

Electronic Supplementary Material (ESI) for New Journal of Chemistry

Supplementary data for

**FeOCl/Ln (Ln=La or Y): efficient photo-Fenton catalysts for ibuprofen
degradation**

Xiaohua Shi^a, Chao Cui^b, Lei Zhang^b, Jian Zhang^{b*} and Guodong Liu^{b*}

^a. *Department of Bioengineering, Shandong Polytechnic, Jinan, 250104, P. R. China*

^b. *Department of chemistry and chemical engineering, Jining University, Qufu 273100, P. R. China*

Corresponding Author, E-mail: sduchemzhang@163.com; liugd615@163.com

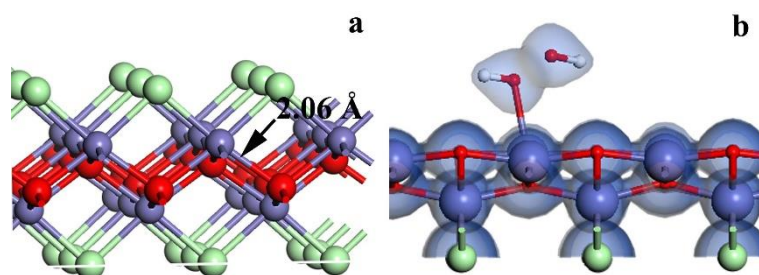


Fig.S1 Optimized structures of (a) FeOCl, total charge densities of H₂O₂ adsorption on Fe-site.

The isosurface level is 0.5

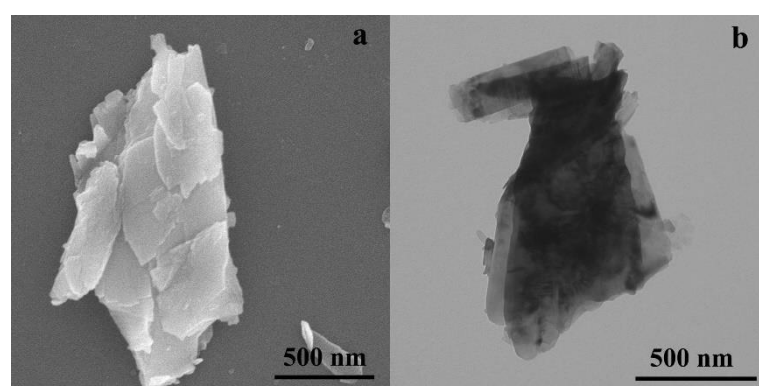


Fig.S2 (a) SEM and (b) TEM images of FeOCl/Y

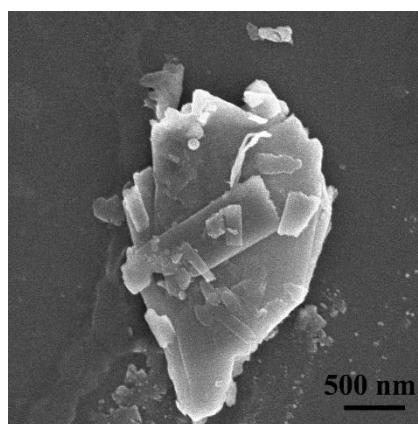


Fig.S3 SEM image of FeOCl

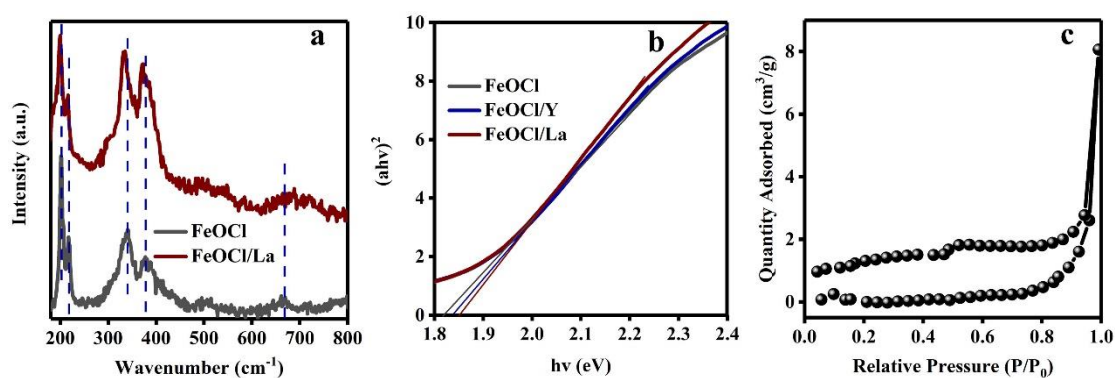


Fig.S4 (a) Raman spectrum and (b) band gaps of FeOCl and FeOCl/Ln, (c) N₂ adsorption-desorption isotherms of FeOCl

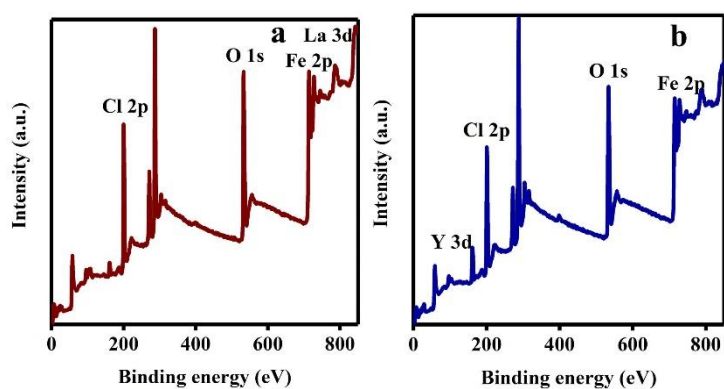


Fig.S5 the full-range XPS spectrum of (a) FeOCl/La and (b) FeOCl/Y

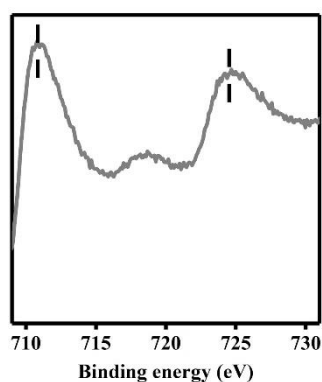


Fig.S6 XPS spectrum of Fe 2p in FeOCl

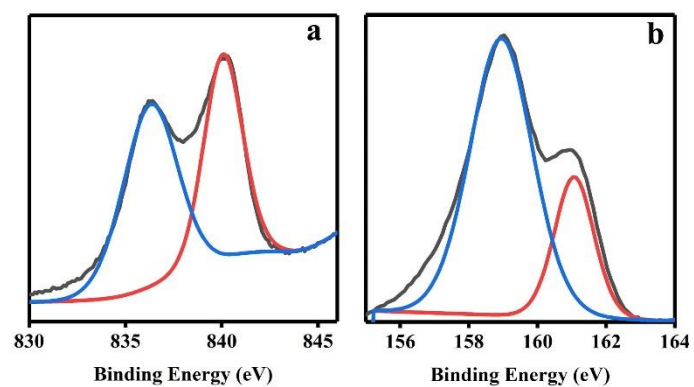


Fig.S7 XPS spectrum of (a) La 3d in La_2O_3 and (b) Y 3d in Y_2O_3

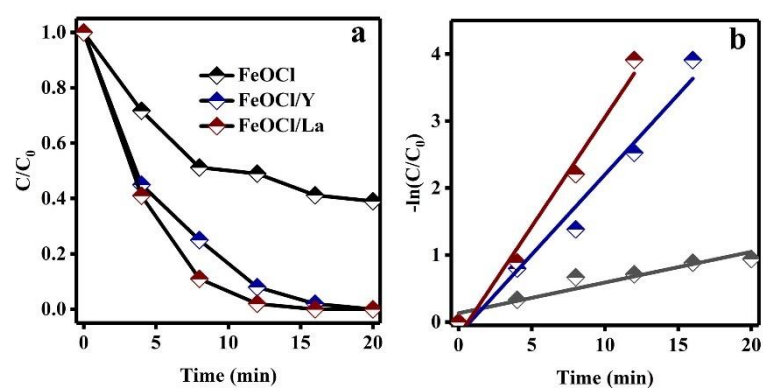


Fig.S8 (a) catalytic degradation and (b) the corresponding kinetic plots over FeOCl, FeOCl/La and FeOCl/Y

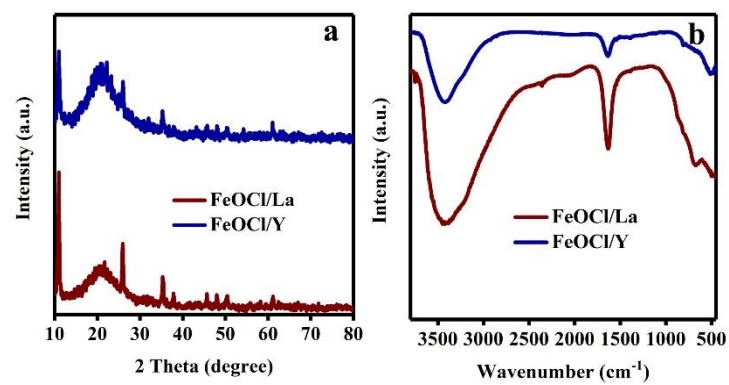


Fig.9 (a) XRD patterns and (b) FTIR spectrum of FeOCl/Ln after reaction

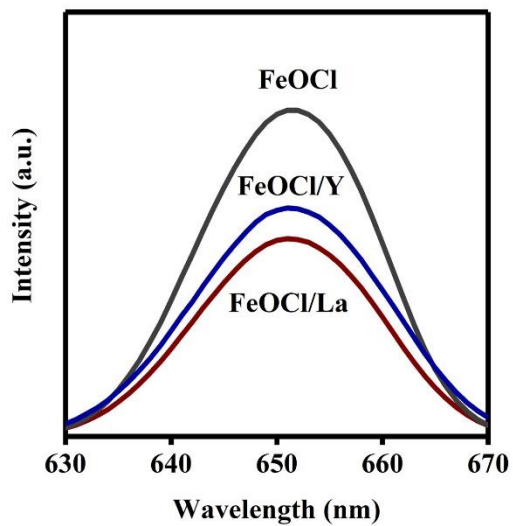


Fig.S10 Photoluminescence spectra of FeOCl and FeOCl/Ln

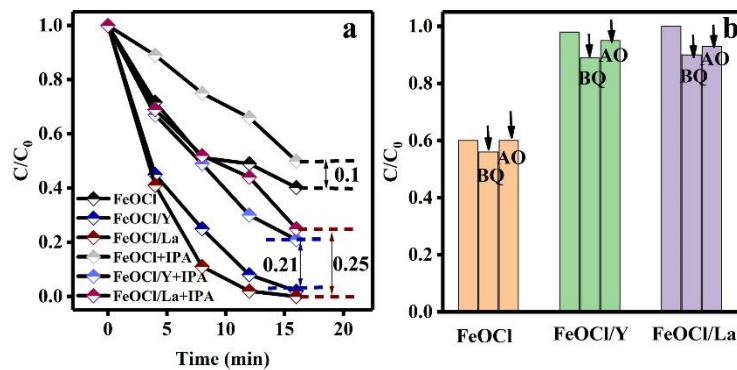


Fig.S11 photo-Fenton catalytic activities of FeOCl and FeOCl/Ln with (a) IPA, (b) BQ and AO,

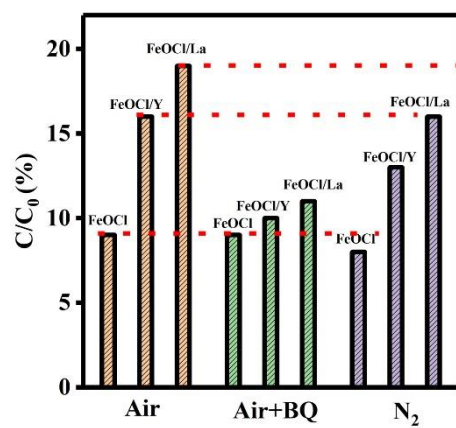


Fig.S12 trapping experiments and photocatalytic activities under N_2 deaerated solution