

Supplementary data

for

**A novel LaFeO₃ synthesized by sodium diethylene triamine
penta-methylene phosphonate for degradation of diclofenac
through peroxymonosulfate activation: Degradation
pathways and mechanism study**

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Contents

Figures

Fig. S1 SEM of LFO-0.025

Fig. S2 SEM of LFO-0.05

Fig. S3 SEM of LFO-0.085

Fig. S4 SEM of LFO-0.125

Fig. S5 SEM of LFO-C-0.1

Fig. S6 XPS spectra of LFO-0.1: (a) survey spectrum (b) La 3d

Fig. S7 Adsorption equilibrium of different LFO

Fig. S8 LC-MS of DCF

Fig. S9 The MS² spectra of the detected transformation products of DCF during catalysis

Tables

Table S1 Contents of Oxygen Species Determined by Fe 2p Spectra

Table S2 Contents of Oxygen Species Determined by O 1s Spectra

Table S1 products detected by LC-MS during DCF degradation by LFO-0.1/PMS process

Figures

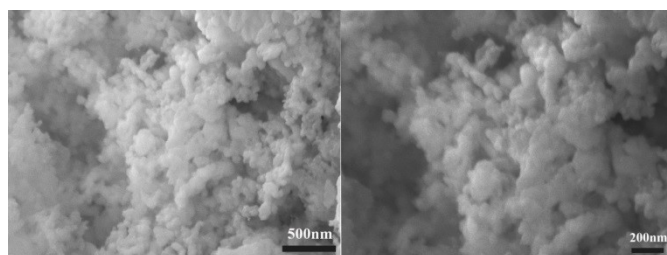


Fig. S1 SEM of LFO-0.025

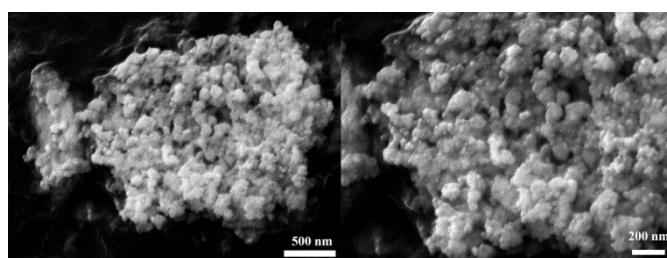


Fig. S2 SEM of LFO-0.05

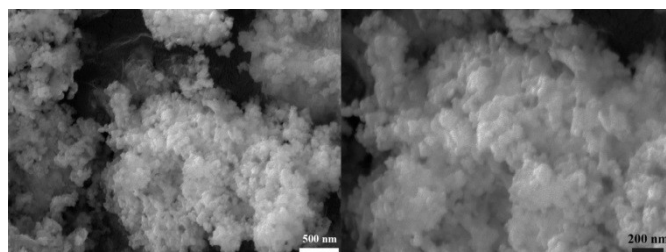


Fig. S3 SEM of LFO-0.085

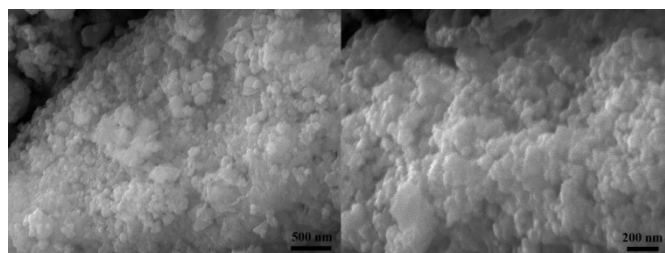


Fig. S4 SEM of LFO-0.125

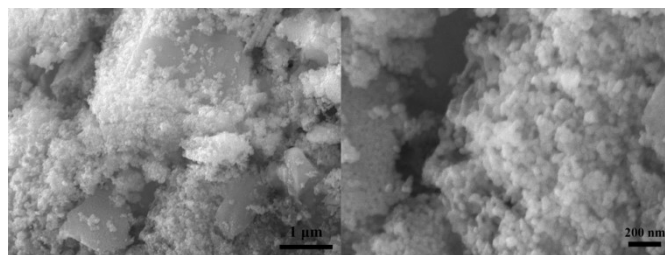


Fig. S5 SEM of LFO-C-0.1

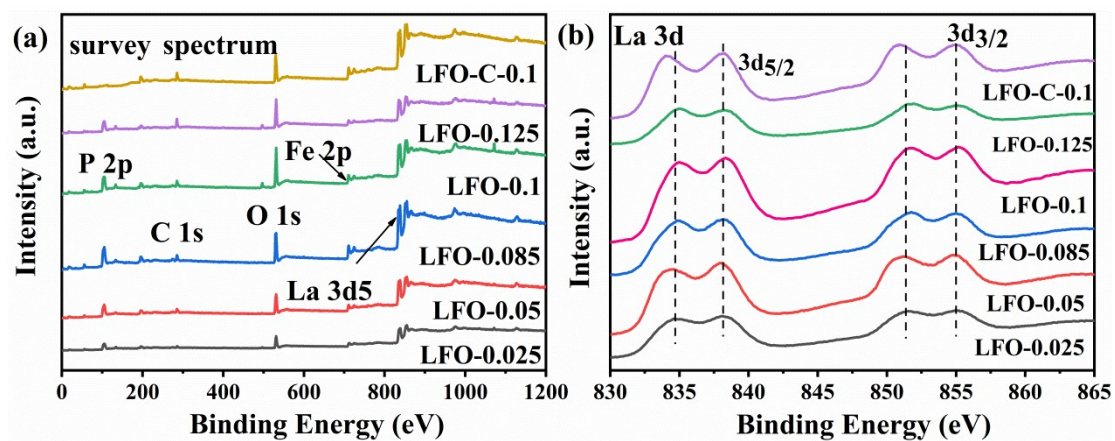


Fig. S6 XPS spectra of LFO-0.1: (a) survey spectrum (b) La 3d

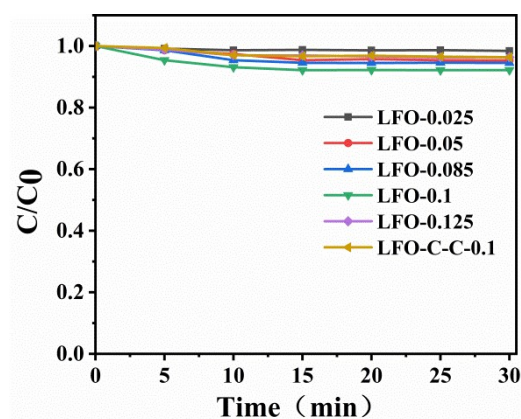


Fig. S7 Adsorption equilibrium of catalysts (note: [catalyst] = 0.2 g/L, [PMS] = 0.2 g/L, [DCF]₀ = 20 mg/L,

pH₀ = 7.25)

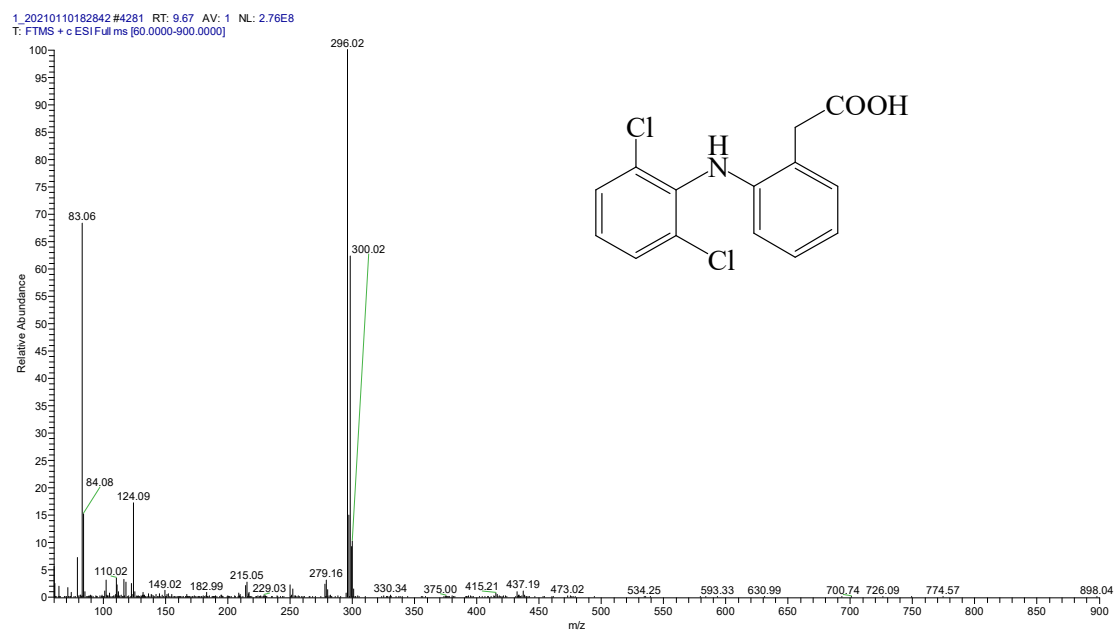
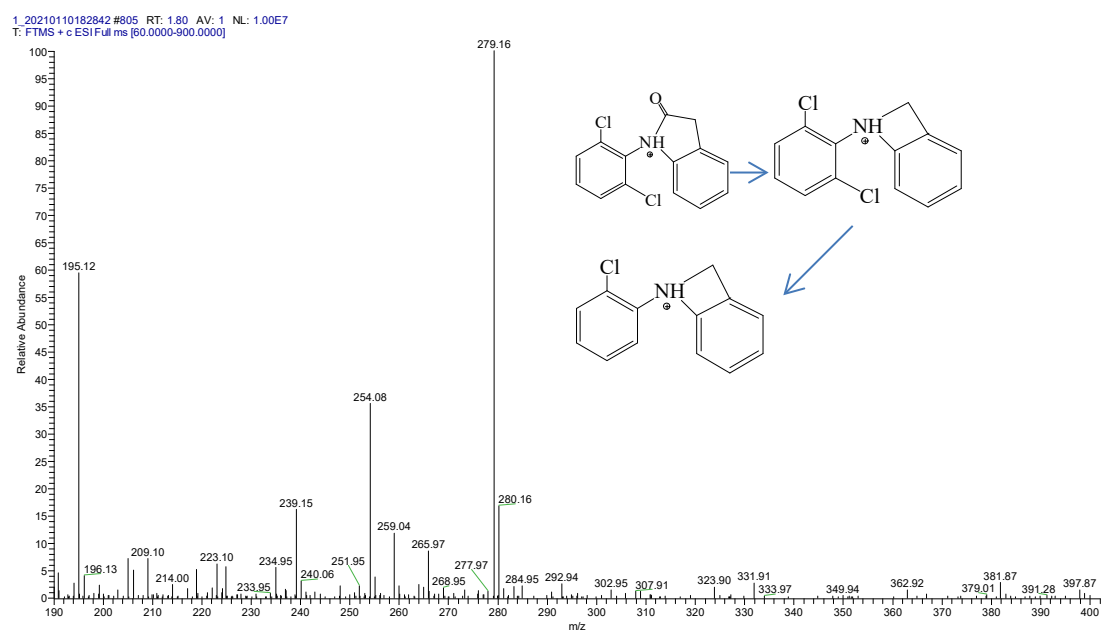
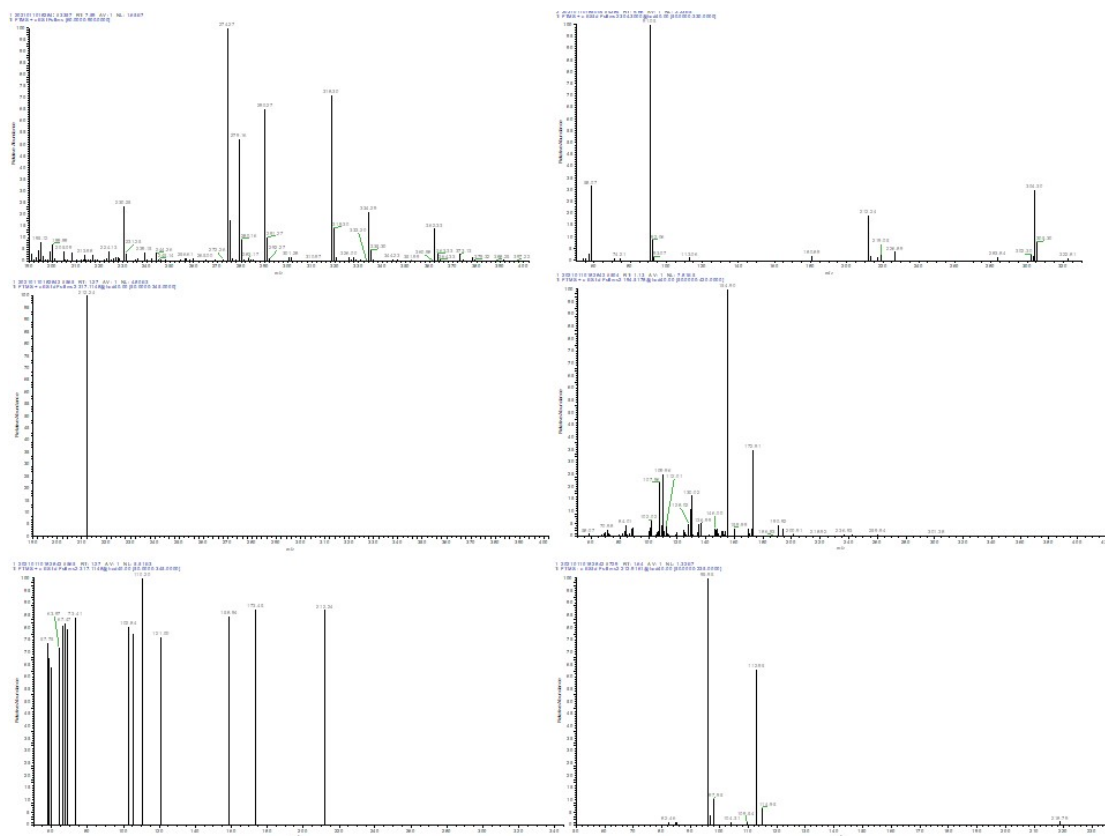


Fig. S8 LC-MS of DCF





Table

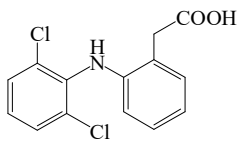
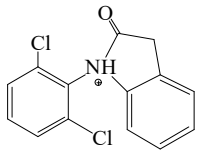
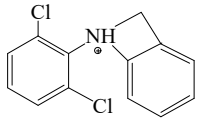
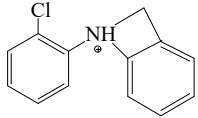
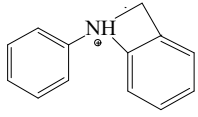
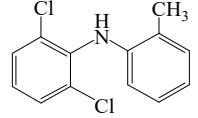
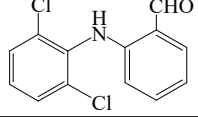
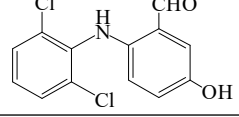
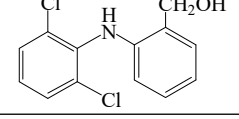
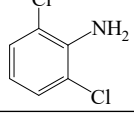
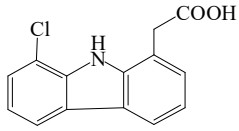
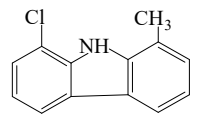
Table S1 Contents of Oxygen Species Determined by Fe 2p Spectra

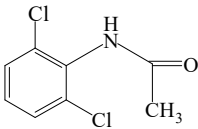
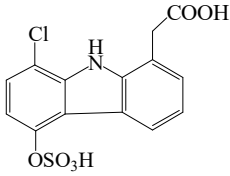
	Fe ²⁺	Fe ³⁺	Fe ³⁺ / Fe ²⁺
	Percent (%)	Percent (%)	
LFO-0.025	30.03	69.97	2.33
LFO-0.05	37.29	62.71	1.68
LFO-0.085	40.86	59.14	1.45
LFO-0.1	36.39	63.61	1.75
LFO-0.125	40.92	59.08	1.44
LFO-C-0.1	28.99	71.01	2.45

Table S2 Contents of Oxygen Species Determined by O 1s Spectra

	O _{lat}		O _{ads}		O _{water}	
	BE(eV)	Percent (%)	BE(eV)	Percent (%)	BE(eV)	Percent (%)
LFO-0.025	528.83	14.47	531.06	85.26	-	-
LFO-0.05	528.86	16.06	531.04	83.94	-	-
LFO-0.085	528.88	17.73	530.97	80.77	533.18	1.05
LFO-0.1	529.23	20.85	531.01	46.58	532.61	32.58
LFO-0.125	528.86	25.15	530.32	34.26	-	-
			531.47	40.59		
LFO-C-0.1	529.10	36.37	530.97	46.54	532.12	17.09

Table S3 products detected by LC-MS during DCF degradation by LFO-0.1/PMS process

Compound	m/z	Proposed Structure
1	296	
2	278	
3	250	
4	215	
5	180	
6	254	
7	266	
8	281	
9	254	
10	161	
11	260	
12	214	

13	204	
14	337	
15	229	