Supporting Information

Hydrogen peroxide activation with sulfidated zero valent iron for simultaneous removal of Cr(VI) and BPA

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SI contains 10 Figures and 1 Table

Figure S1

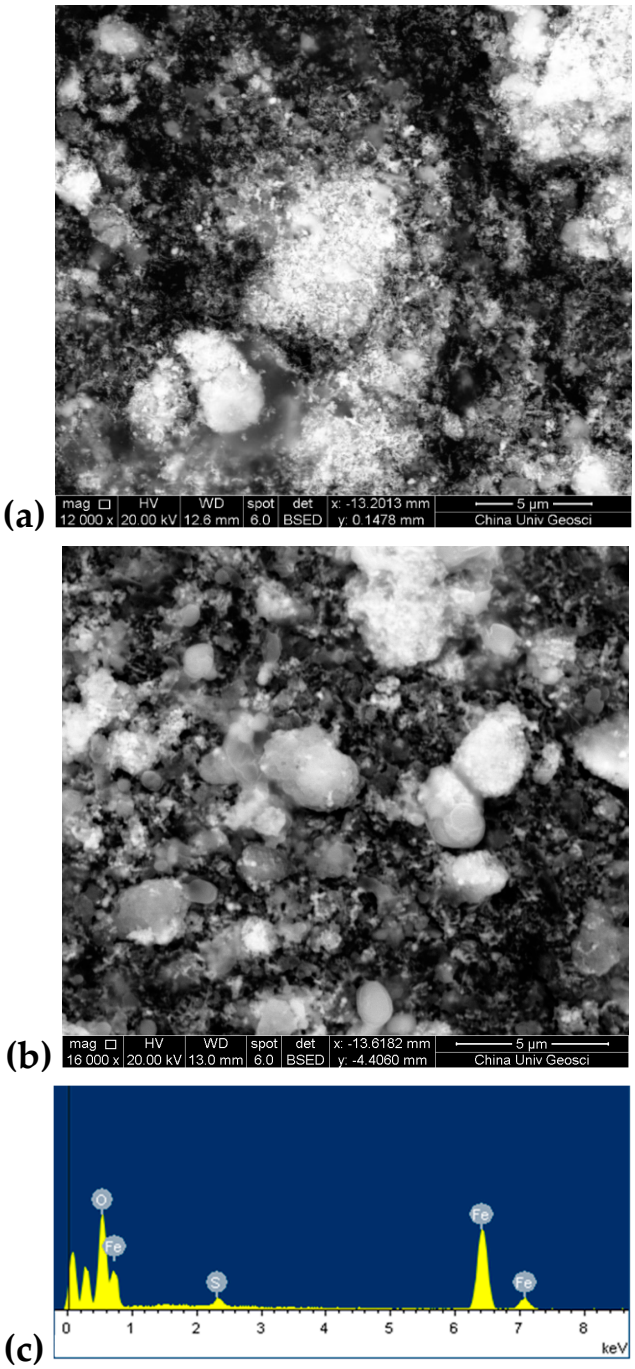

Figure S1. Scanning electron micrograph of S-nZVI particles, (a) and (b) Scanning electron microscopy image of S-nZVI, (c) Spectral recording of a spot on S-nZVI image.

Figure S2

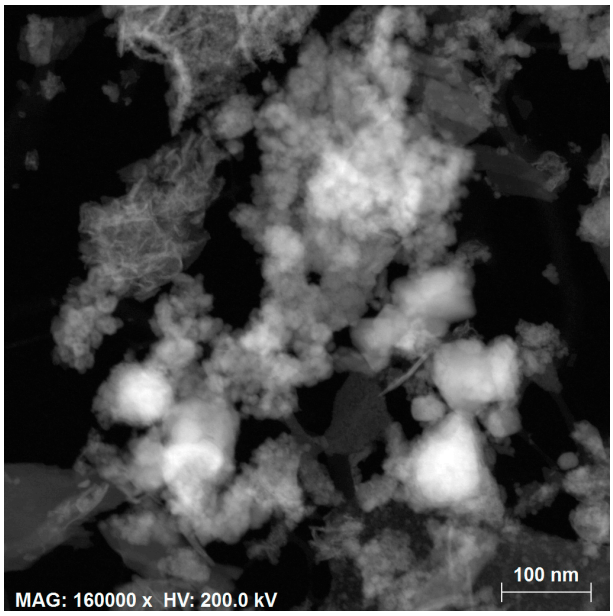

Figure S2. TEM image of S-nZVI.

Figure S3

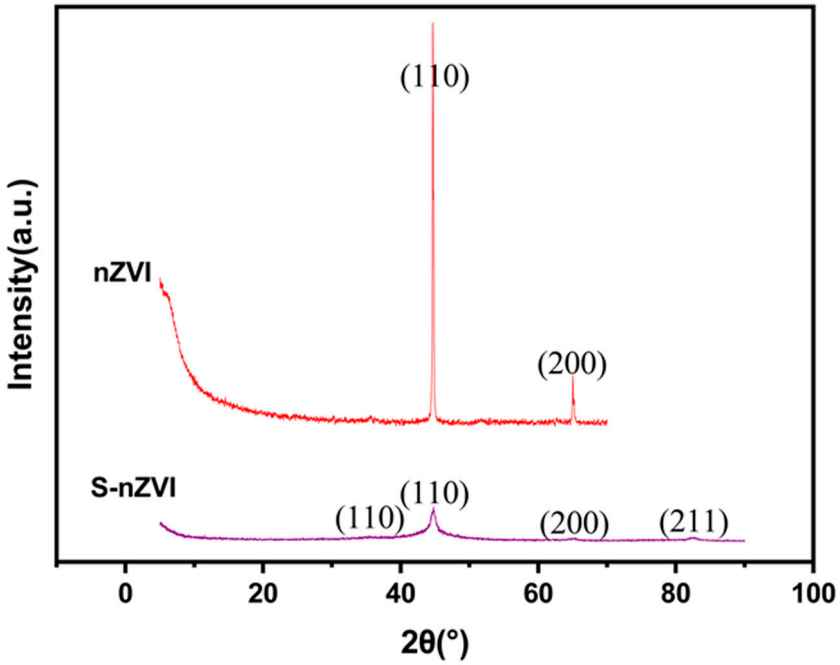

Figure S3. XRD patterns of nZVI and S-nZVI.

Figure S4

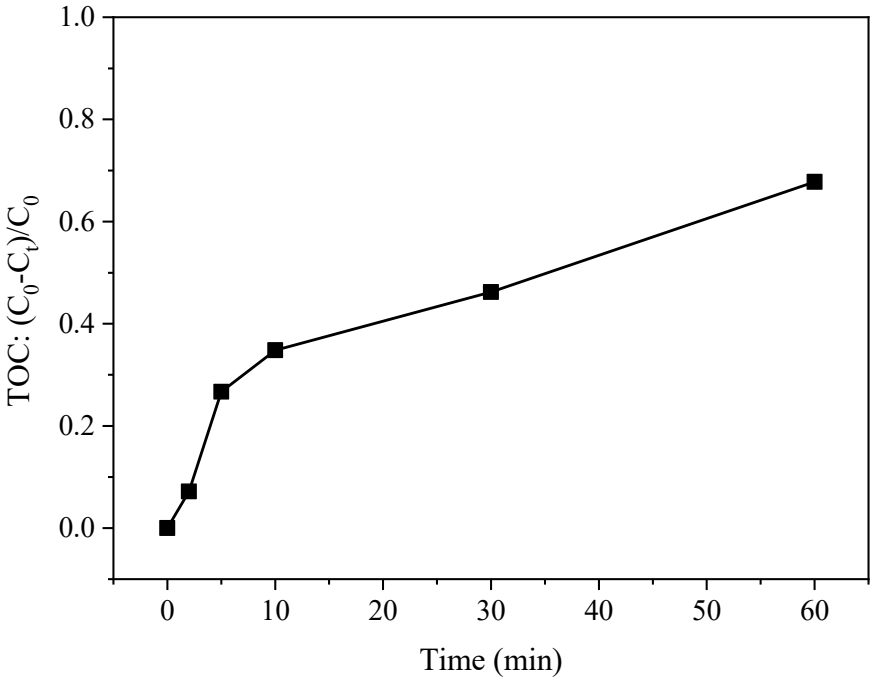

Figure S4. TOC removal efficiency in the S-nZVI/H_2O_2/Cr/BPA reaction system.

Figure S5

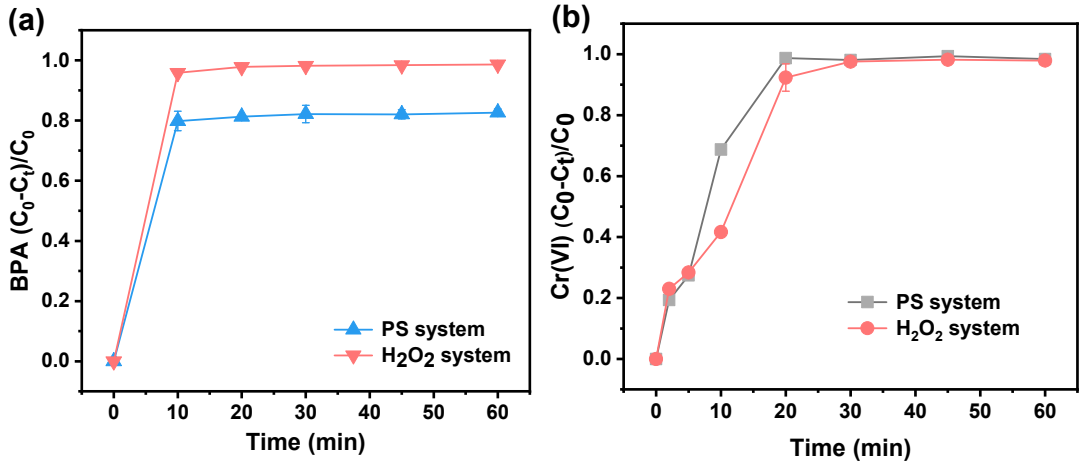

Figure S5. Synchronous removal of (a) BPA and (b) Cr(VI) in systems of S-nZVI/H_2O_2 and S-nZVI/PS.

Figure S6

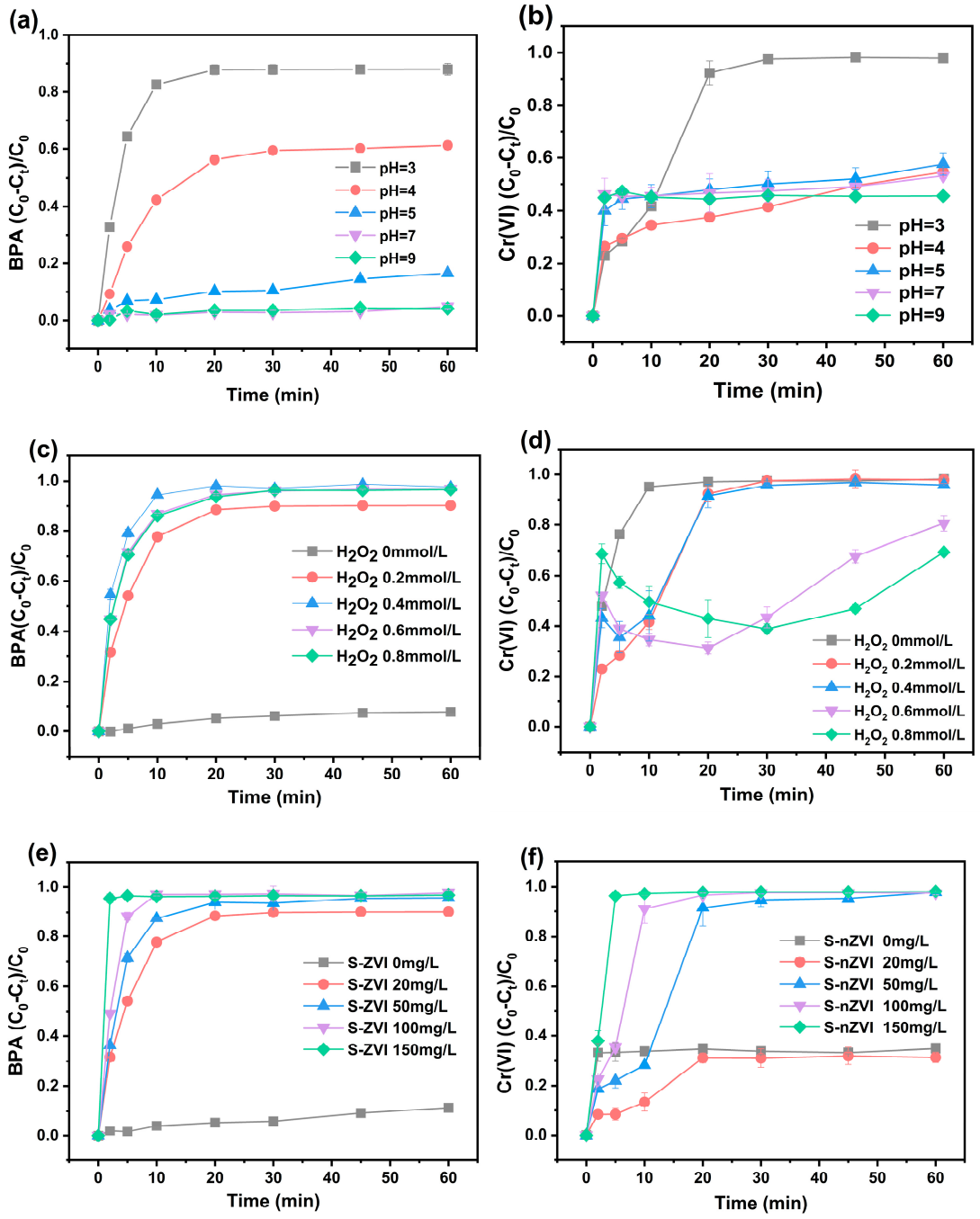

Figure S6. Effect of different conditions on simultaneous removal of BPA and Cr(VI) by S-nZVI; (a) and (b) solution pH;(c) and (d) oxidant dosage;(e) and (f) catalyst dosage.

Figure S7

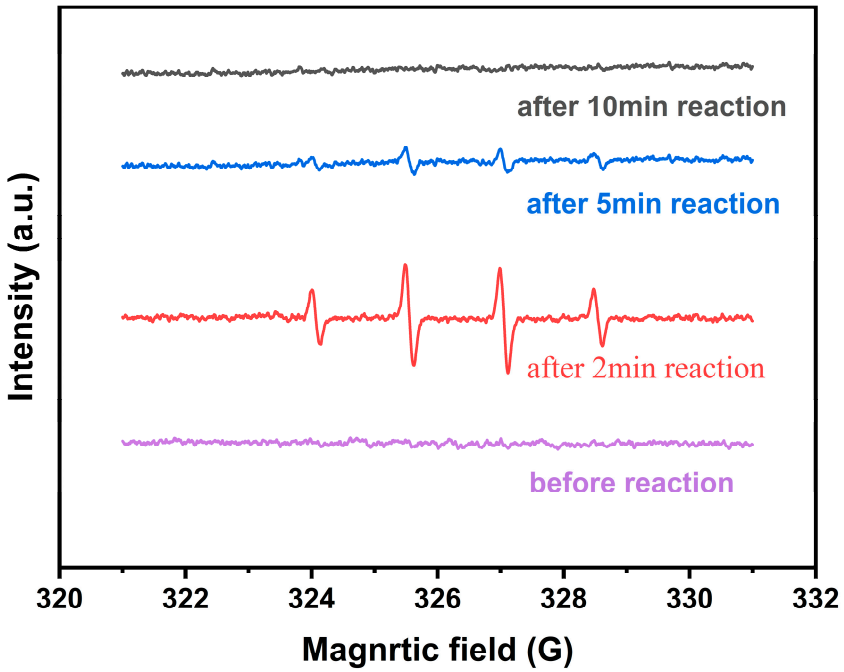

Figure S7. EPR characterization using DMPO

Figure S8

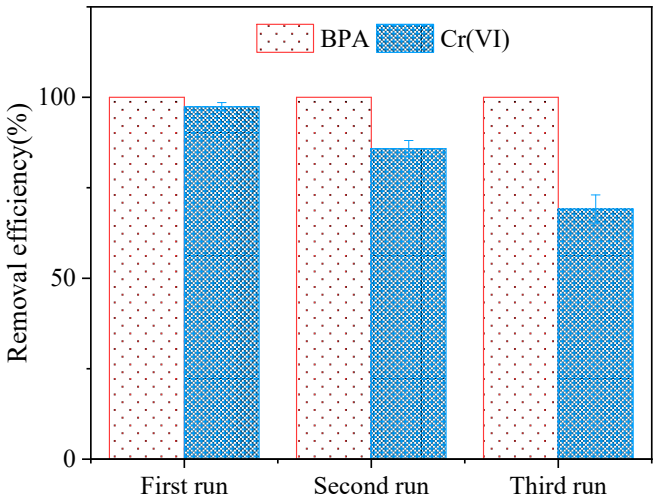

Figure S8. Reusability of S-nZVI for synchronous removal of Cr(VI) and BPA in the S-nZVI/H_2O_2/Cr/BPA reaction system.

Figure S9

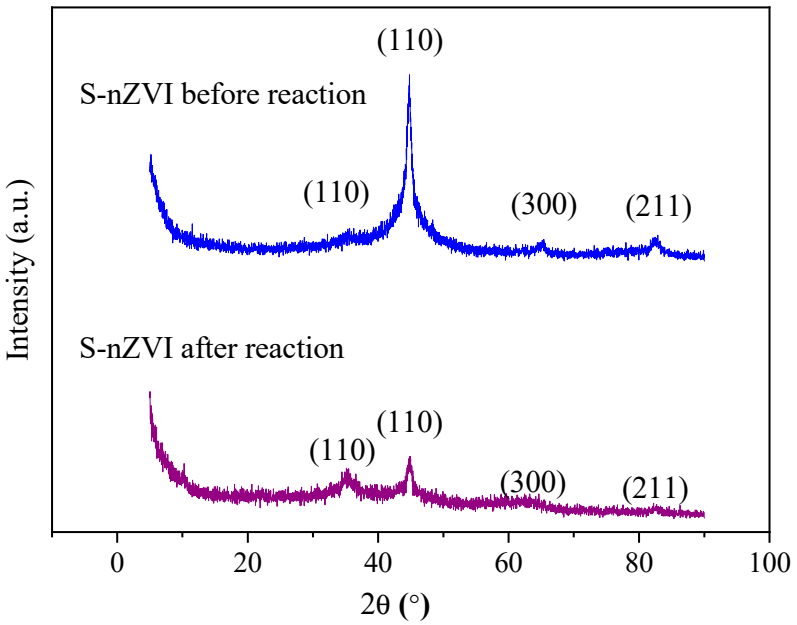

Figure S9. XRD patterns of S-nZVI before and after the reaction in the S-nZVI/H_2O_2/Cr/BPA system.

Figure S10

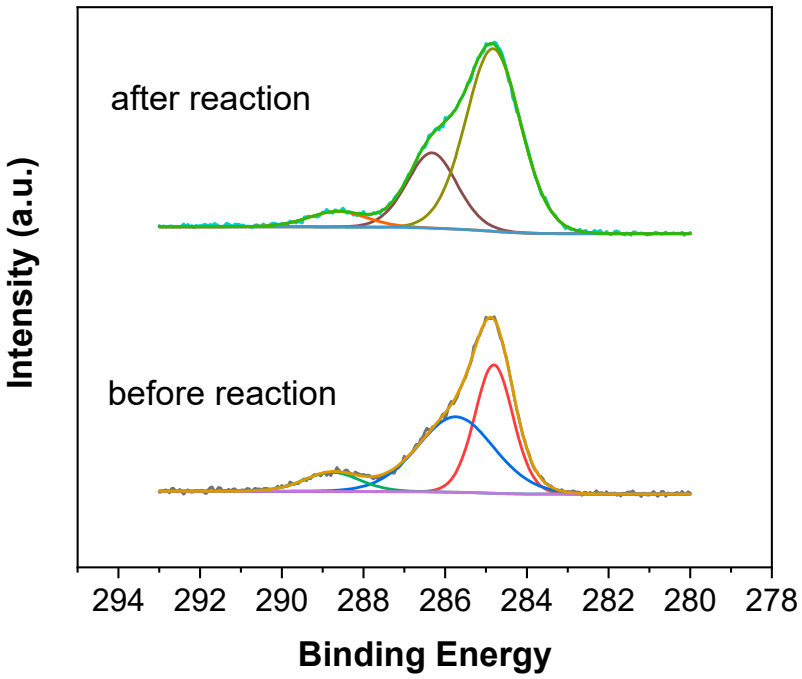

Figure S10. XPS spectra of C 1s of S-nZVI before and after the reaction.

Table S1

Table S1. The atomic fraction of each element of S-nZVI before and after the reaction

Element	Atomic area (%)	
	fresh S-nZVI	used S-nZVI
Fe(II)	29.86	30.48
Fe(III)	23.74	27.32
Fe(0)	2.55	0
SO_4^{2-}	42.41	78.97
SO_3^{2-}	1.35	6.38
S^{2-}	56.45	14.65
Cr_2O_3	0	23.29
$Cr(OH)_3$	0	76.71
O-H group	68.02	84.35
metal oxides	31.98	15.65
C-C	41.83	68.19
C-O	49.16	25.61
C=O	9.01	6.20