Supplementary Material

Ciprofloxacin Degradation in Electro-Fenton System with S-nZVI@BC/NF Composite Electrode

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Fig. S1 Preparation of S-nZVI@BC/NF

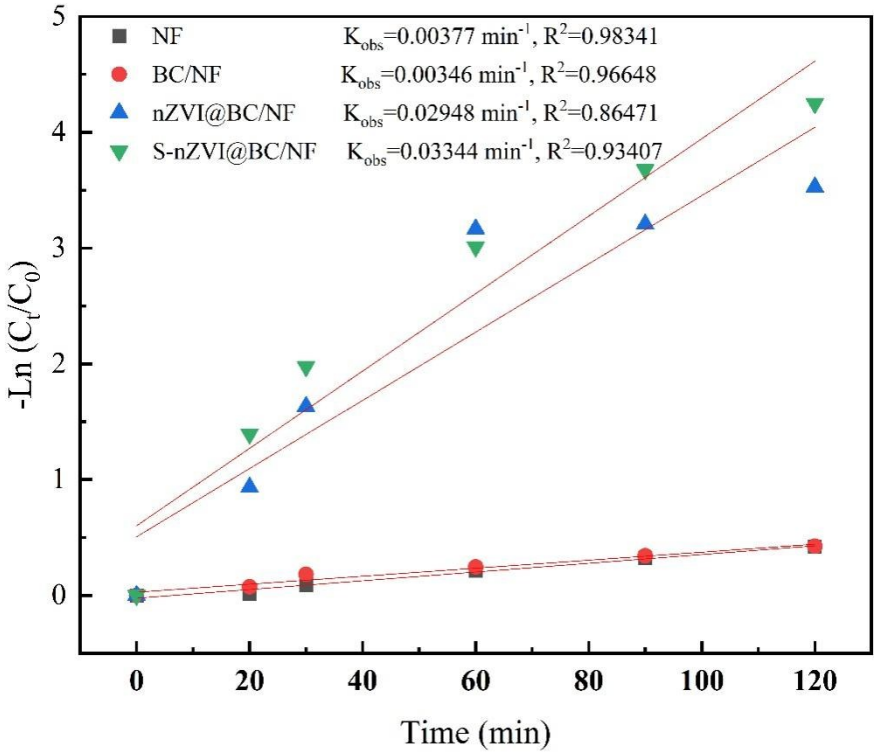


Fig. S2 Kinetic analysis of different materials

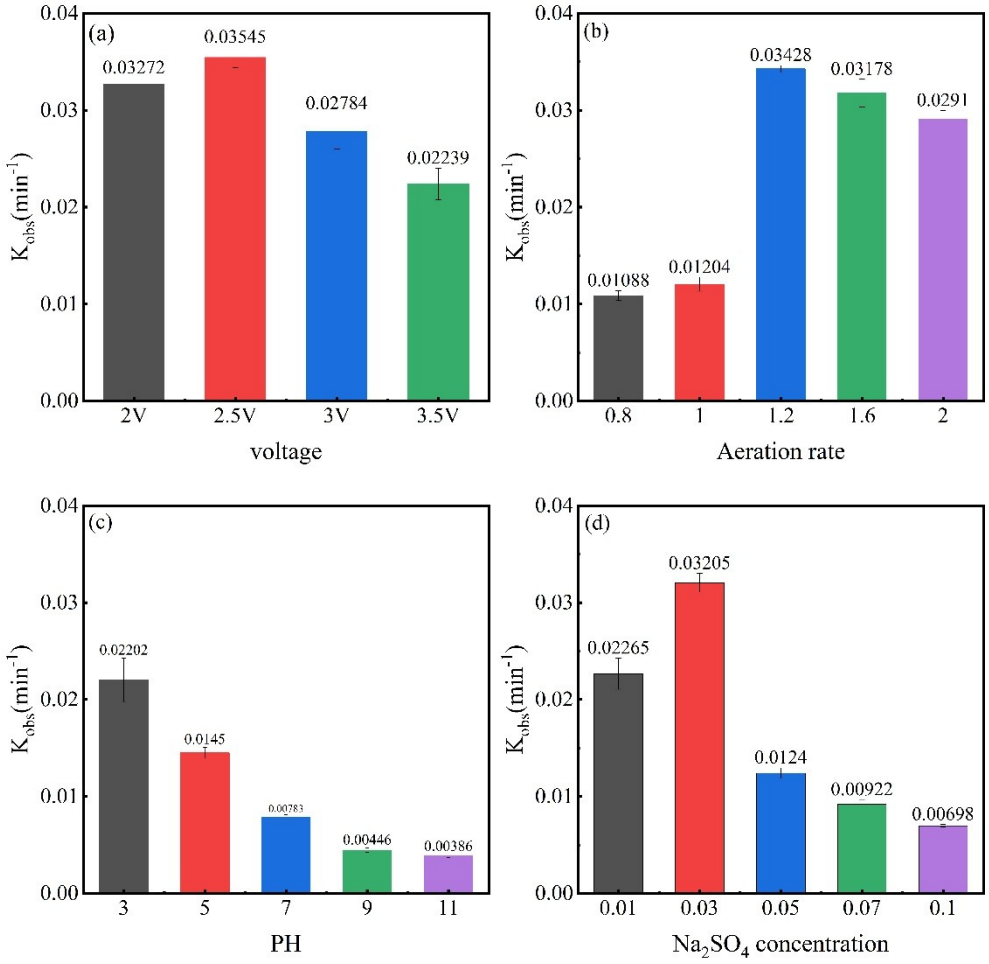


Fig. S3. Kinetic constants of CIP removal by S-nZVI@BC/NF as a function of voltage (a), aeration rate (b), initial pH value (c), and Na_2SO_4 concentration (d)

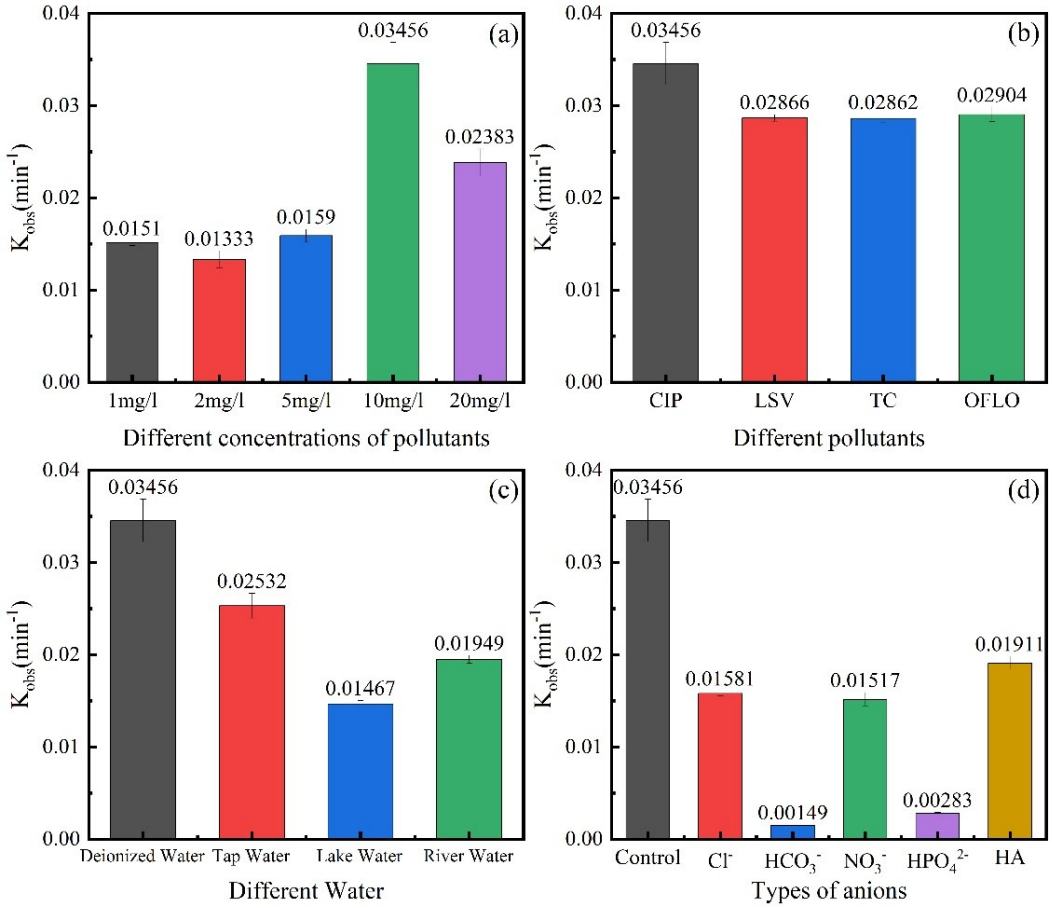


Fig. S4. Kinetic constants of the degradation process of S-nZVI@BC/NF system for different pollutant concentrations (a), different pollutants (b), different water bodies (c), and different anions (d)

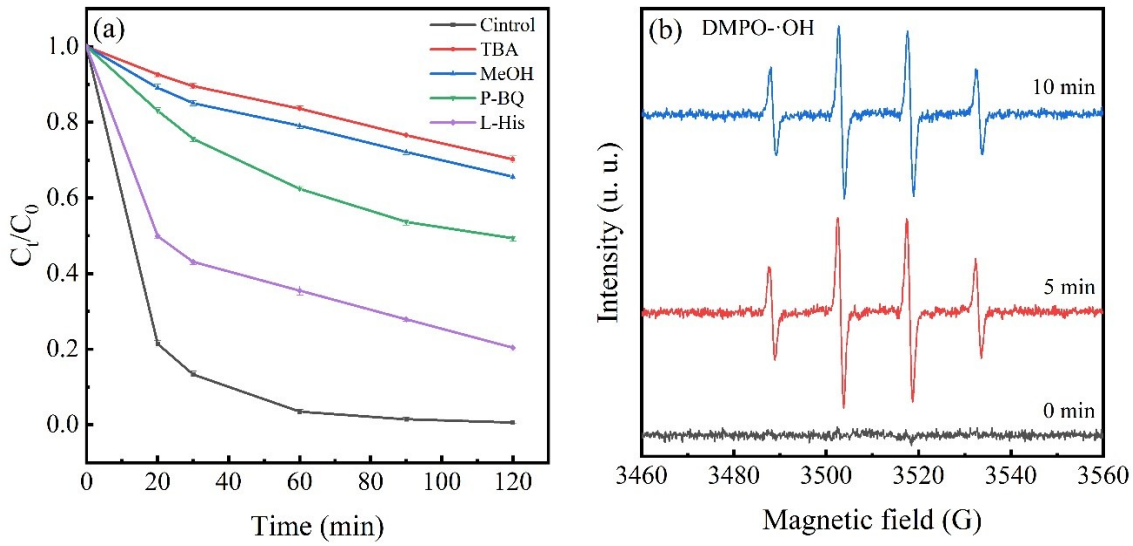


Fig. S5 . Effect of different free radical scavengers on the removal of CIP in the S-nZVI@BC/NF-EF system. Reaction conditions: [CIP] = 10 mg·L^{-1}, U = 2.5 V, initial pH = 3.0, [Na_2SO_4] = 30 mM, Aeration rate = 1.2 L·min^{-1}, and V= 250 mL.

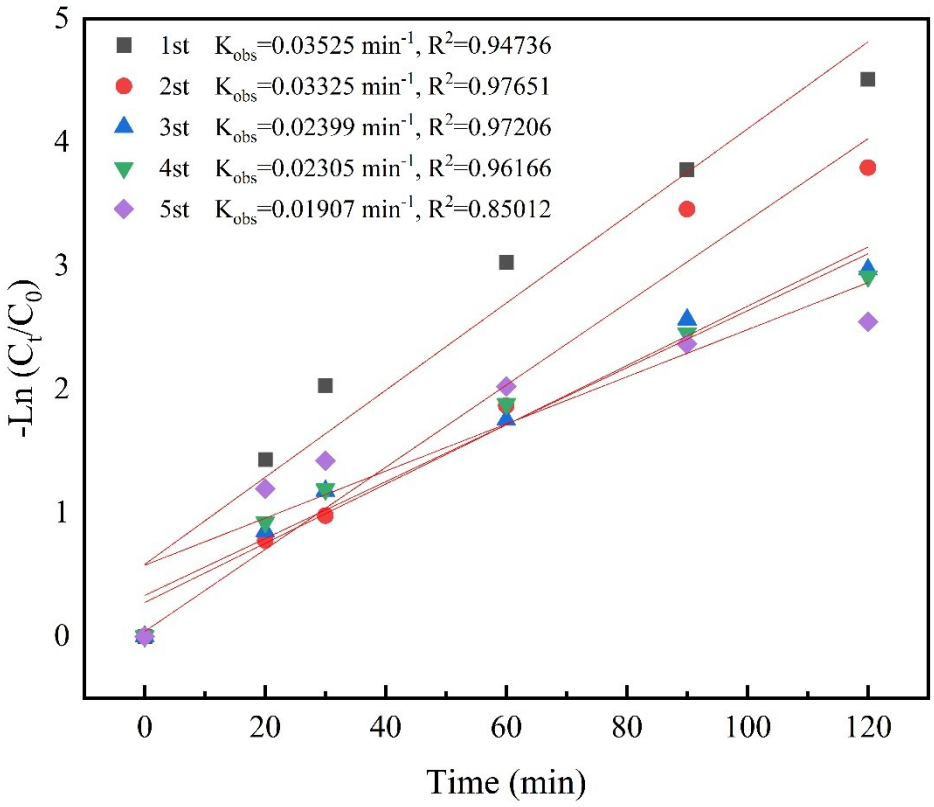
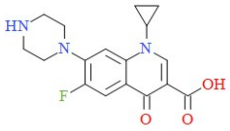
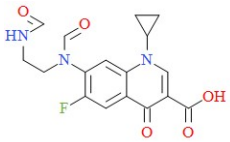
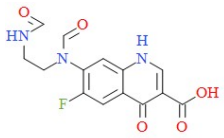
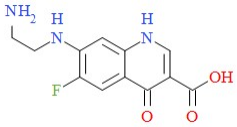
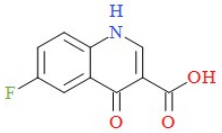
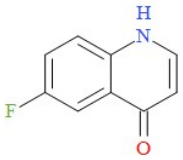
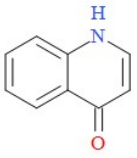
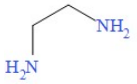
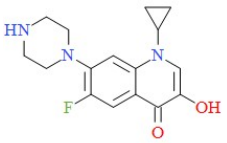


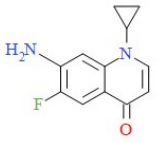
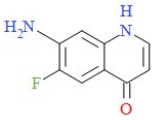
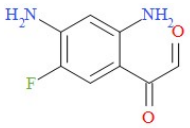
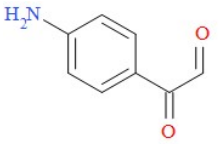
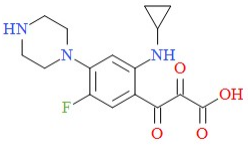
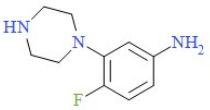
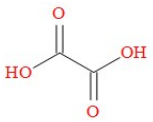
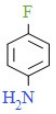
Fig. S6 Dynamic analysis of CIP removal under different cycle times

Type of the water	pH	COD ($mg•L^{-1}$)	HCO_3^- ($mg•L^{-1}$)	HPO_4^{2-} ($mg•L^{-1}$)	Cl^- ($mg•L^{-1}$)	NO_3^- ($mg•L^{-1}$)
Tap water	7.12	30.20	121.25	0.008	0.36	17.25
Lake water	7.44	110.10	1100.25	0.097	52.22	30.23
River water	8.35	165.20	227.76	0.054	113.82	20.74

Table S1. Water quality characteristics of tap water, lake water, and drinking water

Table S2. Intermediates of CIP in the S-nZVI@BC/NF-EF system

Code	m/z	Molecular formula	Chemical structure
CIP	332	$C_{17}H_{18}FN_3O_3$	
P1	361	$C_{17}H_{16}FN_3O_5$	
P2	321	$C_{14}H_{12}FN_3O_5$	
P3	265	$C_{12}H_{12}FN_3O_3$	
P4	207	$C_{10}H_6FNO_3$	
P5	163	C_9H_6FNO	
P6	145	C_9H_7NO	
P7	60	$C_2H_8N_2$	
P8	56	C_4H_8	
P9	303	$C_{16}H_{18}O_2FN_3$	

P10	218	$C_{12}H_{11}FN_2O$	
P11	178	$C_9H_7FN_2O$	
P12	186	$C_8H_7FN_2O_2$	
P13	149	$C_8H_7O_2N$	
P14	338	$C_{16}H_{18}FN_3O_4$	
P15	191	$C_{10}H_{14}FN_3$	
P16	90	$C_2H_2O_4$	
P17	111	C_6H_6FN	
P18	86	$C_4H_{10}N_2$