Supplementary Material

TiO_2-zeolite-metal composites for photocatalytic degradation of organic pollutants in water

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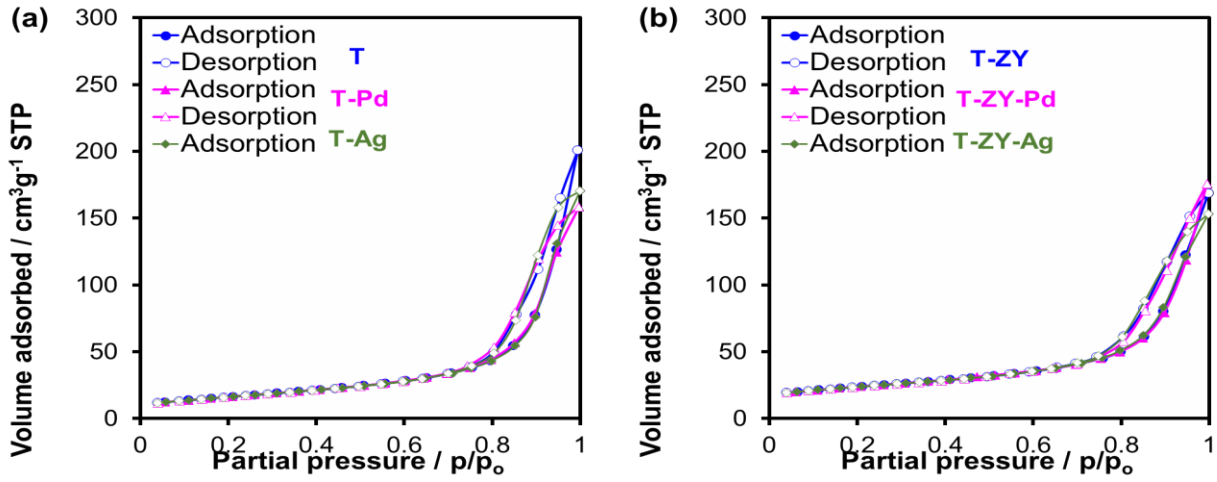

Figure S1. Nitrogen adsorption/desorption isotherms of (a) TiO_2 and TiO_2-metal composites (after deposition of metal nanoparticles Pd – 1 %wt., or Ag – 0.05 %wt.) without zeolite Y and (b) after their deposition onto a physical mixture of TiO_2 and 5 %wt. zeolite Y.

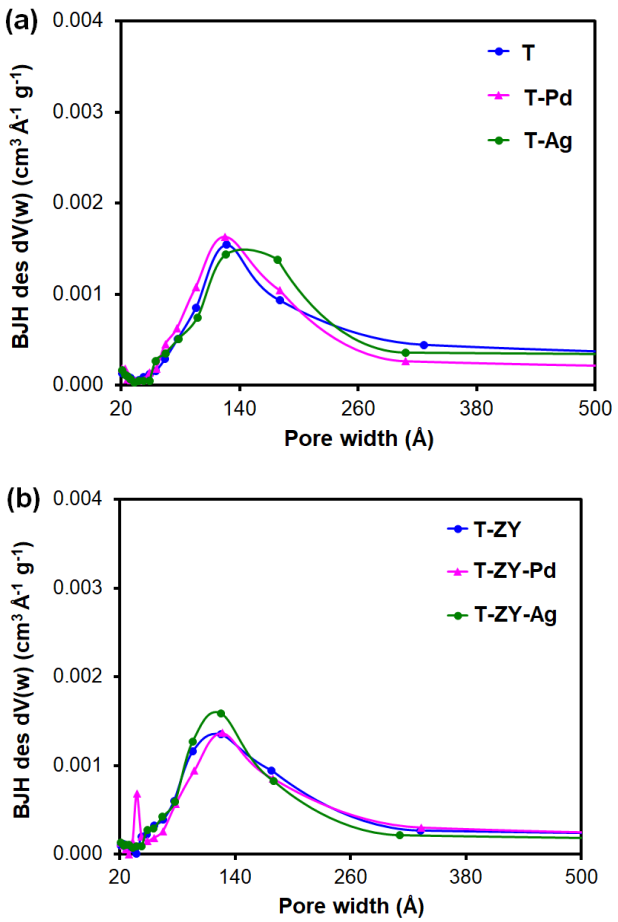

Figure S2. Pore size distribution (PSD) in the region of mesopores (20 – 500 Å) of (a) TiO_2 and T-metal composites (Pd – 1 %wt., or Ag – 0.05 %wt.) without zeolite Y and (b) after their deposition onto a physical mixture of TiO_2 and 5 %wt. zeolite Y calculated by using nitrogen sorption data from the desorption branch of nitrogen isotherm and the BJH (Barret-Joyner-Halenda) method.

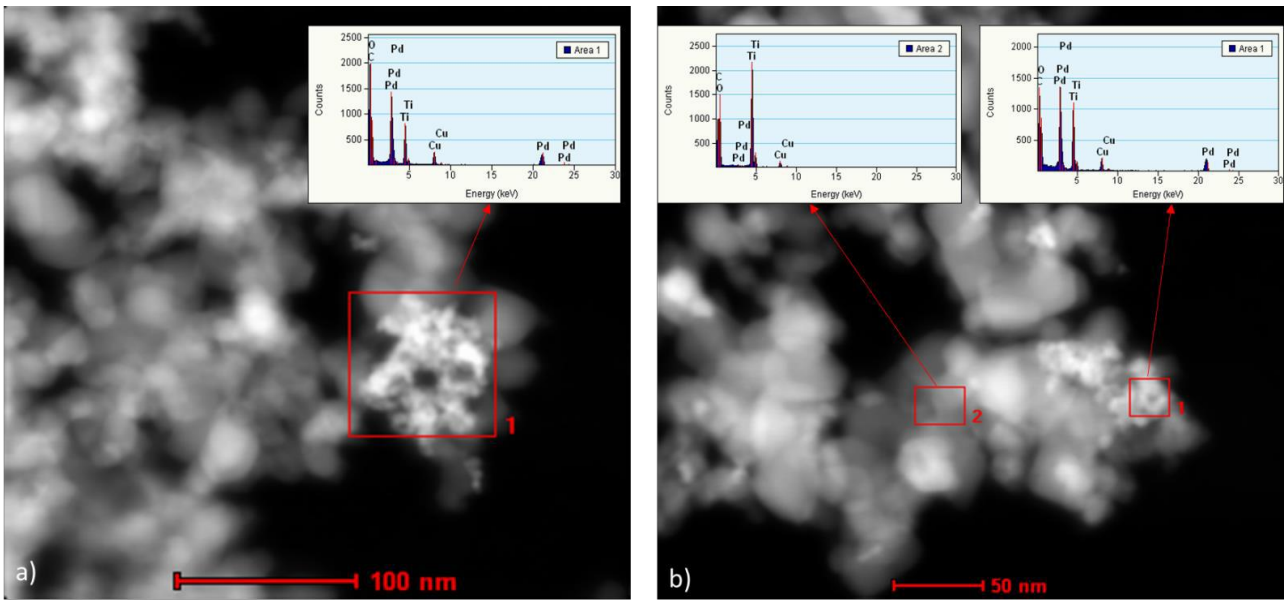

Figure S3. STEM image (a) and EDS spectrum (inset) of T-Pd and STEM image (b) and EDS spectra (insets area 1 and area 2) of T-ZY-Pd.

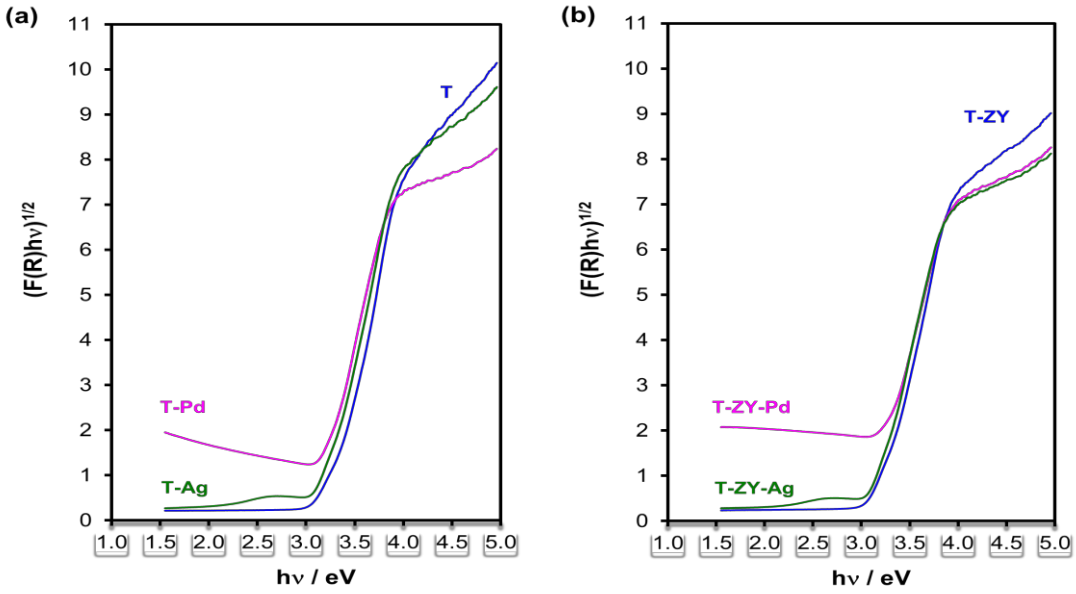

Figure S4. Tauc plots of (a) TiO_2 and a mixture of TiO_2 and zeolite Y (5 %wt.) with deposited metal nanoparticles (Pd – 1 %wt., Ag – 0.05 %wt.); and (b) TiO_2 and mixture of TiO_2 and zeolite Y (5 wt.%) with deposited metal (Pd-1 %wt. and Ag-0.05 %wt.) nanoparticles.

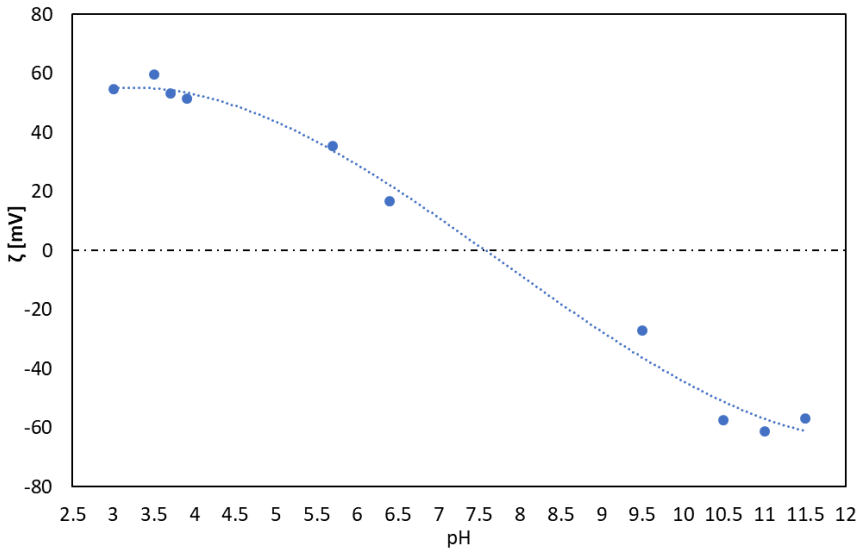

Figure S5. Dependence of zeta potential on pH of aqueous suspension of TiO_2 (Sigma Aldrich) at a concentration of 0.3 g L^{-1}. Natural pH of the suspension is 4-5. pH adjusted by means of aqueous solutions of DCA (0.01 mol L^{-1}, 0.1 mol L^{-1}) or NaOH (0.01 mol L^{-1}, 0.1 mol L^{-1}).