Supporting Information

Glutathione promoted Fenton degradation: a cocatalyst based on –HS/-S-S cycle with hydroxyl radicals

Xuwen Da\textsuperscript{a}, Daojian Tang\textsuperscript{a}, Ling Wang\textsuperscript{b}, Jiahai Ma\textsuperscript{a}\textsuperscript{*}

\textsuperscript{a} School of Chemical Sciences, University of Chinese Academy of Sciences, Beijing 100049, P. R. China

\textsuperscript{b} Beijing Key Laboratory of Ionic Liquids Clean Process, Key Laboratory of Green Process and Engineering, Institute of Process Engineering, Chinese Academy of Sciences, 100190, Beijing, P. R. China.

E-mail: majia@ucas.ac.cn
Figure S1. Time profiles of the RhB degradation under various systems in the Fe(III)/GSH/H$_2$O$_2$/RhB system. The initial pH value of the reactions was 3.0. Initial concentrations were: 20 μM RhB, 0.1 mM Fe(III), 0.1 mM glutathione, and 1 mM H$_2$O$_2$.

Figure S2. Time profiles of the RhB degradation in various systems. Initial concentrations: 20 μM RhB, 0.1 mM Fe(III), 0.1 mM glutathione, 0.1 mM oxidized glutathione and 1 mM H$_2$O$_2$. The initial pH value of the reactions was 3.0.
Figure S3. The electrospray ionization mass spectrometre analysis in the (A) Fe(III)/GSH/H\textsubscript{2}O\textsubscript{2} system; (B) Fe(III)/GSH/H\textsubscript{2}O\textsubscript{2} system with isopropanol. Conditions: [Fe(III)] = 5 mM, [GSSG] = 5 mM, [H\textsubscript{2}O\textsubscript{2}] = 50 mM, pH 3.0.

Figure S4. The electrospray ionization mass spectrometre analysis in different systems. (a) Fe(III)/3-MC/H\textsubscript{2}O\textsubscript{2} system; (b) Fe(III)/DL-P/H\textsubscript{2}O\textsubscript{2} system; (c) Fe(III)/TPN/H\textsubscript{2}O\textsubscript{2} system; (d) Fe(III)/CTPR/H\textsubscript{2}O\textsubscript{2} system. Conditions: [Fe(III)] = 5 mM, [2-MC] = 5 mM, [3-MC] = 5 mM, [DL-P] = 5 mM, [TPN] = 5 mM, [CTPR] = 5 mM, [H\textsubscript{2}O\textsubscript{2}] = 50 mM, pH 3.0.