

Synthesis of Different Crystallographic FeOOH for Peroxymonosulfate Activation towards organic matters degradation

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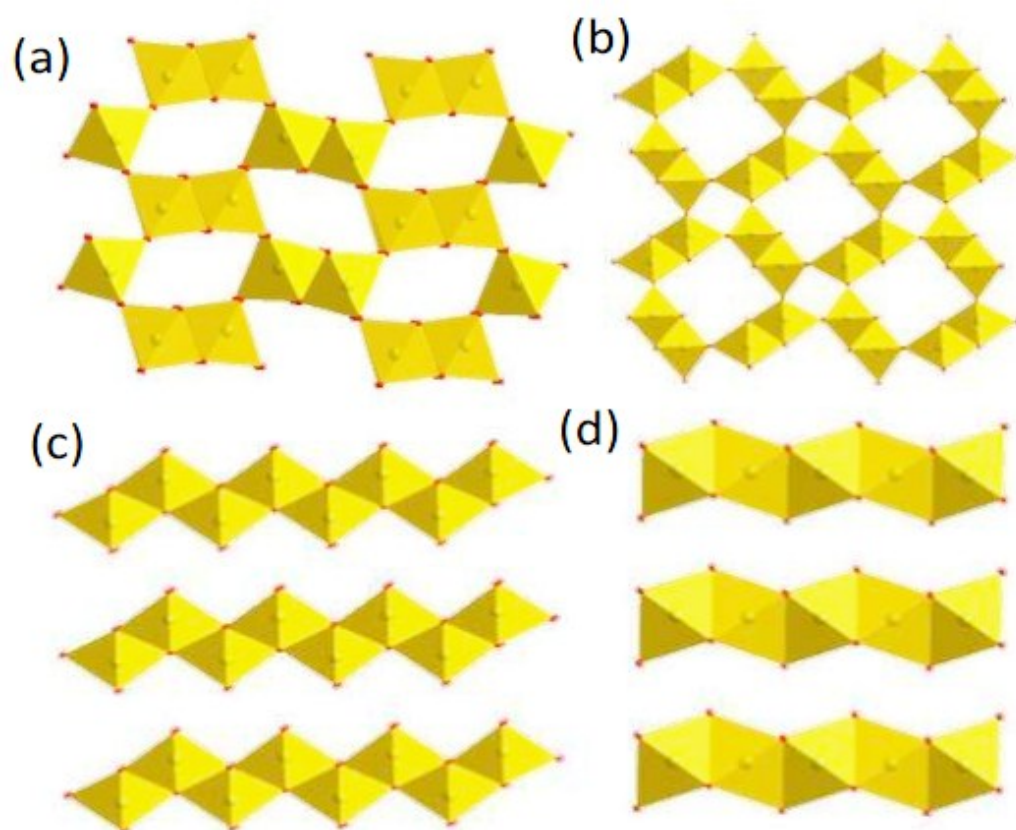


Fig. S1 Structures of the FeOOH polymorphs. (a) α -FeOOH (goethite), (b) β -FeOOH (akaganeite), (c) γ -FeOOH (lepidocrocite) and (d) δ -FeOOH (feroxyhyte).

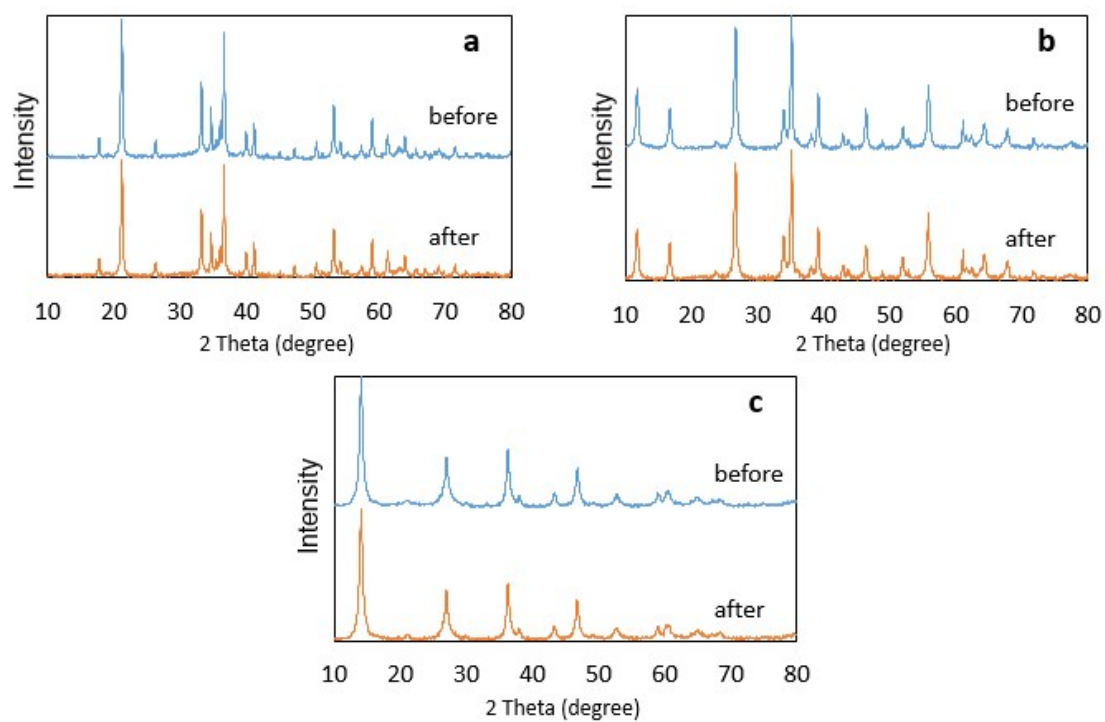


Fig. S2 XRD patterns of synthesized α -FeOOH, β -FeOOH and γ -FeOOH before and after used 6 times in PMS/ δ -FeOOH/AO7 system.

Table S1. Decolorization efficiency of AO7 with catalyst of α -FeOOH, β -FeOOH and γ -FeOOH during six consecutive cycles.

Time of reusability	Decolorization efficiency (%)		
	α -FeOOH	β -FeOOH	γ -FeOOH
1	42%	24.9%	29.5%
2	40.4%	24.5%	27.9%
3	39.2%	24.2%	27.1%
4	38.7%	24.2%	26.5%
5	38.1%	23.9%	26.0%
6	37.6%	23.7%	25.6%

Table S2. Metal ions leaching amount of α -FeOOH, β -FeOOH and γ -FeOOH during six consecutive cycles.

Time of reusability	Iron leaching concentration ($\mu\text{g L}^{-1}$)		
	α -FeOOH	β -FeOOH	γ -FeOOH
1	5.11	5.24	4.85
2	4.98	4.92	4.82
3	4.76	4.83	4.39
4	4.32	4.43	4.51
5	3.94	4.65	4.03
6	3.49	4.29	3.87