

Efficient recovery of Cr(VI) from electroplating wastewater by iron modified sludge-based hollow structured porous carbon: Coexistence affects and competes for adsorption

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SUPPLEMENTARY INFORMATION

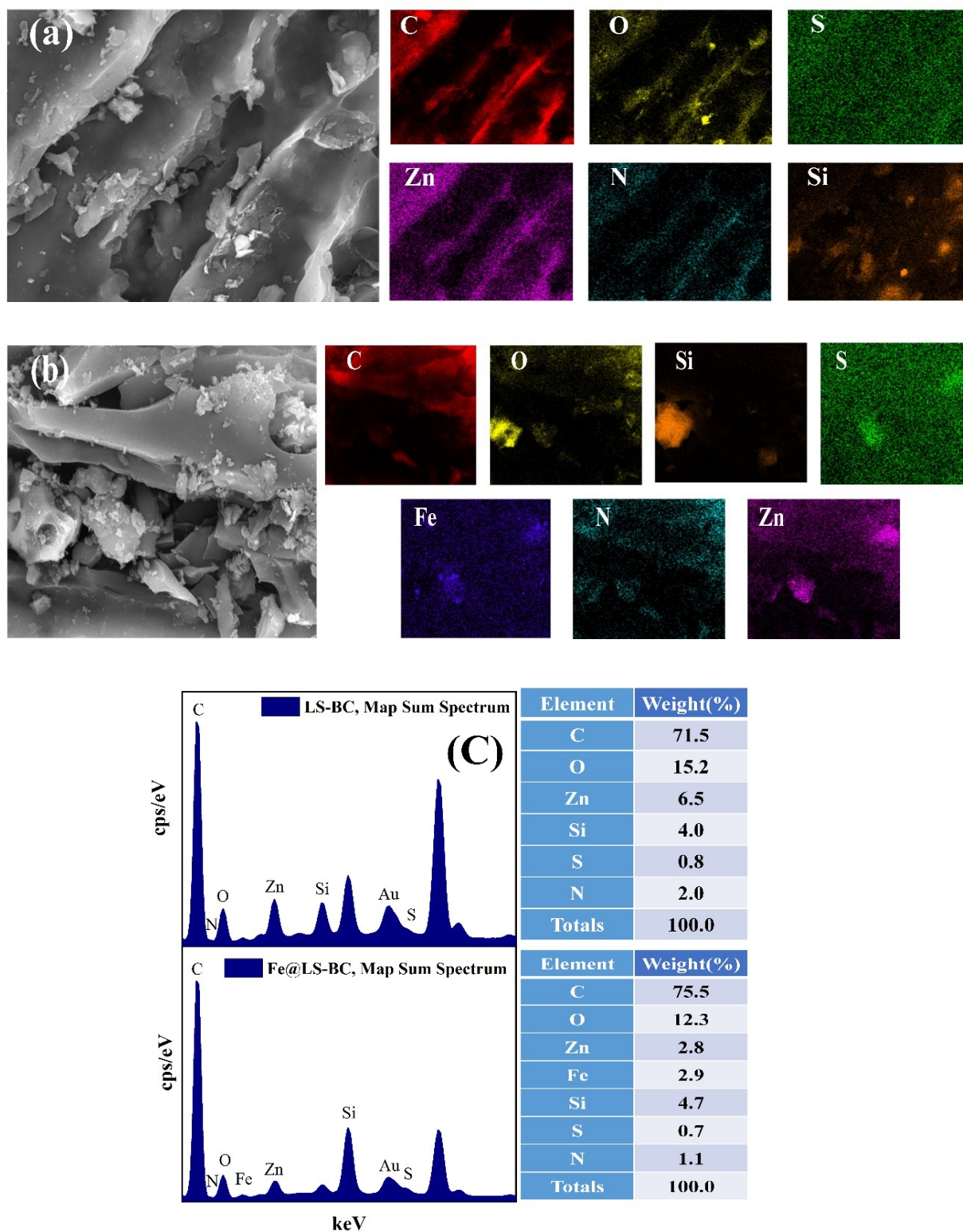


Figure. S1. Elemental mapping of (a) LS-AC, (b) Fe@LS-BC and (c) EDS spectra of LS-BC and Fe@LS-BC.

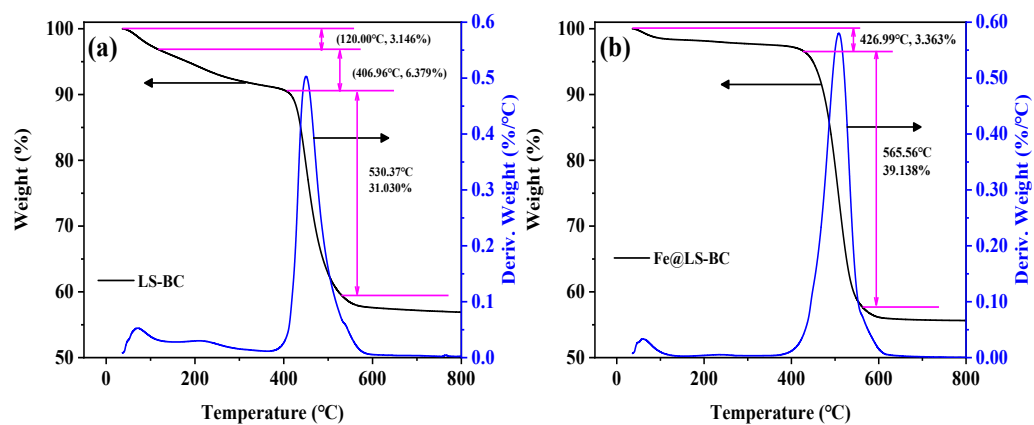


Figure. S2. TGA and DTG curves of (a) LS-BC, and (b) Fe@LS-BC.

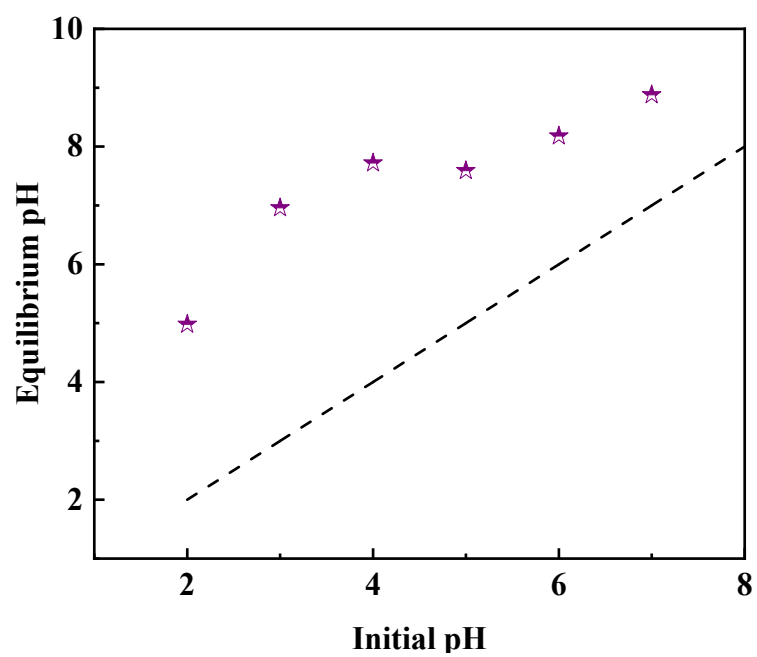


Figure. S3. pH at equilibrium for adsorption of Cr(VI) by Fe@LS-BC (constant duration 360 min; temperature 25°C; initial concentration of Cr(VI) was 50 mg/L; adsorbent dose 0.4 g/L).

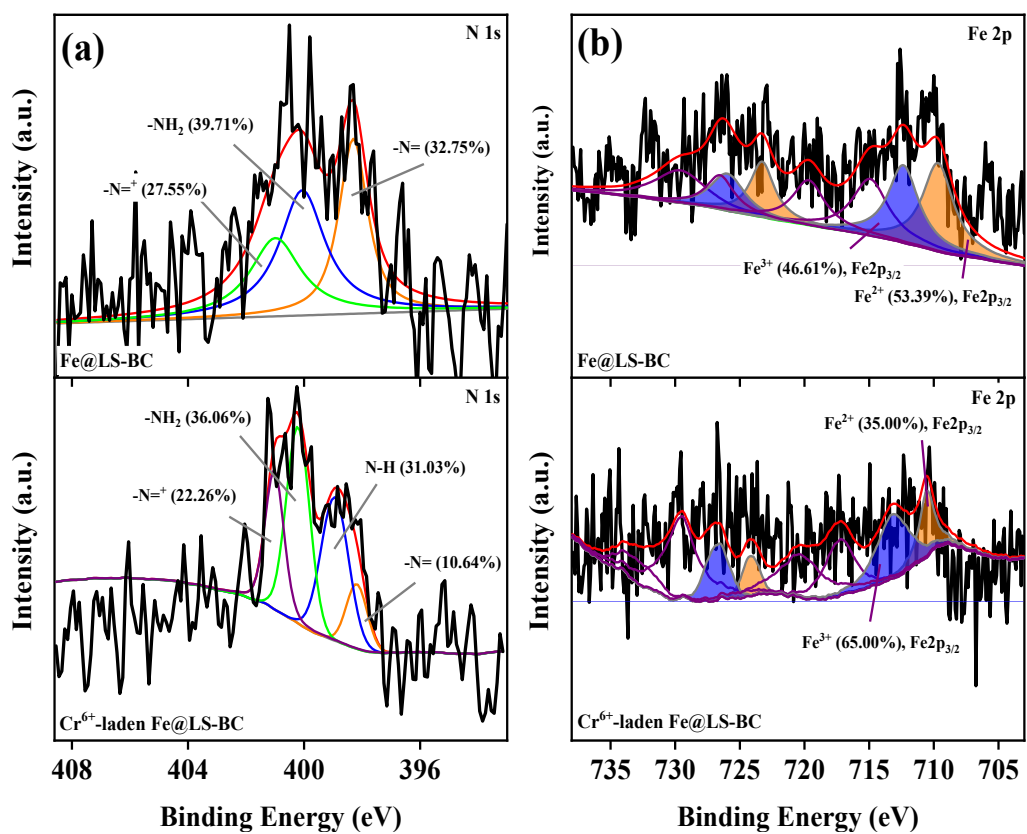


Fig. S4. XPS spectra of Fe@LS-BC (a) survey for N 1s before and after Cr(VI) adsorption, and (b) survey for Fe 2p before and after Cr(VI) adsorption.

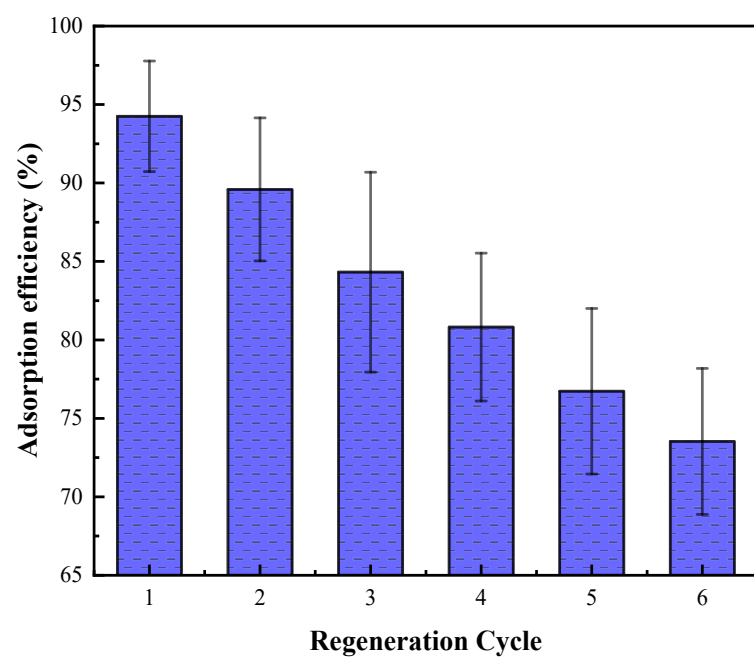


Fig. S5. Adsorption efficiencies of Cr(VI) after regeneration (six cycles).

Figure Legends:

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Table. S1. Characteristics of methyl orange.


| Compound | Chemical formula | Molecular weight (g/mol) | Structure formula |
|---------------|-------------------------|--------------------------|--|
| Methyl orange | $C_{14}H_{14}N_3SO_3Na$ | 327.33 |  |

Table. S2. Physical Characteristics of pore structure of Fe@LS-BC.

| Samples | S_{BET} (m ² /g) | Micropore Surface Area (m ² /g) | V_{mic} (cm ³ /g) | V_{T} (cm ³ /g) | D_{p} (nm) |
|----------|--------------------------------------|---|---------------------------------------|-------------------------------------|---------------------|
| Fe@LS-BC | 243.823 | 87.670 | 0.040 | 0.302 | 4.958 |