[Electronic Supplementary Information (ESI)

Photocatalytic properties of hybrid materials based on multicharged polymer matrix with encored TiO_2 and noble metals (Pt, Pd or Au) nanoparticles†

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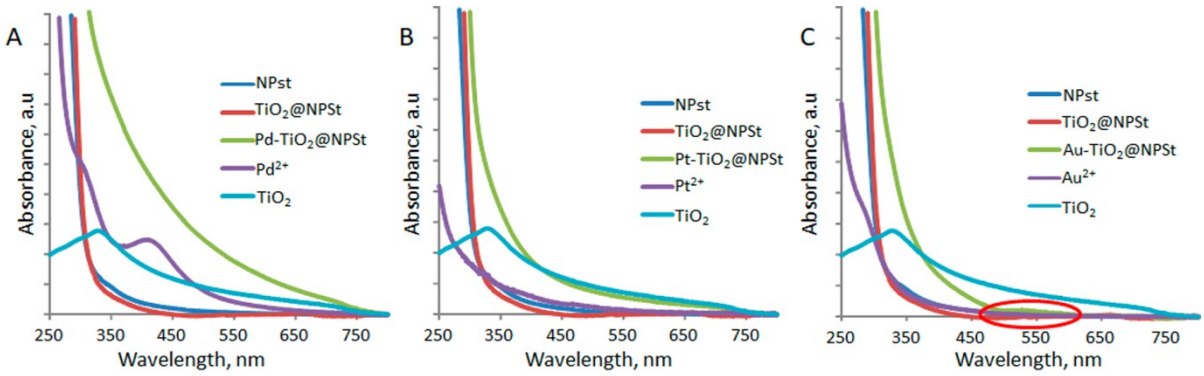

Fig. S1. UV-vis spectra of NPSt (blue), TiO_2 (azure), salts (Pd^{2+}(A), Pt^{2+} (B), Au^{2+}(C)) (purple), TiO_2@NPSt (red), of MNPs-TiO_2@NPSt (MNPs =Pd^0, Pt^0, Au^0) (green), H_2O, 20 °C, *l* = 0.5 cm.

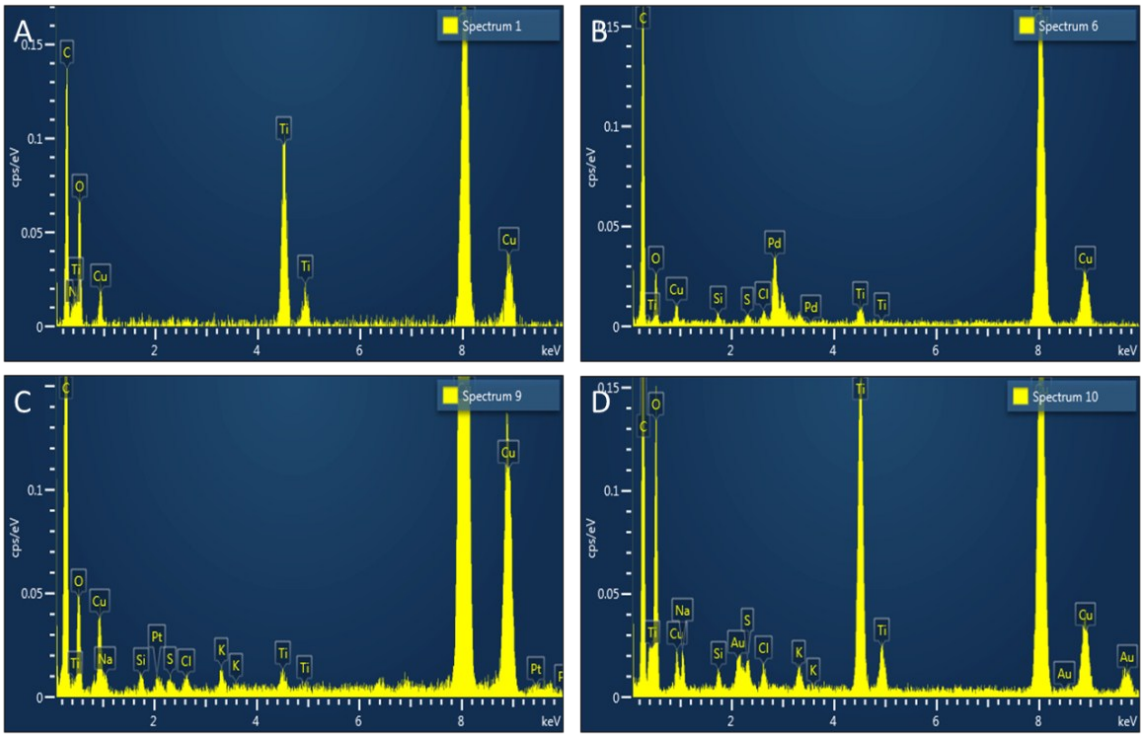

Fig S2. EDX profile of (A) NPst; (B) TiO_2@NPSt; (C) Pd-TiO_2@NPSt; (D) Pt-TiO_2@NPSt; (E) Au-TiO_2@NPSt.

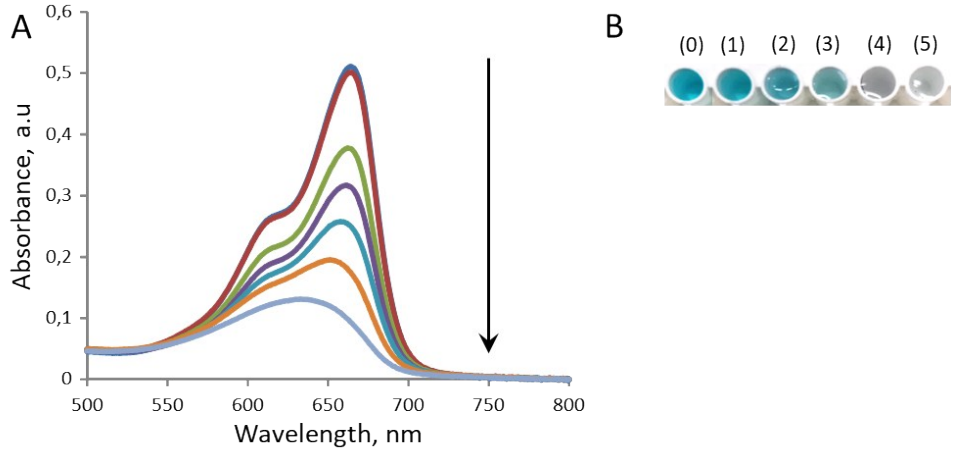

Fig. S3. (A) UV-vis spectral changes of MB aqueous solution over Pt-TiO_2@NPSt under UV irradiation (364 nm) at different time intervals; (B) different colors of MB in 130 min after UV irradiation (364 nm) over composite: (0) without composite, (1) TiO_2, (2) TiO_2@NPSt, (3) Pd-TiO_2@NPSt, (4) Pt-TiO_2@NPSt, (5) Au-TiO_2@NPSt H_2O, 24 °C, *C*(MB) = 1.6 mg/l, *C*(TiO_2 in composites) = 0.613 mg/l, *l* = 1 cm

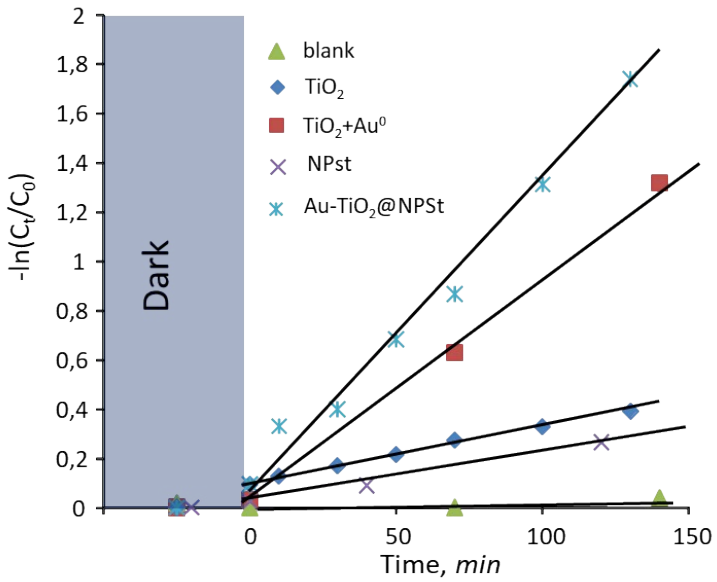

Fig. S4. Plot of -ln(C_t/C_0) vs. irradiation time under UV. *C*(MB) = 1.6 mg/l, *C*(TiO_2 in composites) = 0.613 mg/l, *V* = 4 ml**.**

Table S1. The photodegradation of MB by TiO_2, TiO_2+Au^0, NPSt, Au-TiO_2@NPSt and without catalyst; *C*(MB) = 1.6 mg/l, *C*(TiO_2 in composites) = 0.613 mg/l, V = 4 ml, 24 °C, H_2O.

catalyst	rate constants (min^{-1})
-	0.0001
TiO_2	0.0023
TiO_2+ Au^0	0.0078
NPSt	0.002
Au-TiO_2@NPSt	0.0122