Supporting information for

Polystyrene Controlled Grown Zerovalent Nanoiron/Magnetite on Sponge-like Carbon Matrix toward Effective Cr(VI) Removal from Polluted Water

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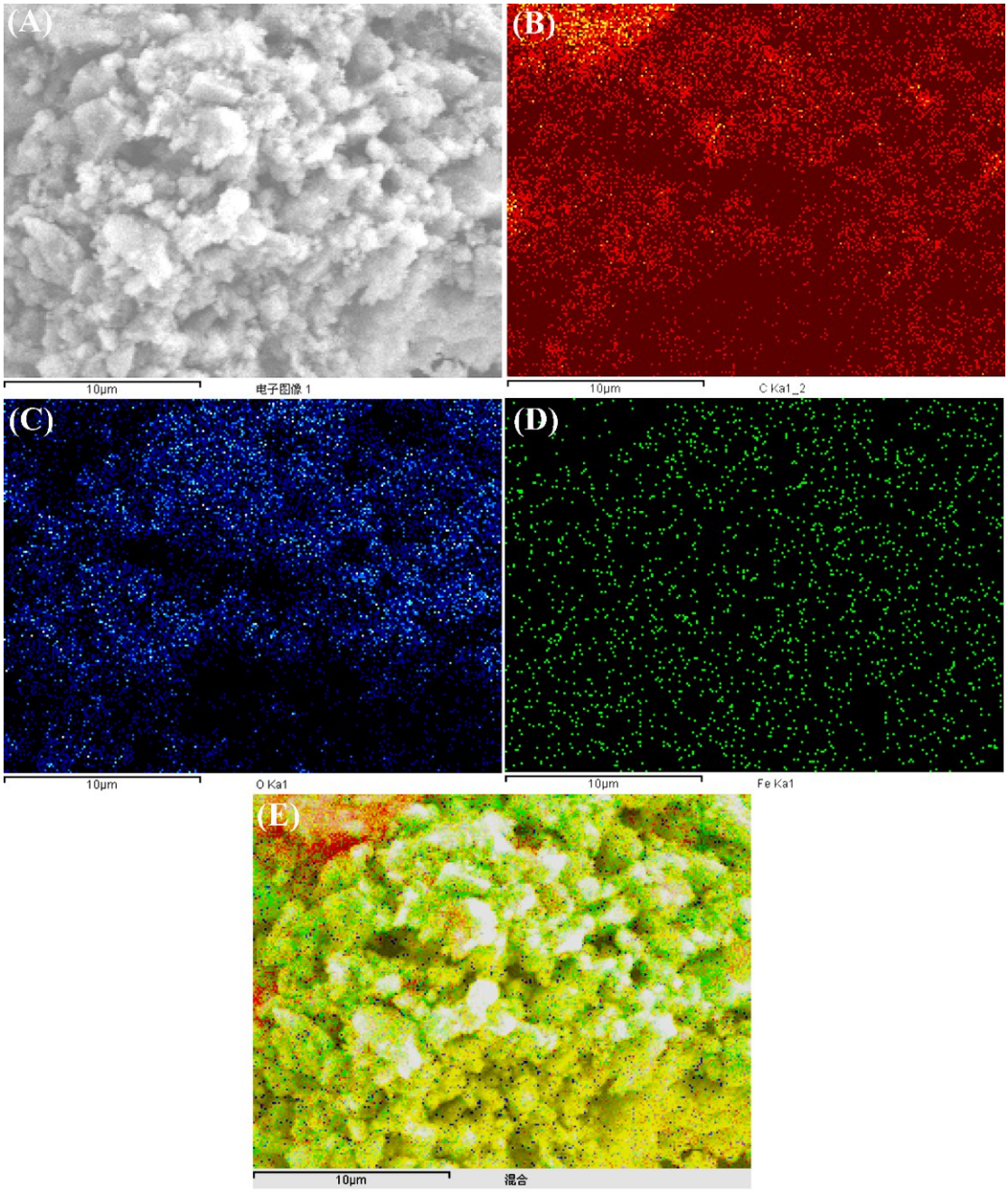

Fig. S1 EDS mapping of the FH (A) zero-loss image, (B) C map, (C) O map, (D) Fe map, (E) C + O + Fe map.

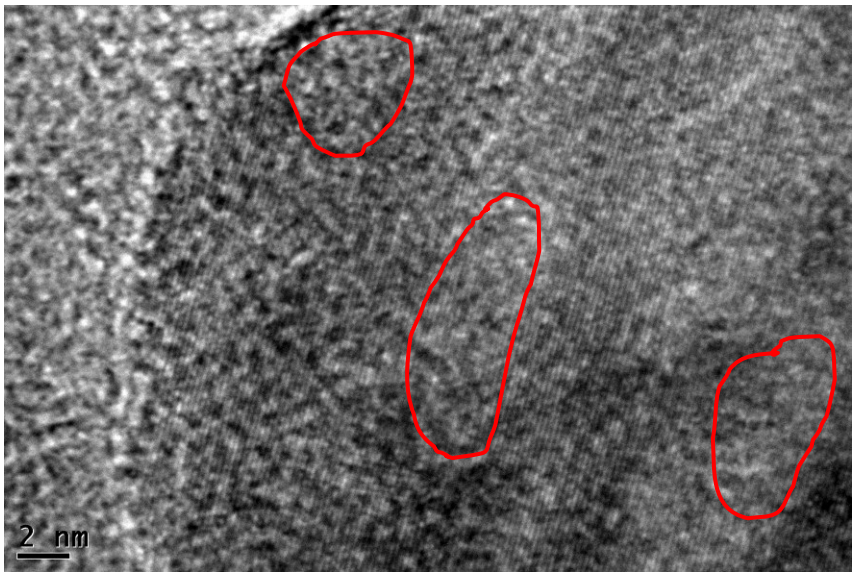

Fig. S2 HRTEM image of UN.

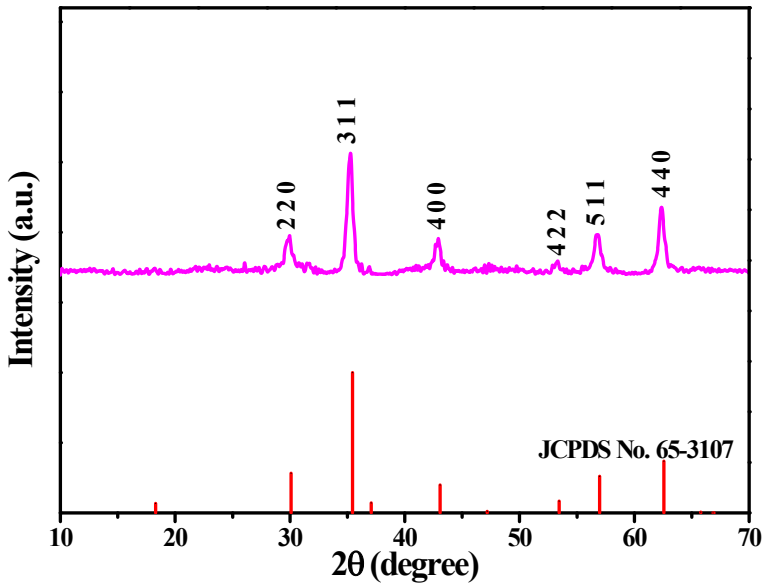

Fig. S3 XRD pattern of FN.

Table S1 The total Cr concentrations (mg L^{-1}) detected by ICP-OES and the Cr(VI) concentrations (mg L^{-1}) detected by colorimetric method in the initial Cr(VI) solution (5.7 mg L^{-1}) after treatment with FH for 5 min at different pH values.

pH	3	5	7	9	11
ICP-OES	0.657	0.542	0.611	0.991	1.777
UV-via	0.532	0.464	0.563	0.957	1.762

Table S2 Fe ion concentrations (mg L^{-1}) in the Cr(VI) solution (5.7 mg L^{-1}) after treatment with FH at different pH values ([C_0[Fe] = 0]).

pH	1	2	3	5	7	9	11
C[Fe]	5.030	0.509	0.244	0.001	0	0	0.368

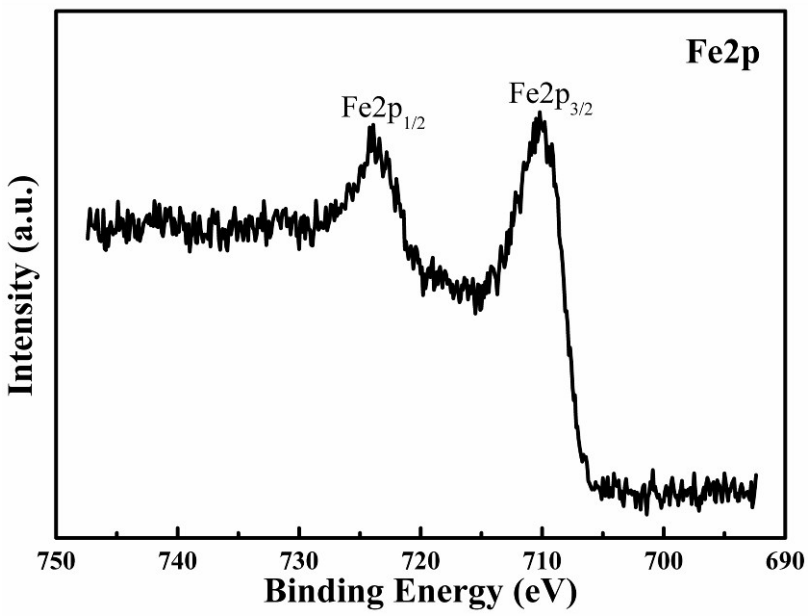

Fig. S4 High resolution Fe2p XPS spectrum of FN.

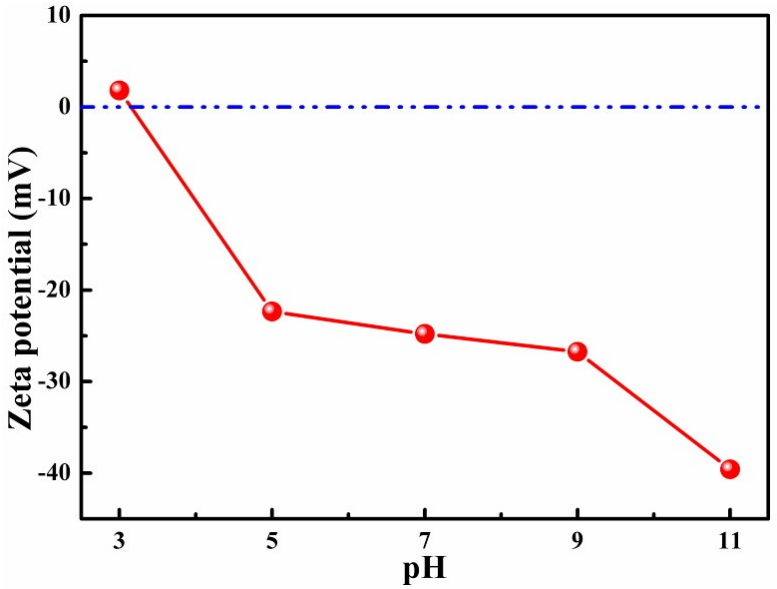

Fig. S5 Zeta potentials of FH as a function of pH.

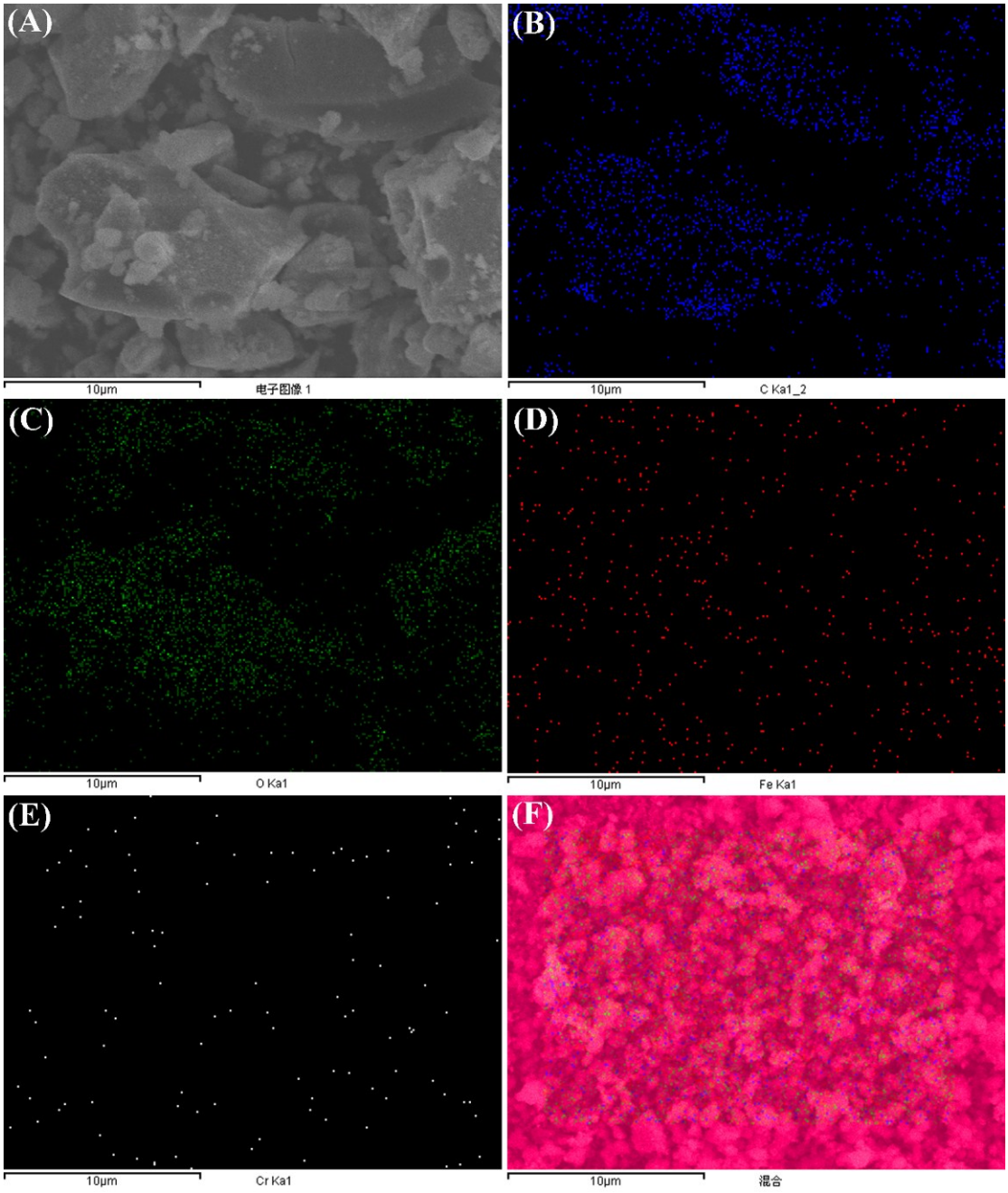

Fig. S6 EDS mapping of the FH (A) zero-loss image, (B) C map, (C) O map, (D) Fe map, (E) Cr map, (F) C + O + Fe + Cr map after treatment with 10 mg L^{-1} Cr(VI) solution at pH = 5.0 for 5 min at room temperature.

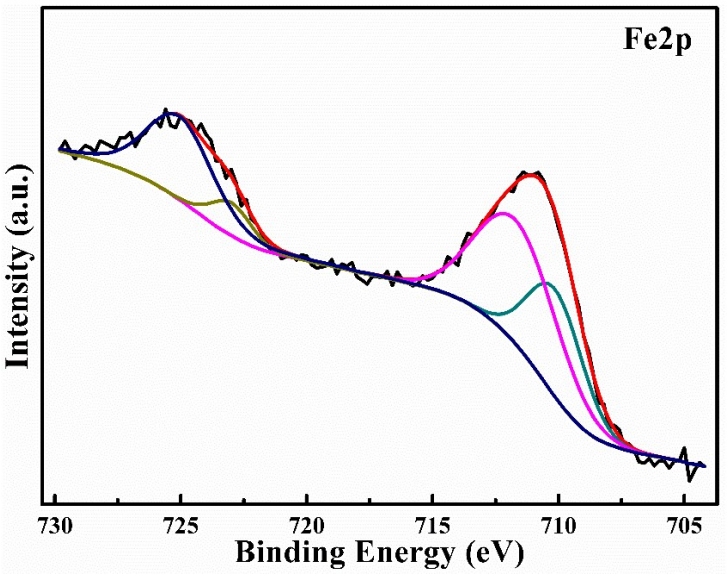

Fig. S7 Fe2p XPS spectra of FH after treatment with 10.0 mg L^{-1} Cr(VI) solution at pH = 5.0 for 5 min at room temperature.

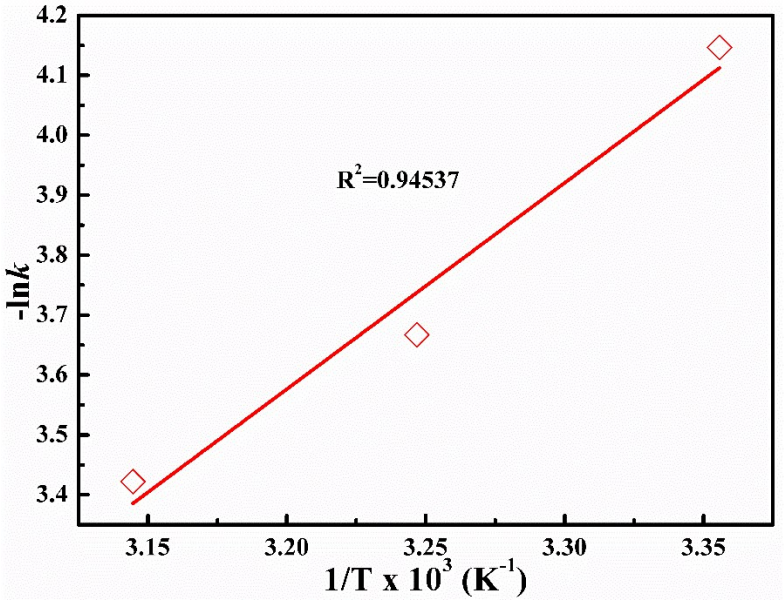

Fig. S8 Plot of -ln*k* *vs*. 1/T × 10^3 for treatment of Cr(VI) onto FH.

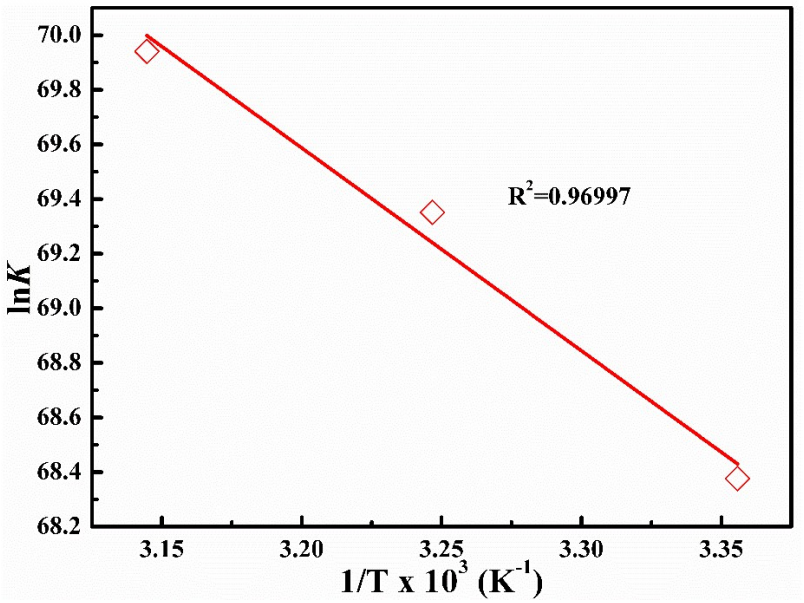

Fig. S9 Plot of ln*K* *vs*. 1/T × 10^3 for thermodynamics of Cr(VI) treatment with FH.