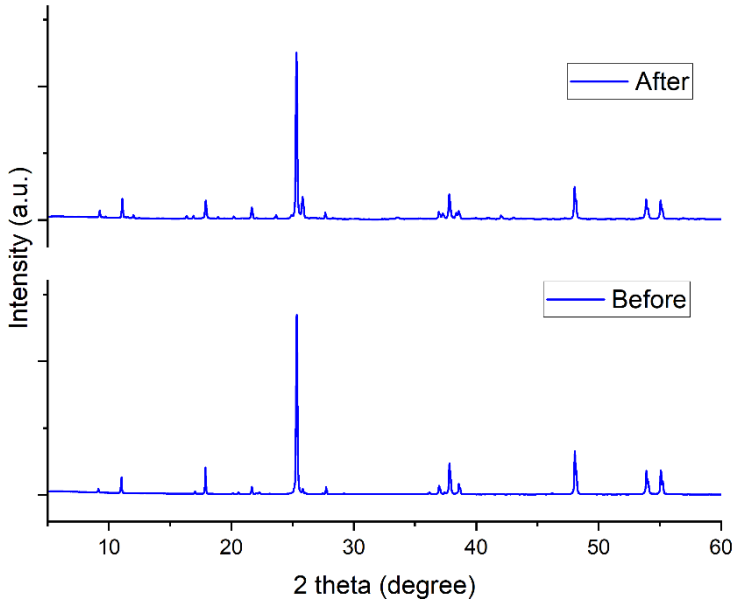

Figure S9. XRD of SnP/AA@TiO_2 composite photocatalyst before and after RhB degradation.

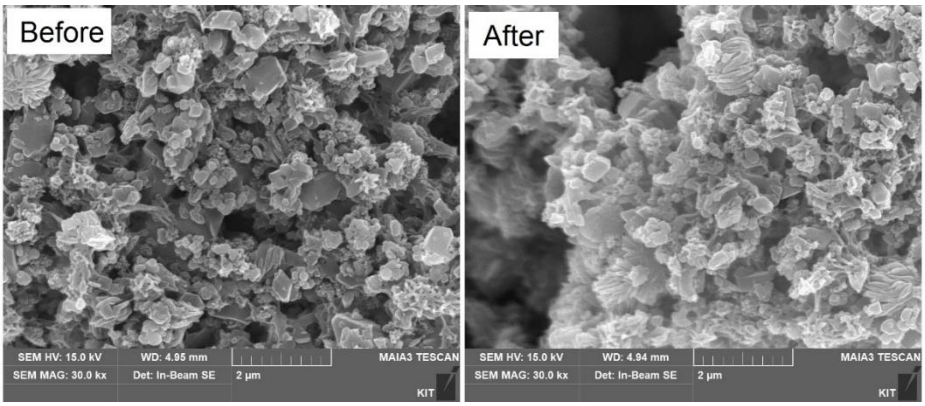

Figure S10. FE-SEM images of SnP/AA@TiO_2 composite photocatalyst before and after RhB degradation.

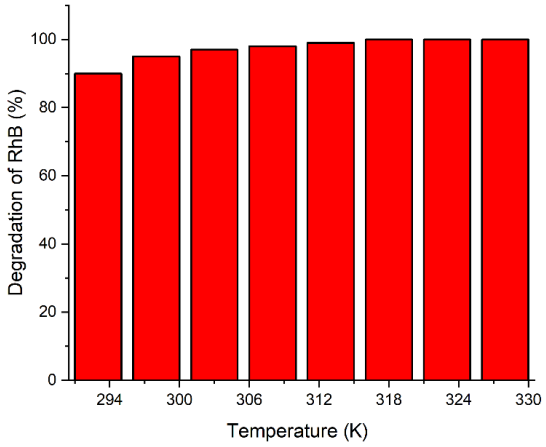

Figure S11. Effect of temperature on RhB degradation in the presence of SnP/AA@TiO_2 composite photocatalyst.

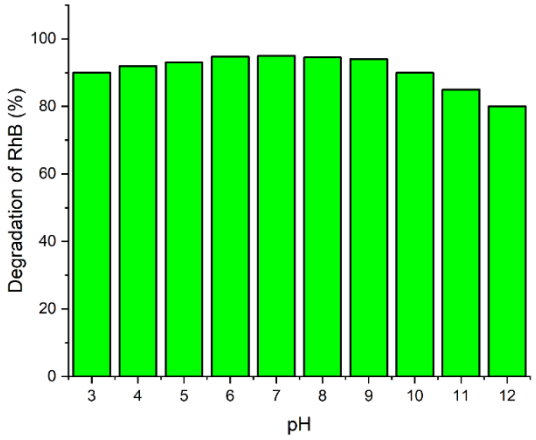

Figure S12. Effect of pH of the solution on RhB degradation in the presence of SnP/AA@TiO_2 composite photocatalyst.

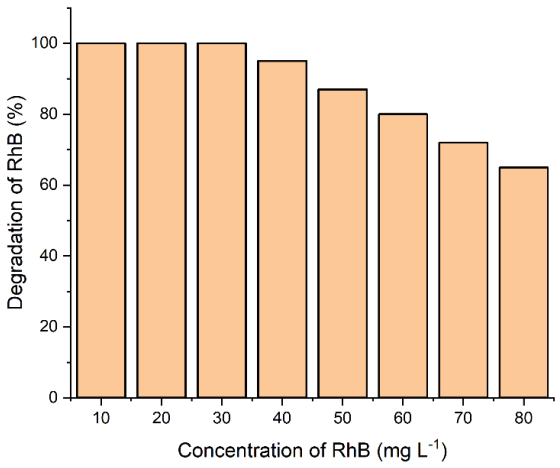

Figure S13. Effect of initial concentration of RhB on dye degradation using 50 mg of SnP/AA@TiO_2 composite photocatalyst.

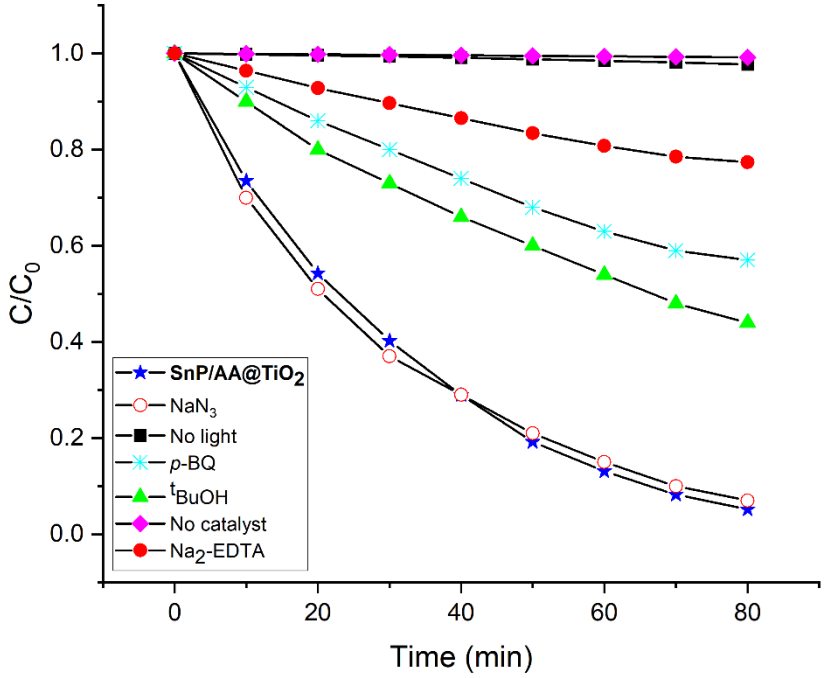

Figure S14. Photocatalytic degradation of RhB dye in aqueous solution by SnP/AA@TiO_2 composite photocatalyst with the addition of different scavengers under visible-light irradiation ($[Na_2\text{-EDTA}]_0$ = $[p\text{-BQ}]_0$ = $[^tBuOH]_0$ = 5 mM, pH 7.0, T = 298 K).

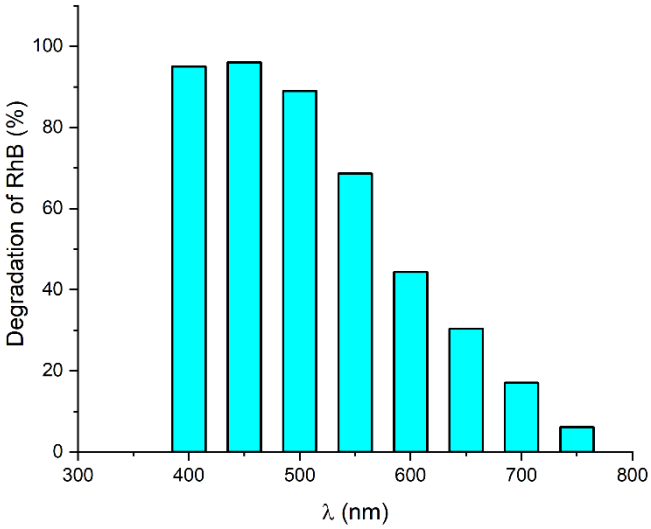

Figure S15. Photocatalytic activity of SnP/AA@TiO_2 at different wavelengths for the degradation of RhB dye.

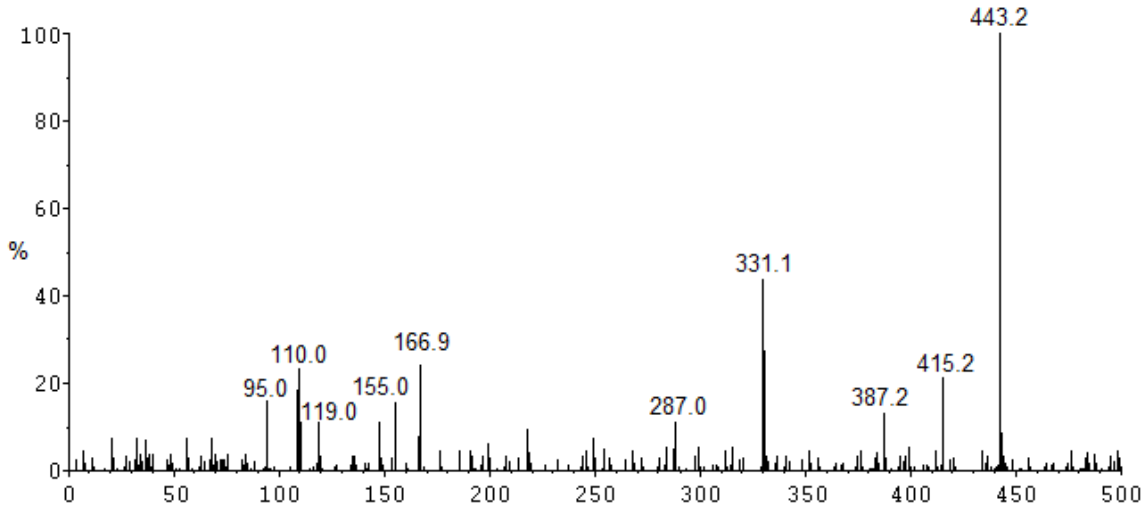

Figure S16. ESI-MS spectrum (positive ion mode) of the reaction mixture of RhB dye with the SnP/AA@TiO_2 composite photocatalyst after 40 min of visible-light irradiation.