Supplementary Materials

Degradation of 4-Chlorophenol in Fenton-like system using Au-Fe_3O_4 magnetic nanocomposites as the heterogeneous catalyst at near neutral condition

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Table S1. Physical character of the prepared three samples

	Saturation magnetization (emu g^{-1})	Coercivity (Oe)	BET surface (m^2/g)	Average diameter of pore (nm)
Sample 1	82.25	90.02	43.79	0.25
Sample 2	82.92	72.46	42.69	0.22
Sample 3	83.38	86.53	44.27	0.27

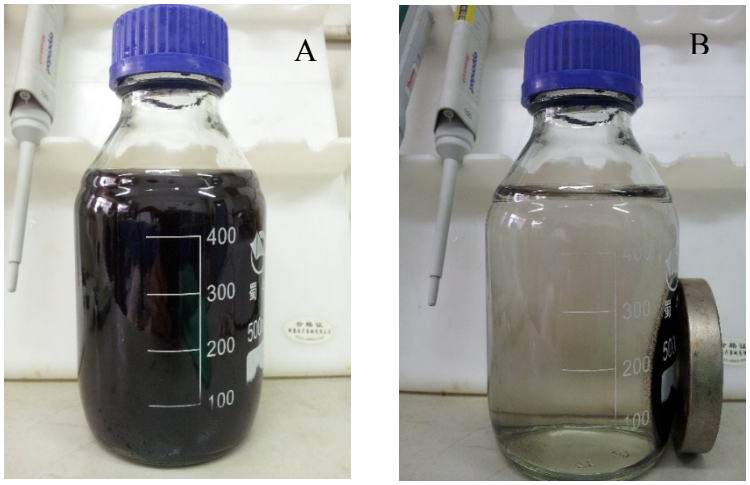

Fig. S1 The synthesized catalysts dispersed in water for 5 min (A) and then with magnet by side for 2 min (B).

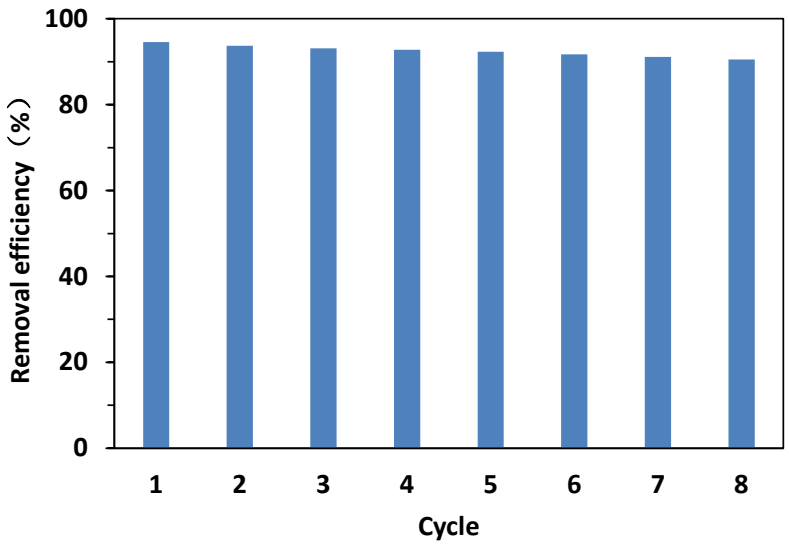

Fig. S2 Stability of the Au-Fe_3O_4 nanocomposites in the repeated batch 4-CP degradation experiment. Reaction conditions: initial pH 5.0, catalyst dose 0.1 g/L, H_2O_2 dose 0.5 g/L, initial concentration of 4-CP 25 mg/L, temperature 303 K, reaction time 4 h.

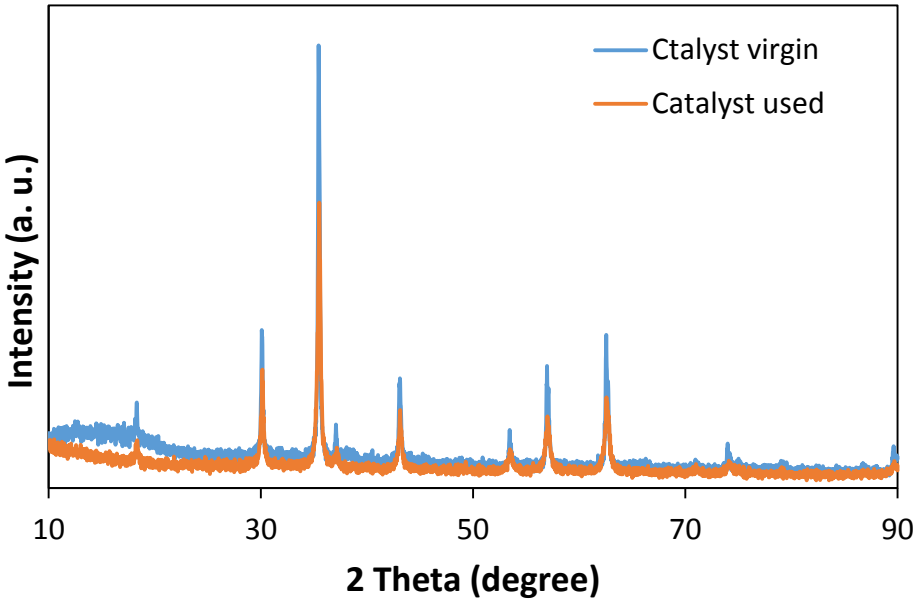

Fig. S3 XRD spectrum of catalyst.

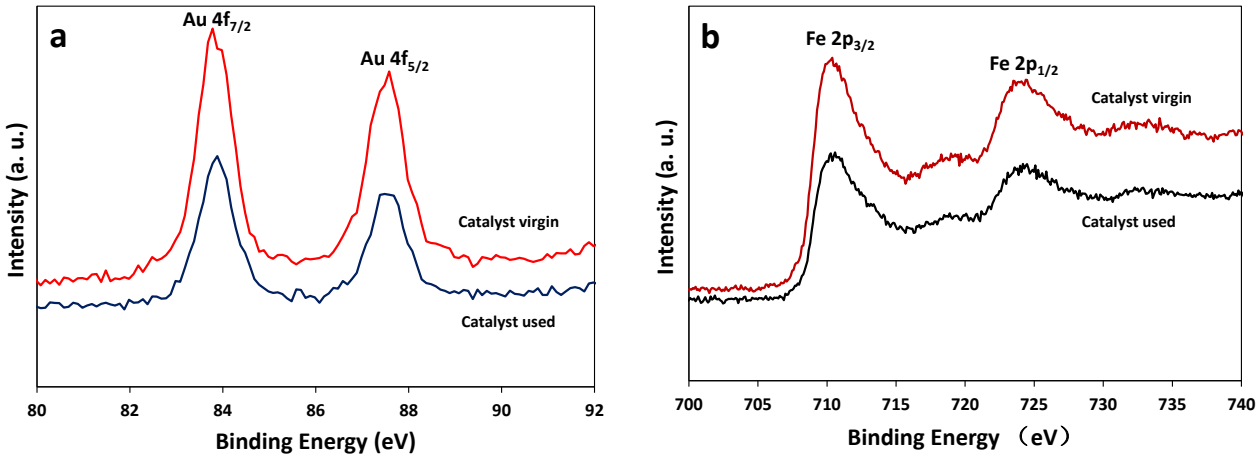

Fig. S4 (a) The Au 4f and (b) Fe 2p XPS spectrum of catalyst.

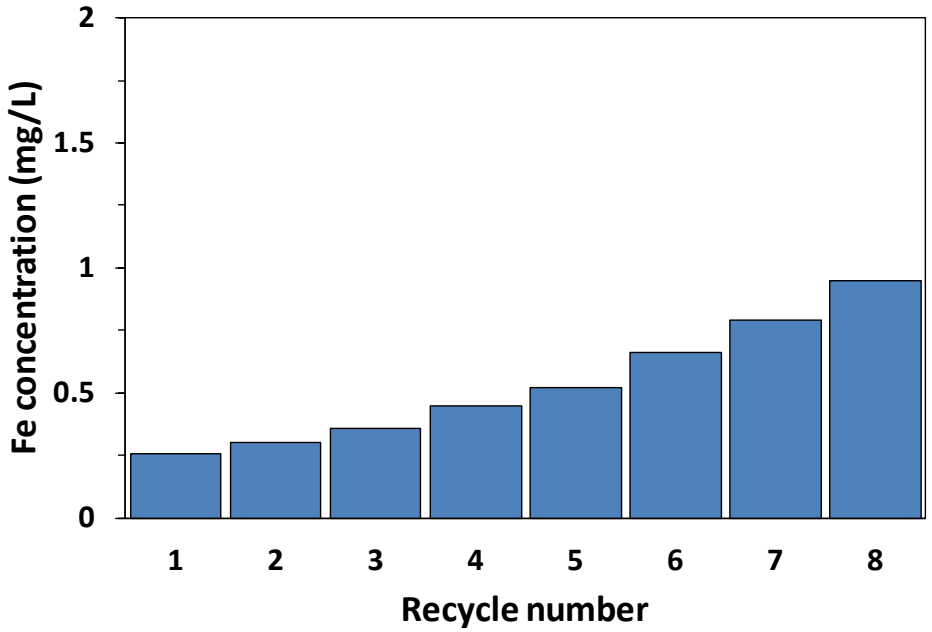

Fig. S5 Fe ion leaching in the repeated batch 4-CP degradation experiment. Reaction conditions: initial pH 5.0, catalyst dose 0.1 g/L, H_2O_2 dose 0.5 g/L, initial concentration of 4-CP 25 mg/L, temperature 303 K, reaction time 4 h.

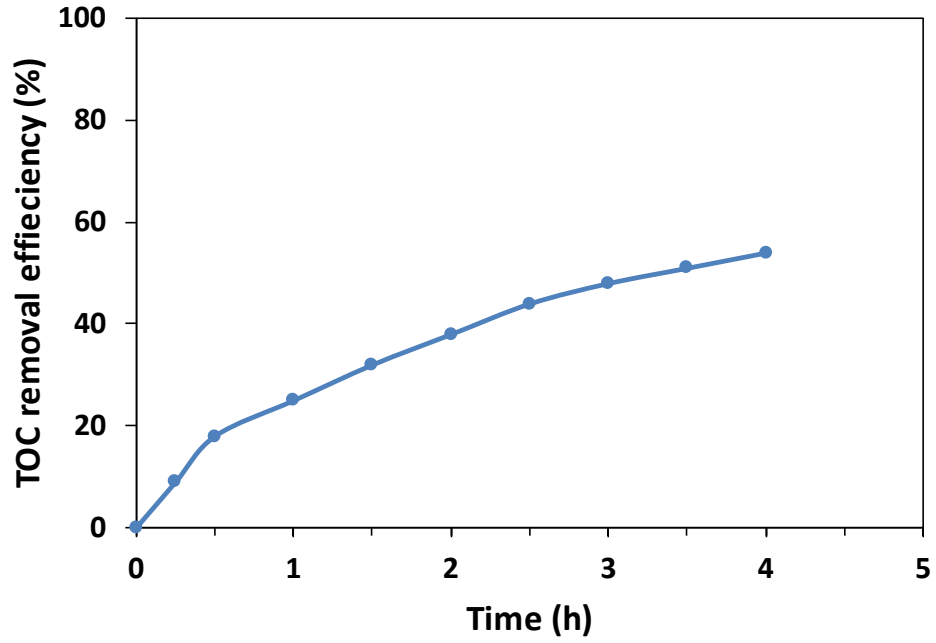

Fig. S6 TOC removal in the 4-CP degradation experiment. Reaction conditions: initial pH 5.0, catalyst dose 0.1 g/L, H_2O_2 dose 0.5 g/L, initial concentration of 4-CP 25 mg/L,

temperature 303 K, reaction time 4 h.