

Photocatalysis

Photocatalytic decomposition of Rhodamine B (RhB) was carried out in a beaker containing a suspension of 100 mg sample in 100 mL RhB solution (10 mg/L) under UV light irradiation. UV light was produced by Hg lamp with the main wave crest at 365 nm, and visible light was produced by pressure xenon lamp irradiation (250 W) with UV filter. During the photodegradation, the temperature was kept at 0°C. Before the irradiation, the suspensions were magnetically stirred in the dark for 120 min to ensure the adsorption/desorption equilibrium. At given time intervals, 3 mL aliquots were sampled and filtered to remove the catalysts. The filtrates were analyzed by recording the variations of the absorption band maximum (554 nm) in the UV-Vis spectrum of RhB using a TU-1901 spectrophotometer.

Figure S1

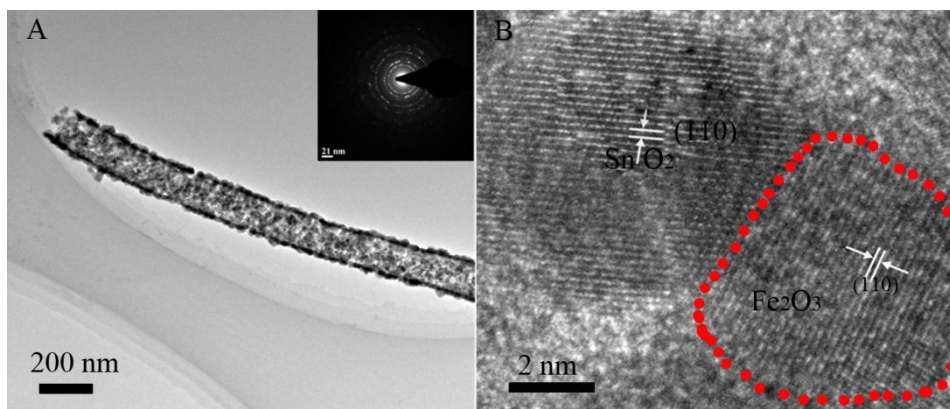


Figure S1 A)TEM image of Fe₂O₃/SnO₂/Fe₂O₃, the inset is the SAED pattern;
B)HRTEM image of Fe₂O₃/SnO₂/Fe₂O₃

Figure S2

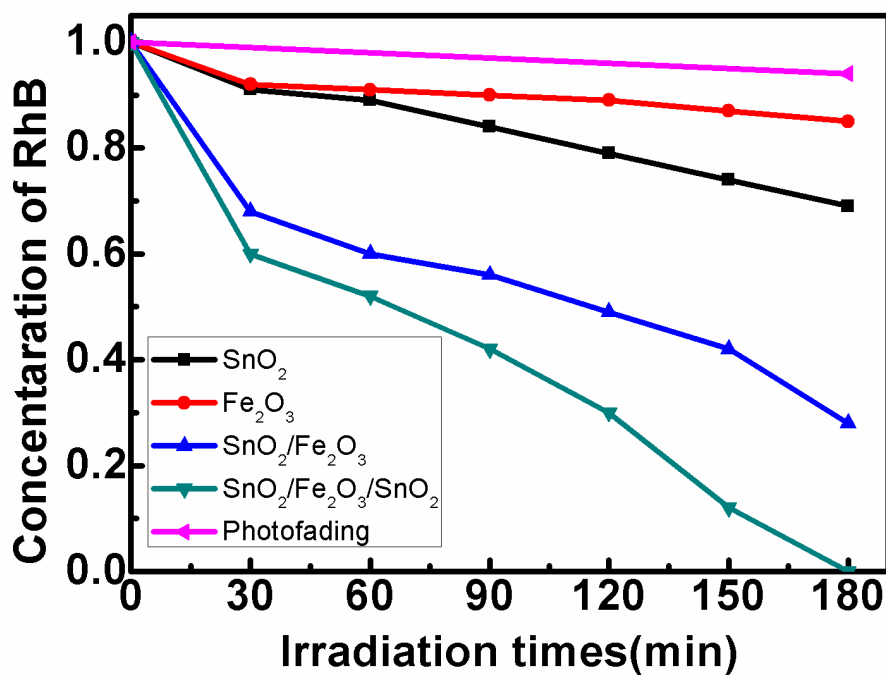


Figure S2 Concentration of RhB (from the optical absorbance measurements at about 554 nm) in the suspension with different photocatalysts (Fe₂O₃/SnO₂/Fe₂O₃ nanotubes, SnO₂/Fe₂O₃ nanotubes, SnO₂ nanotubes, Fe₂O₃ nanofibers, and RhB photofading) versus the exposure time under visible light irradiation.

Figure S3

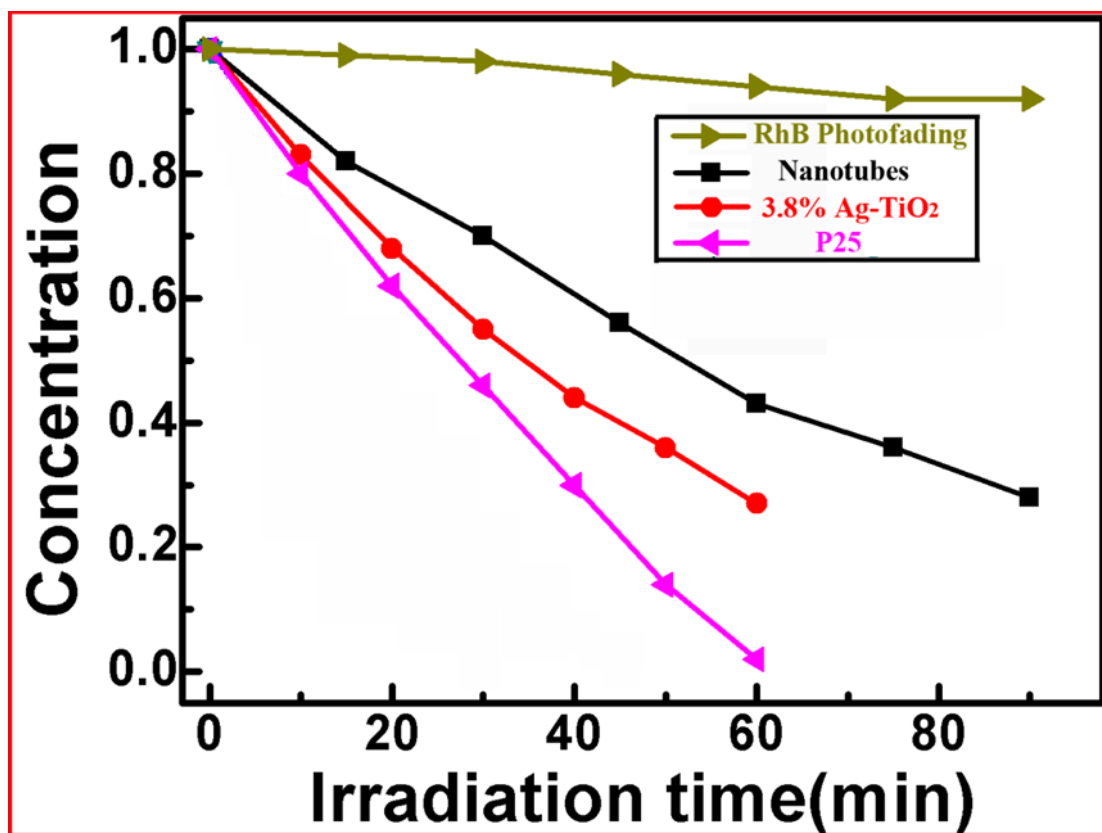


Figure S3 Concentration of RhB (from the optical absorbance measurements at 554 nm) in the solution with different photocatalysts versus the exposure time to UV irradiation. 3.8% Ag-TiO₂ it means the Ag content is 3.8%.