

Supporting Information

Rational design of polypyrrole-based competent bifunctional magnetic nanocatalyst

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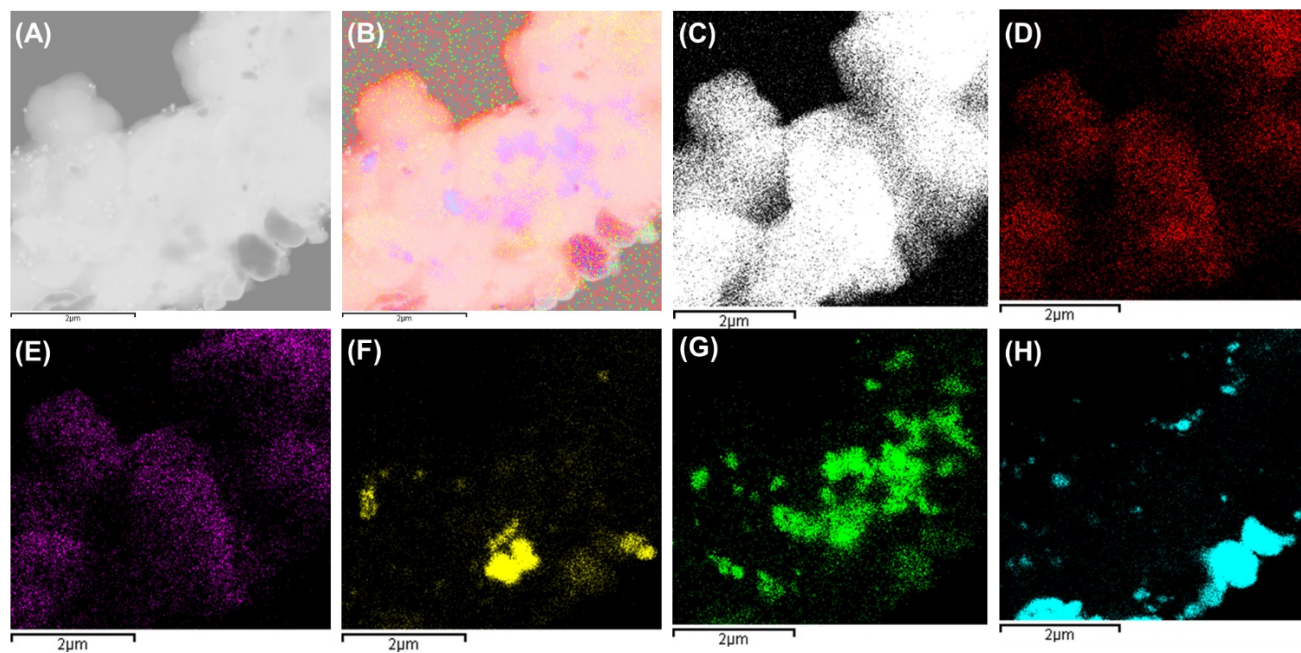


Figure S1. Elemental mapping of MTPS nanocomposite; image used for mapping (A), all elements distribution (B), carbon distribution (C), oxygen distribution (D), nitrogen distribution (E), iron distribution (F), titanium distribution (G) and silver distribution (H).

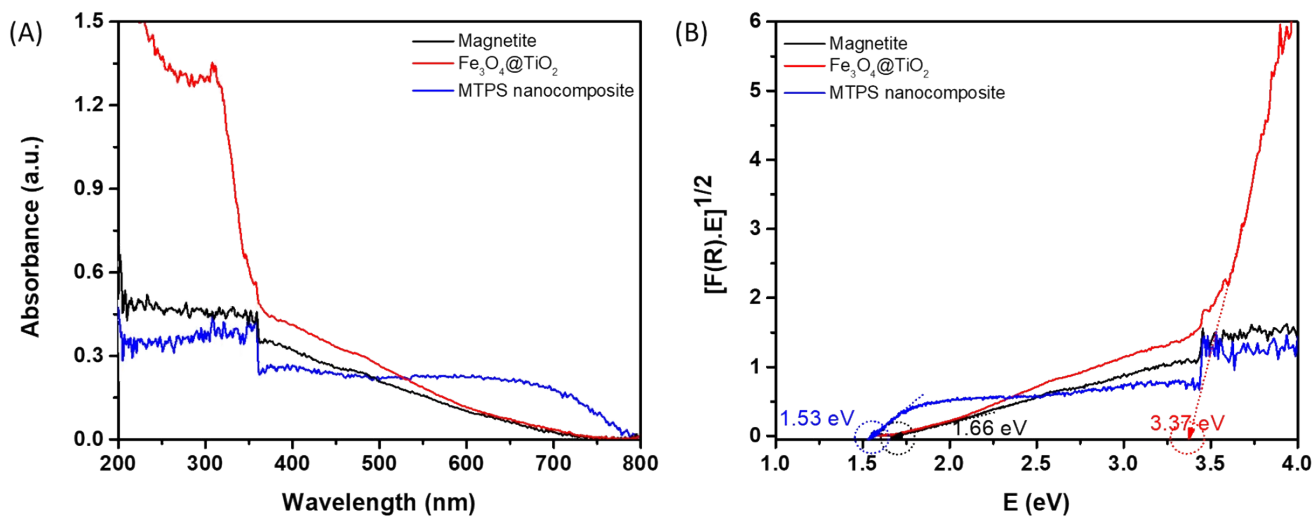


Figure S2. UV-vis DRS (A) and the band gaps (B) of the as-synthesized nanomaterials.

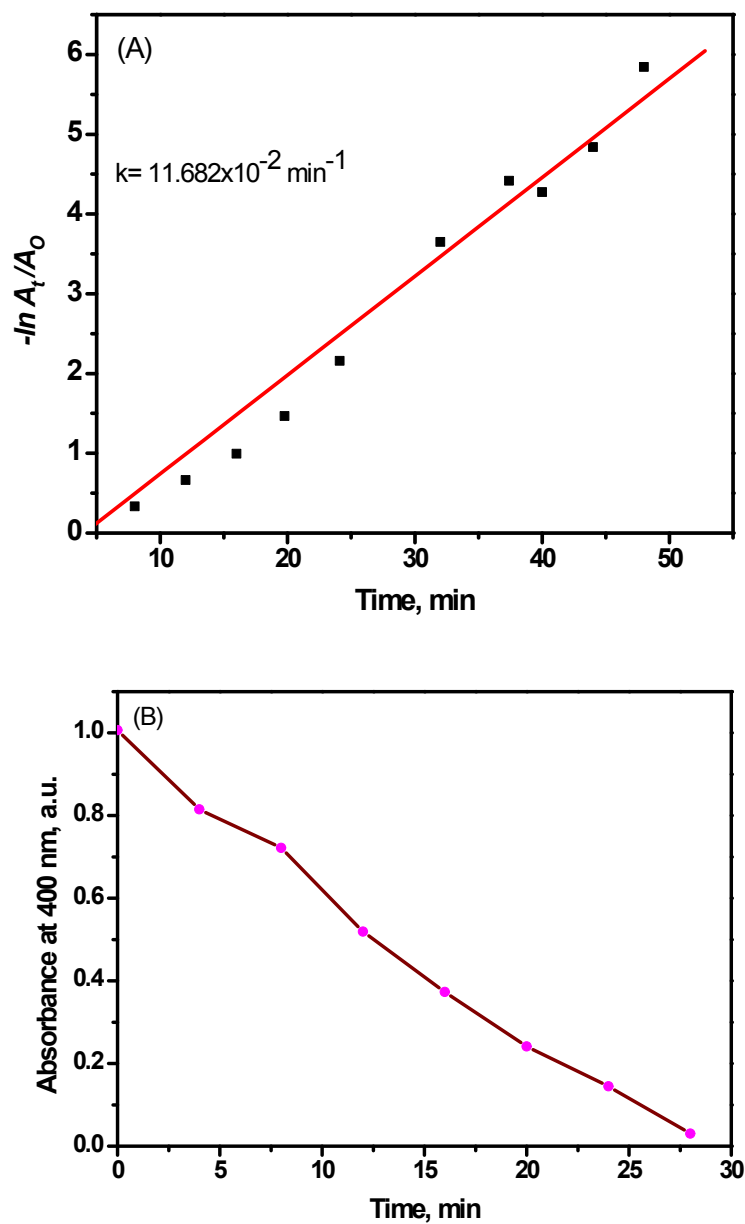


Figure S3. $-\ln A_t/A_o$ vs. time (A) and time-dependent change of the absorbance at 400 nm (B) for the reduction reaction of PNP by NaBH₄ using MTPS nanocatalyst.

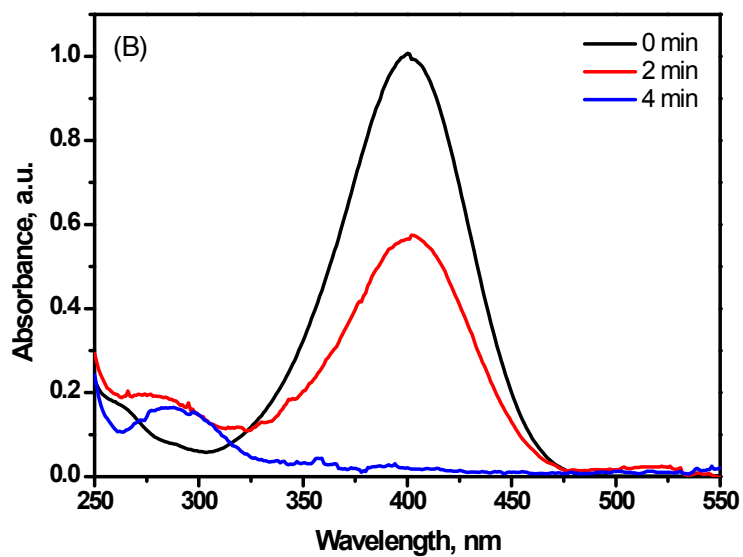
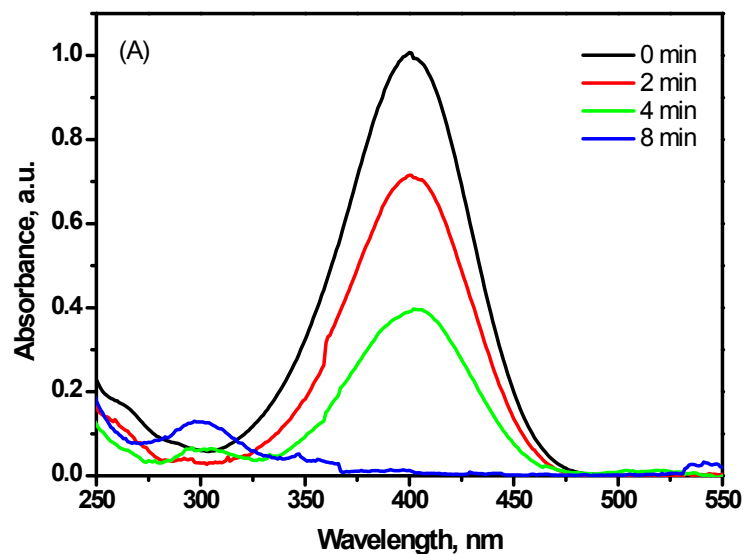


Figure S4. UV-vis spectra for reduction of PNP to PAP in the presence of 2 mg (A), and 3 mg (B) of MTPS nanocatalyst.

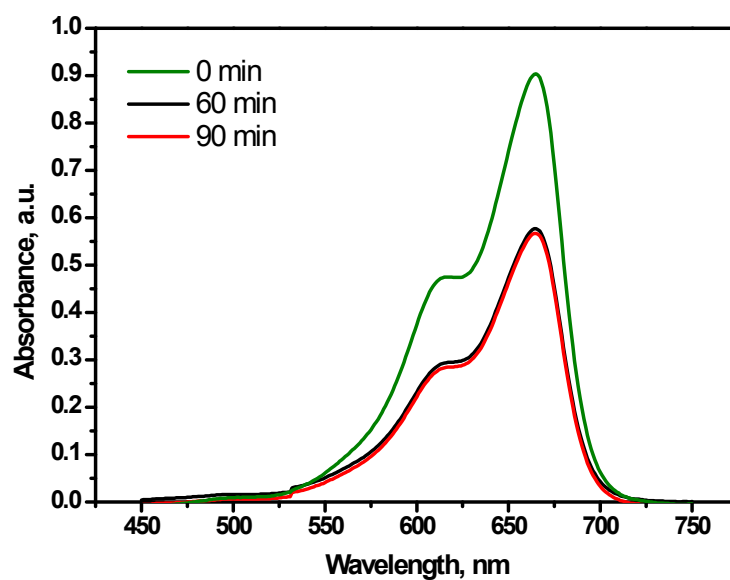


Figure S5. Time-resolved spectra of MB dye (4 mg L^{-1}) with 40 mg MPTS nanocomposite under the dark condition.

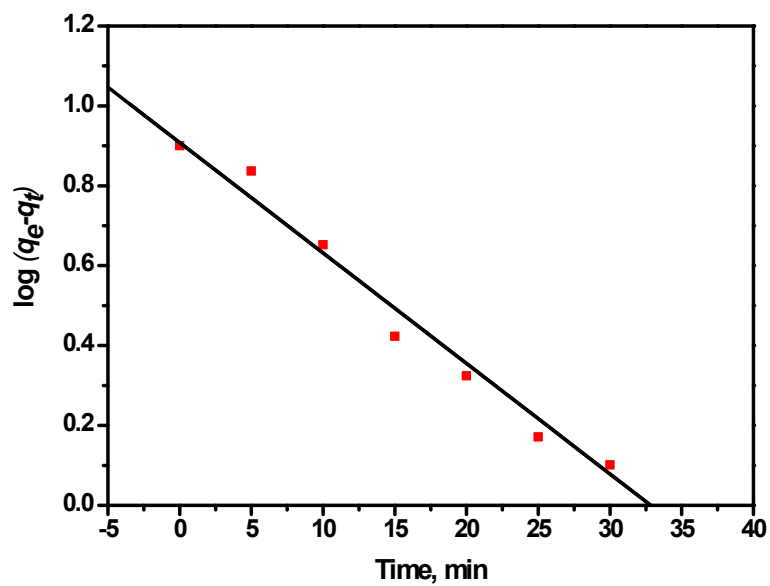


Figure S6. Pseudo-first order kinetics for the photocatalytic degradation of MB using MTPS as a nanophotocatalyst at 25 °C