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Supplementary Materials

Biochar-Supported FeS/Fe_3O_4 Composite for Catalyzed Fenton-type Degradation of Ciprofloxacin

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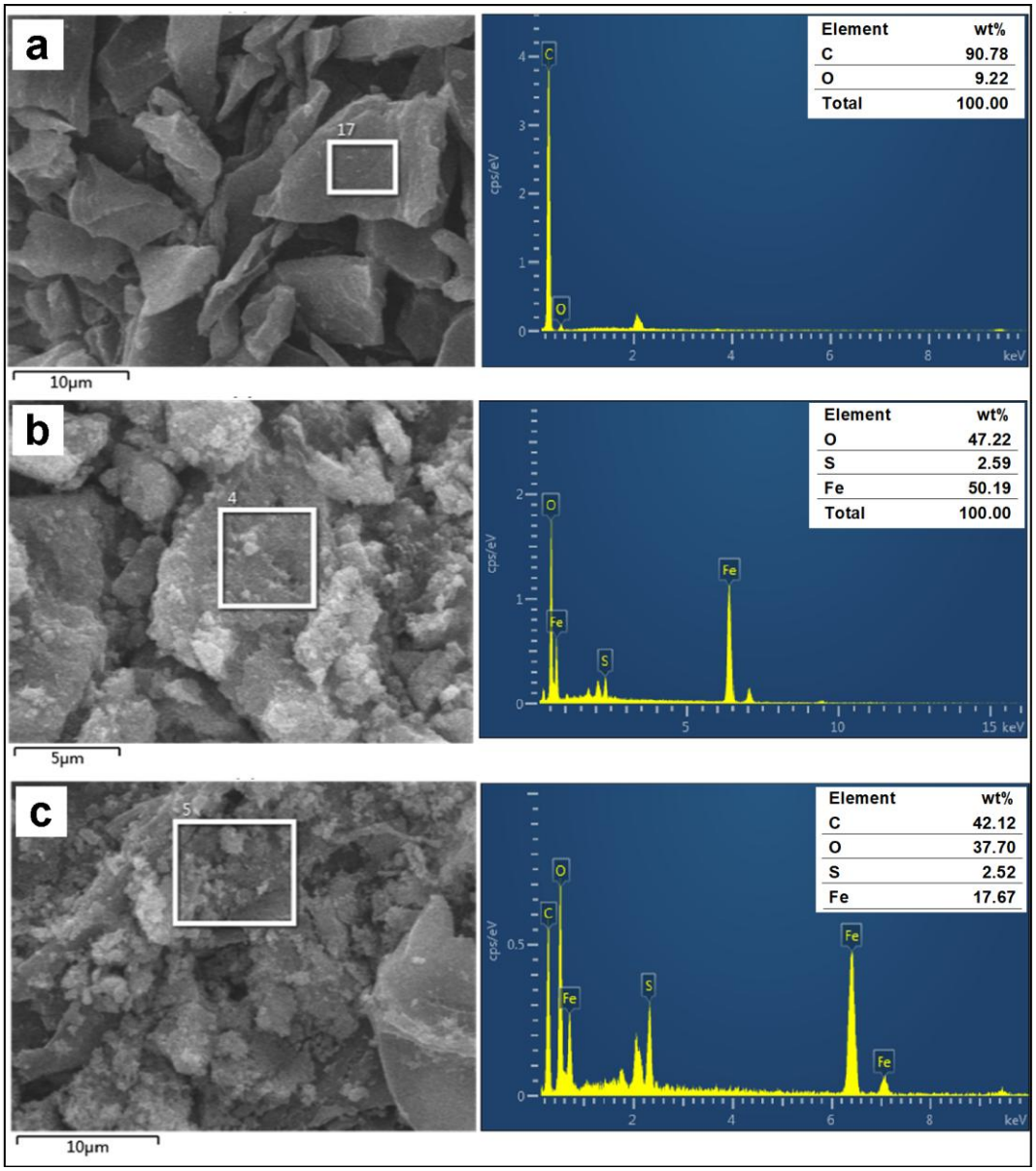

Figure S1. SEM-EDS results of a) BC500 biochar, b) FeS/Fe_3O_4 sample, and c) FeS/Fe_3O_4@BC500 composite.

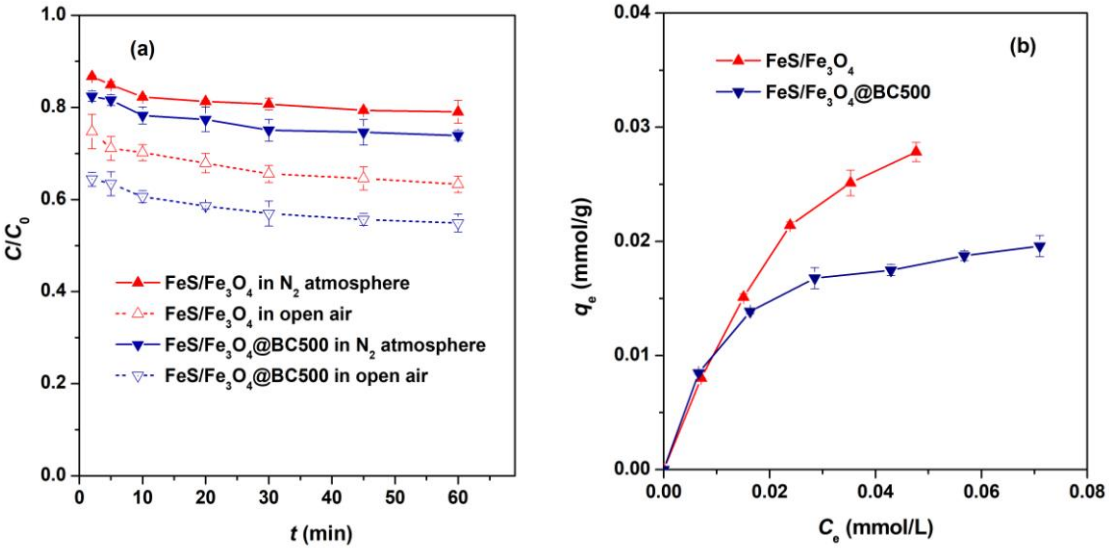

Figure S2. (a) Removal of ciprofloxacin (C_0 = 0.06 mmol/L) by FeS/Fe_3O_4 (0.33 g/L) and FeS/Fe_3O_4@BC500 (1.0 g/L) under nitrogen atmosphere. The dosages of FeS/Fe_3O_4 and FeS/Fe_3O_4@BC500 were set according to that used in the corresponding Fenton-type systems (Figure 4a). (b) Adsorption isotherms of ciprofloxacin (C_0 = 0.015–0.09 mmol/L) by FeS/Fe_3O_4 (1.0 g/L) and FeS/Fe_3O_4@BC500 (1.0 g/L) after equilibration of 24 h under nitrogen atmosphere. The same dosage of FeS/Fe_3O_4 and FeS/Fe_3O_4@BC500 was used here for comparing their adsorption capacity.

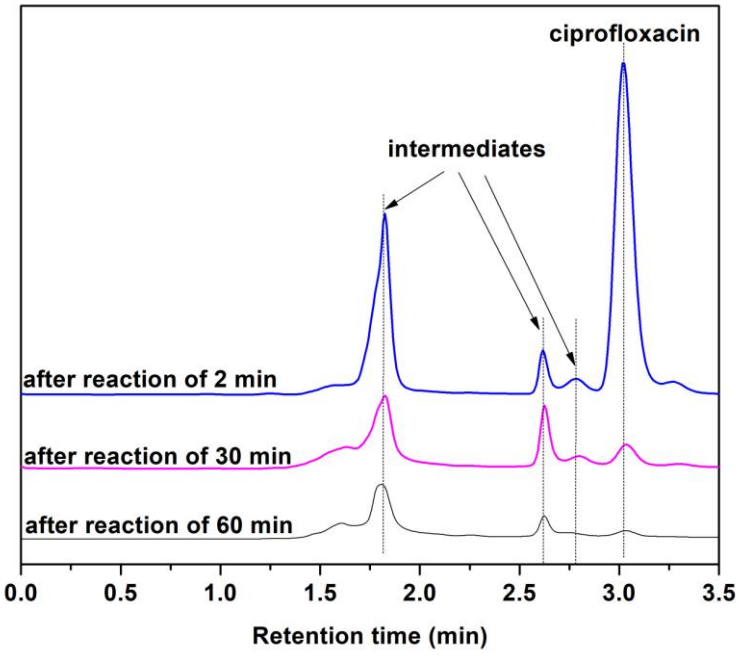

Figure S3. High performance liquid chromatogram of solution samples taken after different reaction time (5, 30 and 60 min) from the Fenton-type system catalyzed by FeS/Fe_3O_4@BC500.

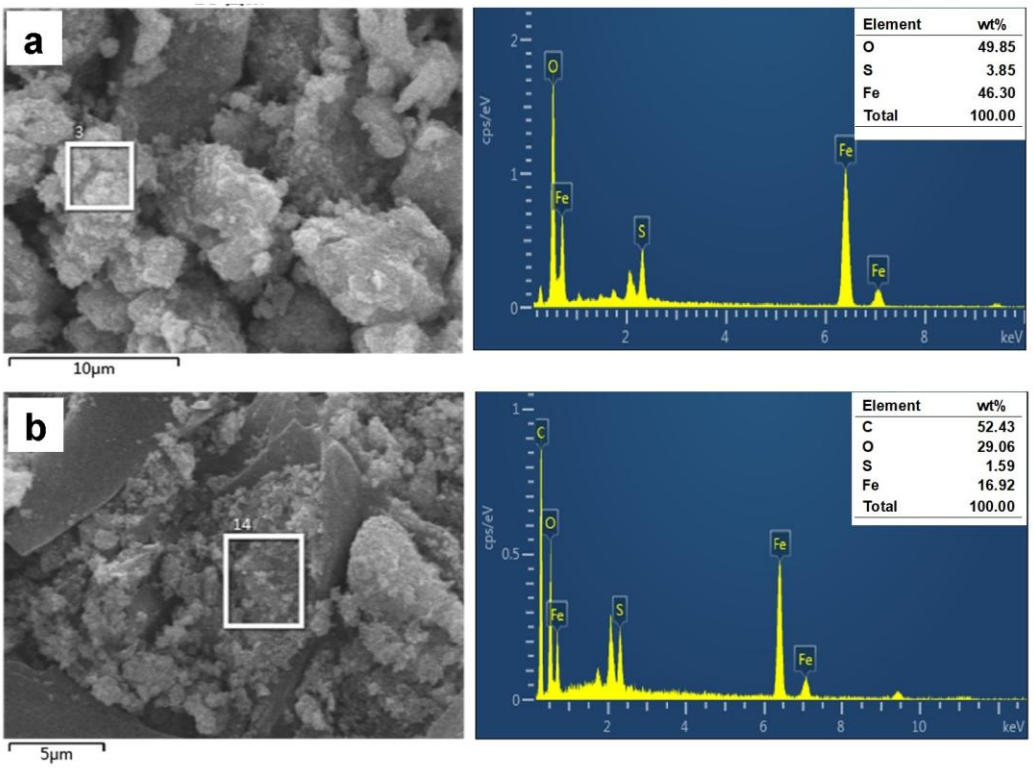

Figure S4. SEM-EDS results of a) FeS/Fe_3O_4 and b) FeS/Fe_3O_4@BC500 composite after reaction. The decreased Fe content was observed in comparison with those pristine samples (Figure S1b and S1c).

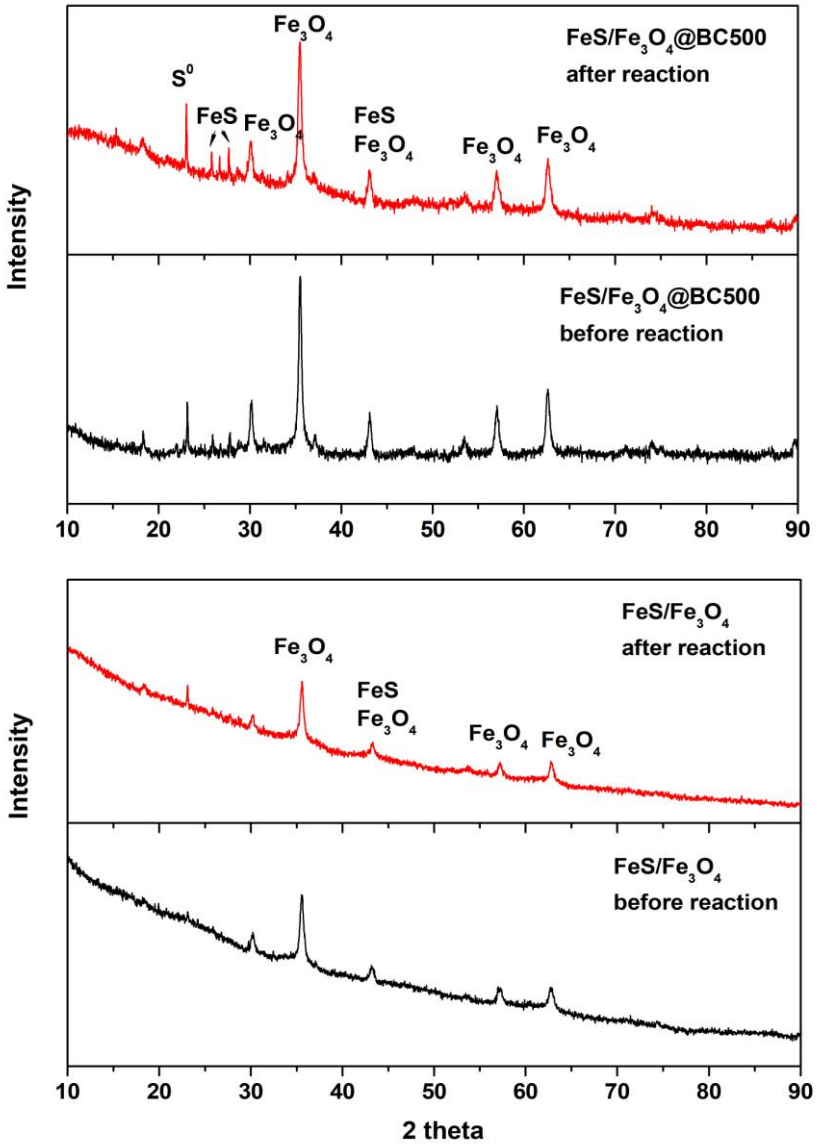

Figure S5. XRD patterns of the FeS/Fe_3O_4 and FeS/Fe_3O_4@BC500 samples after reaction. No significant change was observed in comparison with those pristine samples before reaction.

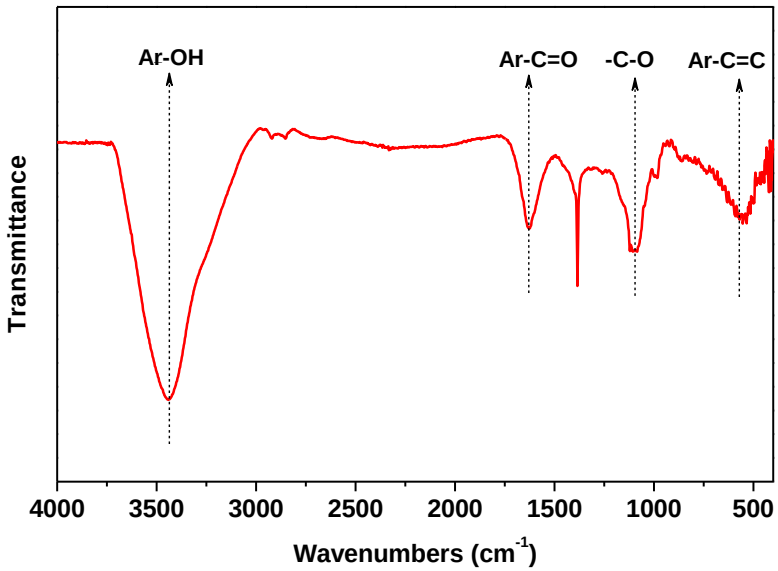

Figure S6. Infrared spectra of BC500 biochar. The bands at 3440, 1630 and 540 cm^{-1} indicate the hydroquinone and quinone structures in the biochar.