Supporting information

Accelerating Fe(III)/Fe(II) redox cycling by Zn^0 in micro-nano dendritic Fe-Zn alloy for enhanced Fenton-like degradation of phenol

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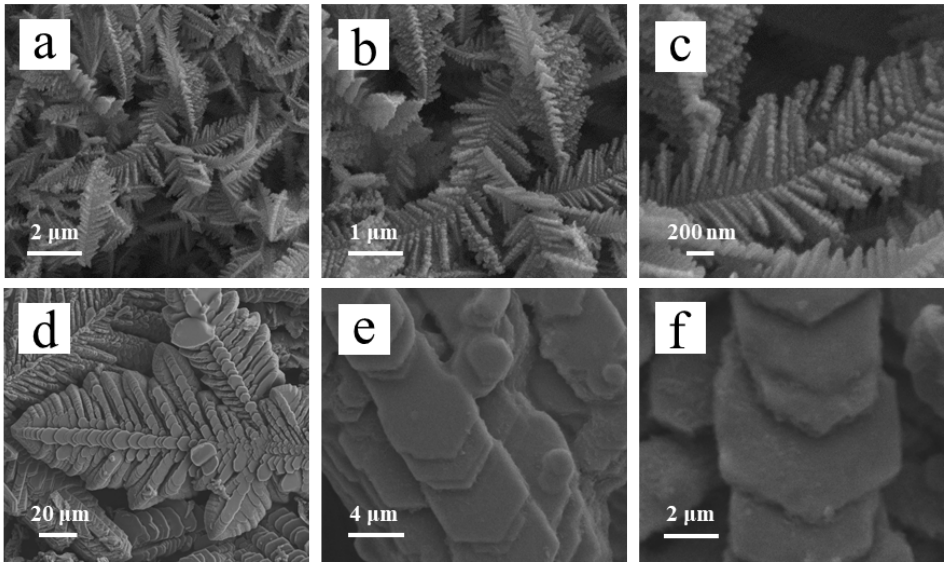

Fig. S1 SEM images of (a-c) ZVI and (d-f) ZVZ.

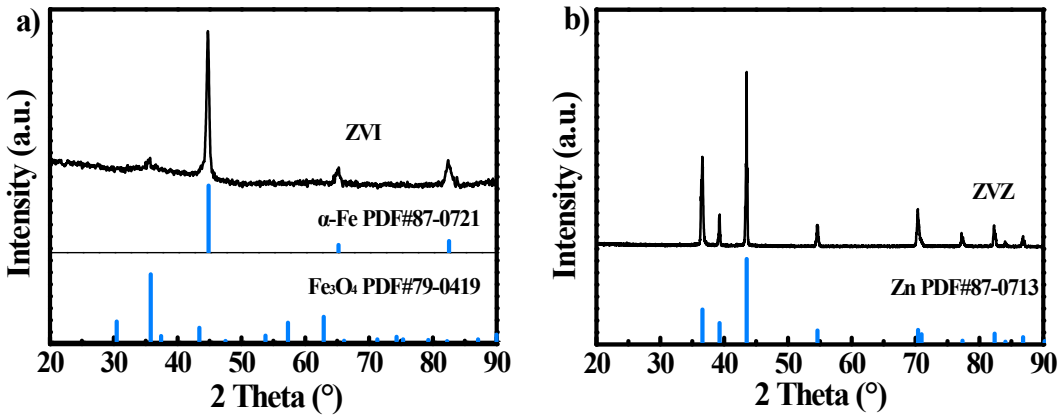

Fig. S2 XRD patterns of (a) ZVI and (b) ZVZ.

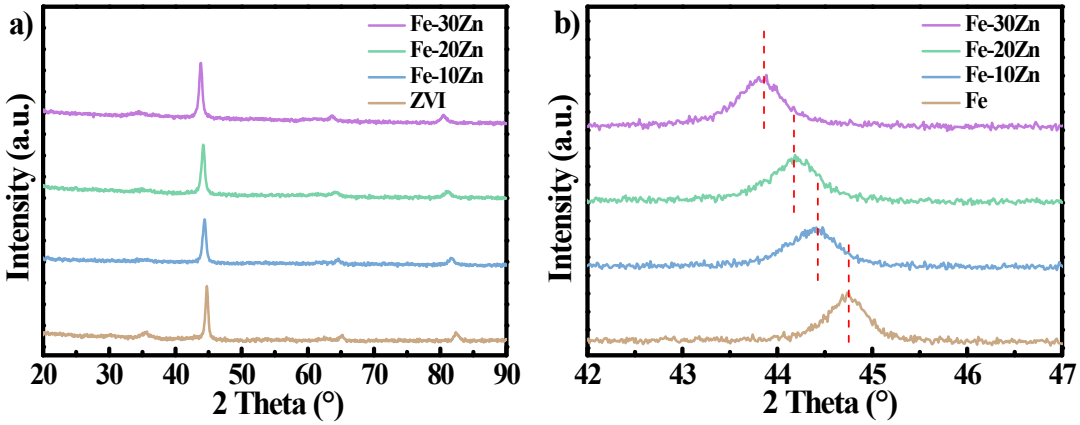

Fig. S3 XRD patterns with different electrolyte composition.

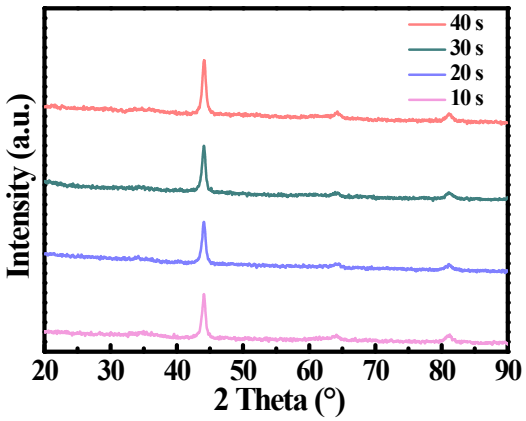

Fig. S4 XRD patterns with different deposition time.

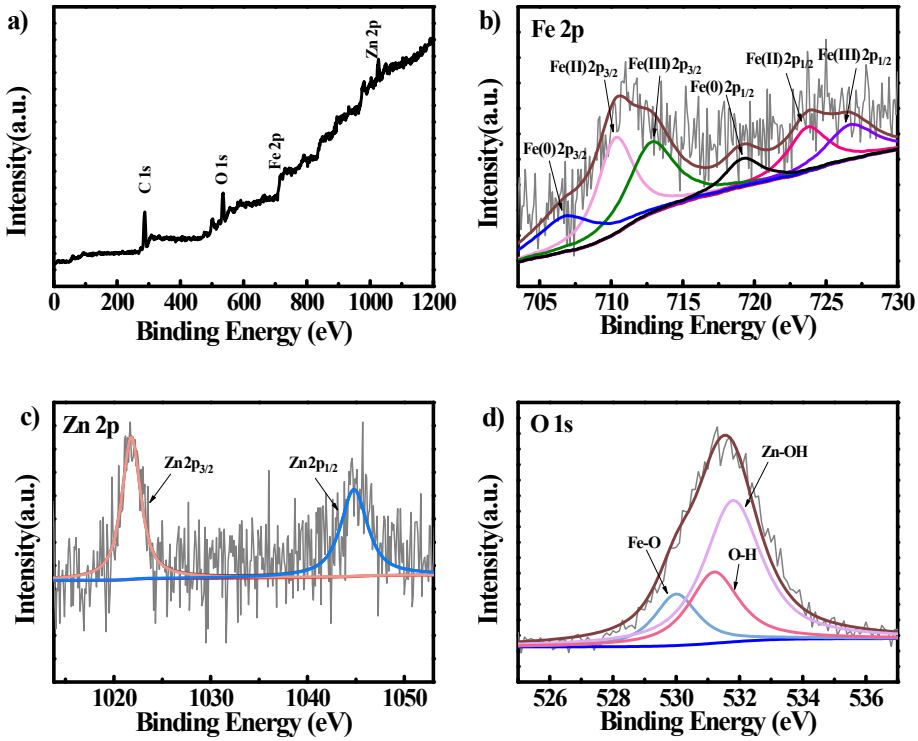

Fig. S5 XPS spectra of Fe-20Zn: (a) wide scan, (b) Fe2p (c) Zn2p,and (d) O1s.

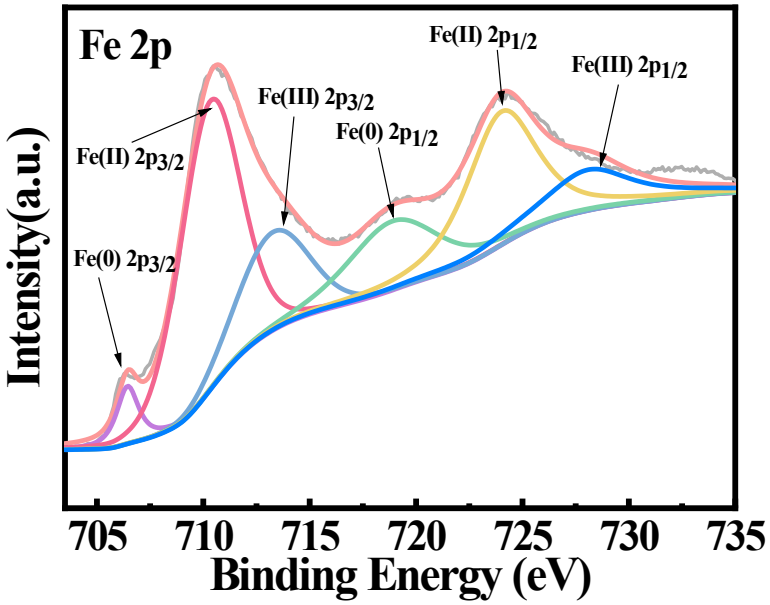

Fig. S6 High-resolution Fe 2p XPS spectrum of ZVI

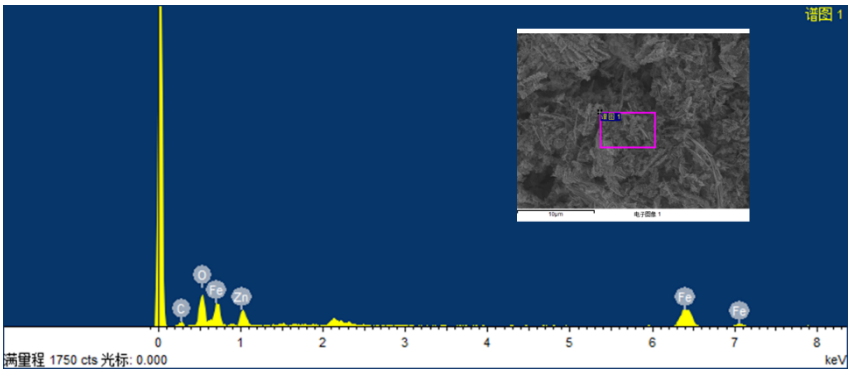

Fig. S7 EDS spectrum of Fe-20Zn

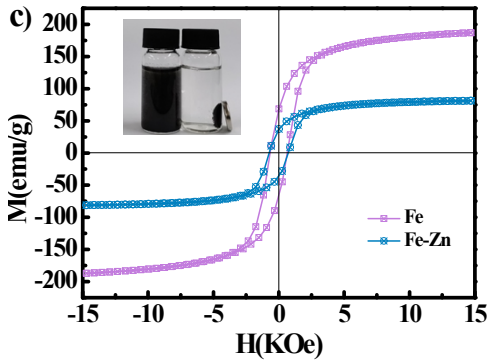

Fig. S8 The hysteresis loops of Fe and Fe-20Zn.

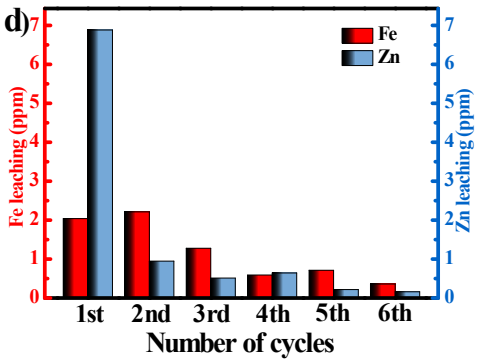

Fig. S9 Iron and zinc leaching amount in six cycles.

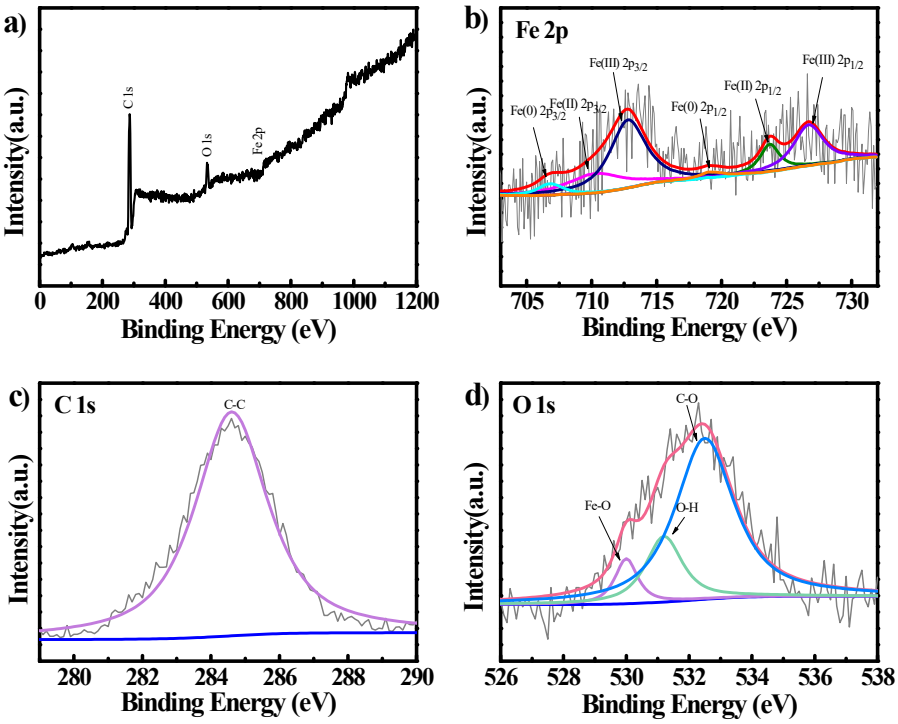

Fig. S10 XPS spectra of used Fe-20Zn: (a) wide scan, (b) Fe2p (c) C1s, and (d) O1s.

Table S1 Comparison of phenol degradation performance with previous studies

Catalysts	pH	Catalyst Dosage (g/L)	Phenol centration (mg/L)	H_2O_2 dosage (mM)	Time (min)	Efficiency	External energy	Ref.
E100	4.0	0.1	35	6	60	99%	-	[1]
IB-350	3.6	1.0	100	45	35	99%	-	[2]
RFAM	6.0	0.5	100	10	60	95%	light	[3]
N-AC/ZVI	3.0	1.0	150	22	60	80%	-	[4]
Fe-20Zn	4.0	0.1	30	6	20	100%	-	This work

References

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